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BELL & HOWELL COMPANY

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

March 5, 1968 Volume 848 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of January 1968

Examiner affirmed	203
Examiner affirmed in part	30
Examiner reversed	58
Total	291

Reprint of "Consolidated Listing of Notices"

An extract from the Decision Leaflet and the OFFICIAL GAZETTE of January 16, 1968, entitled "Consolidated Listing of Recent O.G. Notices Re Patent Office Practices and Procedures" has been reprinted and is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. Price 10 cents.

Modification of Notice of January 31, 1967

The practice set forth in the notice of January 31, 1967, entitled "Double Patenting" (834 O.G. 1615), is modified to the extent that when a single inventive entity is involved a terminal disclaimer will be accepted to avoid a double patenting rejection even if the claims overlap, if the claims which would otherwise be subject to such rejection could not have been allowed in the other application or patent, and if the terminal disclaimer further provides that the patent shall expire immediately if it ceases to be commonly owned with the other application or patent.

EDWARD J. BRENNER,
Commissioner.

Feb. 14, 1968.

Disclaimers and Dedications

2,889,775.—*Harold D. Owen*, Fort Worth, Tex. OPEN HOLE PERFORATOR FIRING MEANS. Patent dated June 9, 1959. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,908,222.—*Andre Blanchard* and *James B. Shore*, Houston, Tex. APPARATUS FOR DETONATING SHAPED EXPLOSIVE CHARGES. Patent dated Oct. 13, 1959. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,912,930.—*Blake M. Caldwell*, Fort Worth, Tex. PERFORATING ASSEMBLY. Patent dated Nov. 17, 1959. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,915,011.—*Robert B. Hamill*, Great Bend, Kans. STABILIZER FOR WELL CASING PERFORATOR. Patent dated Dec. 1, 1959. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,924,173.—*John J. Robertson*, Fort Worth, Tex. WELL PERFORATOR FIRING MEANS. Patent dated Feb. 9, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,925,775.—*Donovan S. McKee*, Oklahoma City, Okla. WELL CASING PERFORATOR. Patent dated Feb. 23, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,926,603.—*Will H. Lindsay, Jr.*, Fullerton, Calif. WELL PERFORATOR SHAPED CHARGE. Patent dated Mar. 1, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,927,485.—*Joe W. Dobkins*, Fort Worth, Tex. MACHINE FOR BLOCKING SCREW THREADS. Patent dated Mar. 8, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,927,644.—*Blake M. Caldwell*, Fort Worth, Tex. JUNK BASKET. Patent dated Mar. 8, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

New Applications Received During January 1968

Patents	7337
Designs	391
Plant Patents	5
Reissues	33
Total	7776

Issue—March 5, 1968

Patents	1050	No. 3,371,351 to No. 3,372,400, incl.
Designs	96	No. 210,347 to No. 210,442, incl.
Plant Patents	3	No. 2,797 to No. 2,799, incl.
Reissues	6	No. 26,355 to No. 26,360, incl.
Total	1155	

2,935,020.—*George C. Howard*, Tulsa, Okla., and *Blake M. Caldwell*, Arlington, Tex. APPARATUS FOR CUTTING HOLES IN WELL CASING. Patent dated May 3, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignees, *Pan American Petroleum Corporation* and *Halliburton Company*.

Hereby disclaim and dedicate to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

Adjudicated Patents

(D.C.N.Y.) Ritter Patent No. 2,563,673 (260—545), for METHOD OF PRODUCING N-MONO SUBSTITUTED IMIDIC COMPOUNDS, *Held* valid but not infringed. *Ritter* v. *Rohm and Haas Co.*, 271 F. Supp. 412; — USPQ —.

(D.C. Wis.) Leach, Manthie and Clapp Patent No. 2,580,306 (302—56), for SILO UNLOADER. Claims 2, 6, 8, 11, 12, 15 to 17, and 20 *Held* invalid and infringed. *Leach* v. *Rockwood & Co.*, 273 F. Supp. 779; 154 USPQ 357.

(D.C. Del.) Sperti Patent No. 2,588,337 (99—205), for CONCENTRATION OF ORANGE JUICE. Claims 2 and 3 *Held* valid but not infringed. *Sperti Products, Inc.* v. *Coca-Cola Co.*, 272 F. Supp 441; 155 USPQ 551.

(D.C. Mich.) Allen Patent No. 2,593,957 (73—37.9), for FLUID LEAKAGE GAUGING DEVICE. Claims 9 to 13 and 15 *Held* invalid. *The Bendix Corp.* v. *Freeland Gauge Company*, 271 F. Supp. 888; 154 USPQ 284.

(D.C.N.Y.) Dangelmajer Patent No. 2,643,983 (260—40), for COMPOSITION OF MATTER. Claims 1 and 3 *Held* invalid but not infringed. *Emsig Mfg. Co.* v. *Merit Plastics*, 270 F. Supp. 841; 154 USPQ 76.

(D.C. Wis.) Randolph T. Rosten Patent No. 2,906,332 (137—624.2), for AUTOMATIC CONTROL APPARATUS FOR A MOTOR-DRIVEN WATER SOFTENER. Claim 9 *Held* invalid. *Rosten* v. *Borerud Mfg. Co.*, 271 F. Supp 874; — USPQ —.

(D.C. Del.) Cole, Walker, and Reed Patent No. 2,967,778 (99—205), for METHOD FOR MAKING JUICE CONCENTRATES. Claims 4 to 8 *Held* invalid. *Sperti Products, Inc.* v. *Coca-Cola Co.*, 272 F. Supp. 441; 155 USPQ 551.

(D.C.N.Y.) Gans Patent No. 2,986,857 (53—48), for MACHINE AND METHOD FOR PACKING ARTICLES. Claim 4 *Held* invalid. *Old Dominion Box Co.* v. *Continental Can Co.*, 273 F. Supp. 550; 155 USPQ 70.

(D.C.N.Y.) Weiss Patent No. 2,990,997 (229—40), for PAPERBOARD CARRIER. Claims 1, 2 and 4 *Held* invalid. *Id.*

(D.C.N.Y.) Bratz Patent No. 3,015,969 (74—501), for PUSH-PULL CABLE. Claims 1 and 4 *Held* invalid. *Teleflex, Inc.* v. *American Chain & Cable Co.*, 273 F. Supp. 573; — USPQ —.

(D.C.R.I.) Ronci Patent No. 3,050,877 (36—34), for HEEL LIFT. Claims 1 to 4 *Held* invalid and not infringed. *Eastern Plastic Corp.* v. *Ronci*, 273 F. Supp. 853; 154 USPQ 489.

(D.C. Ill.) Williams Patent No. 3,057,467 (206—46), for PACKAGE FOR TREATING AGENTS AND DISPOSABLE APPLICATOR FORMING A PART THEREOF. Claims 1 and 2 *Held* valid and infringed. *Canaan Products Inc.* v. *Edward Don & Co.*, 273 F. Supp. 492; 154 USPQ 393.

(D.C. Ill.) Brekke Patent No. 3,083,930 (243—118.4), for WINDING FORMS. Claims 4 and 5 *Held* invalid. *Amerline Corp.* v. *Cosmo Plastics Co.*, 271 F. Supp. 215; 153 USPQ 707.

(D.C. Mich.) Freeman and Freeman Patent No. 3,090,614 (279—273), for HOLDER. *Held* invalid. *Stilson Tool, Inc.* v. *Associates Mach. Co. et al.*, 271 F. Supp. 597; 154 USPQ 76.

(D.C. Ill.) Muszyuski and Weuuch Patent No. 3,117,294 (336—192), for BOBBIN AND INSULATED LEAD-IN MEANS. Claims 1 to 4 *Held* invalid. *Amerline Corp.* v. *Cosmo Plastics*, 271 F. Supp. 215; 153 USPQ 707.

(D.C. Ill.) Hyde, McLaughlin and Kuellmar Patent No. 3,168,053 (15—93), for MOVABLE BULKHEAD FOR RAILROAD CARS, *Held* invalid but infringed if valid. *Unarco Industries, Inc.* v. *Evans Products Co.*, 275 F. Supp. 331; 155 USPQ 234.

(D.C. Iowa) Isbell Patent No. 3,210,767 (342—792.5), for FREQUENCY INDEPENDENT UNIDIRECTIONAL ANTENNAS, *Held* invalid. *University of Illinois Foundation* v. *Winegard Co.*, 271 F. Supp. 412; 155 USPQ 58.

(D.C.N.Y.) McNeill Design Patent 195,311 (D81—4), for PAIR OF SPECTACLES, *Held* invalid. *Bachmann Bros., Inc.* v. *Optic-Ray Inc.*, 273 F. Supp. 847; 155 USPQ 160.

Patent Cases

[37 CFR Parts 1, 3]

FORMS, AND RULES OF PRACTICE

Notice of Proposed Defensive Publication Program

Notice is hereby given that the Patent Office proposes to amend the rules of practice relating to patents in the manner set forth below. The amendments are proposed pursuant to the authority contained in Title 35 U.S.C., section 6.

All persons interested in presenting their views and objections and recommendations in connection with the proposed changes are invited to do so on or before Wednesday, March 27, 1968, on which day a hearing will be held at 10:00 a.m. in Room 3D50 of Crystal Plaza Building 34. All persons wishing to be heard orally are requested to notify the Commissioner of Patents of their intended appearance.

Sections 1.11, 1.14, 1.101, 1.103, 1.108 and 1.201 of Title 37 CFR (Patent Rules 11, 14, 101, 103, 108 and 201) are proposed to be amended and a new § 1.139 (Patent Rule 139) is proposed to be added for the purpose of instituting a new defensive publication program. A new section 3.50 is proposed to be added for the purpose of implementing the new defensive publication program.

This program is intended to provide better service to the public by making available the technical disclosure of certain applications in which the owner may prefer to publish an abstract in lieu of obtaining an examination by the Patent Office. The defensive publication would be in the form of an abstract of the technical disclosure, printed in the OFFICIAL GAZETTE and made a part of the Patent Office search files. The application would be open to public inspection and would continue to be a pending application for purposes of interferences for a limited period of time. This program would be open to any applicant filing a request before the designated application has received a first action by the Patent Office and agreeing to the conditions of the program, including waiving his rights to a patent and expressly abandoning his application, the abandonment to take effect five years after the earliest effective filing date of the application.

The proposed changes follow:

1. In § 1.11, delete "Patent" from the title. Identify the one paragraph now in the section as paragraph "(a)" and follow with a new paragraph "(b)," so that the section reads as follows:

§ 1.11 *Files open to the public.*

(a) After a patent has been issued, the specification, drawings, and all papers relating to the case in the file of the patent are open to inspection by the general public, and copies may be furnished upon paying the fee therefor. The file of any terminated interference involving a patent, or an application on which a patent has subsequently issued, is similarly open to public inspection and procurement of copies. See § 2.27 for trademark files.

(b) Applications in which the Office has accepted a waiver of rights to a patent filed under § 1.139 are open to inspection by the general public, and copies may be furnished upon paying the fee therefor.

2. In § 1.14, insert "Except as provided in § 1.11(b)" at the beginning of the first sentence of both paragraphs (a) and (c), delete "patent" from the first sentence of paragraph (a), so that these paragraphs read:

§ 1.14 *Patent applications preserved in secrecy.*

(a) Except as provided in § 1.11(b) pending applications are preserved in secrecy. No information will be given by the Office respecting the filing by any particular person of an application for a patent, the pendency of any particular case before it, or the subject matter of any particular application, nor will access be given to or copies furnished of any pending application or papers relating thereto, without written authority of the applicant, or his assignee or attorney or agent, unless it shall be necessary to the proper conduct of business before the Office or as provided by these rules.

(b) Except as provided in § 1.11(b) abandoned applications are likewise not open to public inspection, except that if an application referred to in a United States patent is abandoned and is available, it may be inspected or copies obtained by any person on written request, without notice to the applicant. Abandoned applications may be destroyed after twenty years from their filing date, except those to which particular attention has been called and which have been marked for preservation. Abandoned applications will not be returned.

3. In § 1.101, add "except for those applications in which the Office has accepted a waiver of rights to a patent filed under § 1.139" at the end of the last sentence of paragraph (a), so that it reads:

§ 1.101 *Order of examination.*

(a) Applications filed in the Patent Office and accepted as complete applications (§§ 1.53 and 1.55) are assigned for examination to the respective examining divisions having the classes of inventions to which the applications relate. Applications shall be taken up for examination by the examiner to whom they have been assigned in the order in which they have been filed except for those applications in which the Office has accepted a waiver of rights to a patent filed under § 1.139.

4. In §1.103, add a new paragraph (d) to read as follows:

§ 1.103 *Suspension of action.*

(d) Action on applications in which the Office has accepted a waiver of rights to a patent filed under § 1.139 will be suspended for the entire pendency of these applications except for purposes relating to proceedings under § 1.201(b).

5. In § 1.108, delete "and forfeited" in the title and the first sentence, and add "unless a waiver as in § 1.139 has been filed in and accepted by the Patent Office" at the end of the first sentence, so that it reads as follows:

§ 1.108 *Abandoned applications not cited.*

Abandoned applications as such will not be cited as references unless a waiver as in § 1.139 has been filed in and accepted by the Patent Office.

6. In paragraph (b) of § 1.201, delete "for patent" both times it appears, and insert "applications" before "for reissue" in both instances so that the paragraph reads as follows:

§ 1.201 *Definition, when declared.*

(b) An interference will be declared between pending applications, or applications for reissue, of different parties when such applications contain claims for substantially the same invention, which are allowable in the application of each party, and interferences will also be declared between pending applications, or applications for reissue, and unexpired original or reissued patents, of different parties, when such applications and patents contain claims for substantially the same invention which are allowable in all of the applications involved, in accordance with the provisions of these rules.

7. A new § 1.139 is proposed to be added, the full text of which will read as follows:

§ 1.139 *Waiver of patent rights.*

An applicant may waive his rights to a patent based on a pending application by filing in the Patent Office a written waiver of patent rights, consent to the publication of an abstract, and declaration of abandonment signed by the applicant and the assignee of record or by the attorney or agent of record.

8. A new Section 3.50 is proposed to be added to read as follows:

§ 3.50 *Disclaimer of right to patent.*

The undersigned, having on _____ filed an application for patent, Serial No. _____ entitled _____, hereby disclaims or waives his right to a patent based on said application, subject to acceptance by the Commissioner, and requests that an abstract of the disclosure thereof be published in the OFFICIAL GAZETTE, that the application be opened for public inspection upon publication of said abstract, and that the application be considered pending only for the purpose of interference; and, further, the undersigned expressly abandons said application, the abandonment to take effect five (5) years after the earliest effective filing date of the application, or upon final judgment in an interference pending at that time, or immediately, if, with reference to the application hereinabove identified or any other application for which a disclaimer of right to patent has been filed, the undersigned hereafter causes or permits the words "patent applied for," "patent pending," or any other words of similar import or meaning, to be marked upon, affixed to, or used in advertising in connection with any article.

(Sec. 1, 66 Stat. 792; 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Feb. 16, 1968.

Approved:

JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Procedure Under Proposed Defensive Publication Program

Under the program in the foregoing notice, the published abstract of an application will be treated as prior art under 35 U.S.C. 102(a) or 102(b) as a printed publication from the date of publication; and the application will be treated as prior art under 35 U.S.C. 102(a) as evidence of prior knowledge effective on the actual date of filing of the application in the Patent Office.

EDWARD J. BRENNER,
Commissioner.

Feb. 19, 1968.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JANUARY 1, 1968

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7- 1-64	6-19-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	11-27-64	7-23-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	3-30-65	5-15-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	10-30-64	7-12-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	6- 1-64	9-25-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—J. F. COUCH, Acting Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	4- 1-65	9-12-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	2- 5-65	7-30-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	6- 2-64	12-18-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	9- 1-64	3-12-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	5-12-65	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	1- 9-67	11- 8-67

Total number of pending applications (excluding Designs)	175,115
Total number of Design applications pending	3,859
Total number of applications awaiting action (excluding Designs)	124,193
Total number of Design applications awaiting action	1,697
Date of oldest new application awaiting action	June 1, 1964
Date of oldest amended application awaiting action	March 12, 1962

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during March 1968, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents ..... Numbers 2,543,744 to 2,546,957, inclusive

Plant Patents ..... Numbers 1,007 to 1,009, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	10- 3-66	11-23-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks.	4- 1-66	3-27-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	10-14-65	5-12-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	8- 1-66	4-26-65
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	6-27-66	11- 4-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	10-23-65	4-19-63

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE DAVID G. BRAITHWAITE

No. 7801. Decided June 15, 1967

[54 CCPA —; 379 F.2d 606; 154 USPQ 38]

1. PATENTABILITY—DOUBLE PATENTING—TERMINAL DISCLAIMER—OVERLAPPING CLAIMS.

"For policy reasons particularized in our opinion in No. 7800, we think that on the facts before us it is in the public interest to decide as we did in *Robeson* and *Kaye*. We therefore give effect to the terminal disclaimer to overcome the double patenting rejection as to the appealed claims [which overlap with the patent claims] and the decision of the Board is reversed."

REVERSED.

Marzall, Johnston, Cook & Root, Richard L. Johnston, Herbert B. Keil for appellant.

Joseph Schimmel (*Joseph F. Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals, adhered to on reconsideration, affirming the rejection of claims 1–3 and 16–18 of application Serial No. 94,124, filed March 8, 1961, for "Preparation of Organic Compounds of Metals." The Board reversed the rejection of claims 4–15 and they stand allowed.

This is a companion appeal to No. 7800, decided concurrently. This application, like that in No. 7800, is a continuation-in-part of application Serial No. 811,262, now Patent No. 3,007,858, granted November 7, 1961. We shall assume knowledge of our other opinion.

The invention here is directed to an electrolytic process for forming organo metallic compounds. Claims 1–3 are for process and claims 16–18 for electrolyte compositions. The claimed invention contemplates the use of a wide variety of metals as sacrificial anodes and the consequent production of a like variety of metallic compounds. Claims 1–3 refer to "metal" broadly and the supporting application disclosure is of lead, aluminum, calcium, zinc, cadmium, manganese, mercury, lanthanum, thallium, arsenic, bismuth, tellurium, and selenium.

The rejection is on the ground of double patenting in view of the claims of Patent No. 3,007,858, the following prior art references being also relied on to support that rejection:

Calingaert et al., 2,535,193, Dec. 26, 1950.

French et al., Journal of the American Chemical Society, vol. 52 (1930), pages 4904–4906.

Assignee, Nalco Chemical Company, filed a terminal disclaimer of any part of the term of a patent to be granted on this application which would extend beyond the expiration date of Patent No. 3,007,858, November 7, 1978.

Appellant relied on our decisions in *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485, and *In re Kaye*, 51 CCPA 1465, 332 F.2d 816, 141 USPQ 829, and the Board relied on *In re Siu*, 42 CCPA 864, 222 F.2d 267, 105 USPQ 428. (As to allowed claims 4–15, the

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

Board found the terminal disclaimer effective to overcome the double patenting rejection because these claims contained specific recitations either of metals or of organic radicals "not claimed in the prior patent," which we take to mean not *recited* in any claims as distinguished from not *covered* by any claims.)

The problem in this case is very like that in No. 7800 with this difference as to claims 1–3. These claims, in the Board's words, are "generic to patent claim 1," that is, at least as to the metal, they are broader in defining it as "metal" instead of naming lead. Claim 1 on appeal reads:

> 1. A process for preparing *organo metallic* compounds which comprises electrolyzing, using a *sacrificial metal anode*, a substantially anhydrous solution of a Grignard reagent in a substantially inert organic solvent for said Grignard reagent, adding extraneous organic halide to said solution, and recovering from the resultant product an *organo metallic* compound consisting of hydrocarbon radicals linked directly to *the metal* of the sacrificial anode. [Emphasis ours.]

Claim 2 adds the limitation that 0.1 to 1.5 moles of extraneous organic halide per mole of Grignard reagent is used and claim 3 further adds limitation to use of a plurality of extraneous organic halides. In appeal 7800 the broader claims were in the issued patent and here, at least as to the metal recitation, they are in the continuation-in-part on appeal. This presents a somewhat different situation but not one so different, in our view, as to call for a different result. The Board treats the two cases alike and pursued a rule which it derives from two of our earlier decisions, *In re Zickendraht*, 50 CCPA 1529, 319 F.2d 225, 138 USPQ 22 (1963), and *In re Ockert*, 44 CCPA 1024, 245 F.2d 467, 114 USPQ 330 (1957). This rule it describes as "The well established doctrine that claims in a second application must define a patentably distinct invention over the claims of an appellant's prior patent * * * regardless of the comparative scope of the claims or of the order in which the claims were presented." In neither of these cases was there any consideration of a terminal disclaimer since in neither case was one filed.[2] *Ockert* was essentially a single invention type of situation like *Siu*, and *Zickendraht* was at the very beginning of the period of our recent rethinking of the double patenting situation. In fact it was in footnote 4 of the concurring opinion of the writer therein that the suggestion was made which appears to have resulted in increasing use of the terminal disclaimer to avoid double patenting. In the present case the Board has accepted as effective such a disclaimer apparently where it has found the patent and application claims to be mutually exclusive, as illustrated by comparing patent claim 1 to making *alkyl* lead compounds with allowed application claim 4 to making *phenyl* lead compounds.[3] Alkyl, of course, does not include phenyl. The Board has drawn the line to exclude new claims which would dominate the patent claims.

Appellant's purpose in filing the instant application is clearly stated in it. Referring to the parent application for the issued patent, it says:

> In my said copending application there is broadly disclosed a process for the preparation of organic metallic compounds. However, the claims of said applica-

[2] The Solicitor adds reference to *In re Simmons*, 50 CCPA 990, 312 F.2d 821, 136 USPQ 450 (1963). That too was a case in which there was no terminal disclaimer.

[3] Patent claim 1 is in our opinion in No. 7800. Application claim 4 herein reads as follows:

> 4. A process for preparing *phenyl lead* compounds which comprises electrolyzing, using a lead anode, a substantially anhydrous solution of a Grignard reagent in a substantially inert organic solvent for said Grignard reagent, employing an electrolyzing current effective to cause said anode to dissolve in said solution of said Grignard reagent in said organic solvent, adding *extraneous phenyl halide* to said solution, and recovering from the resultant product an organic lead compound consisting of phenyl radicals linked directly to metallic lead. [Emphasis ours.]

tion are limited to the preparation of alkyl lead compounds. The purpose of the present application is to cover the process in its broader aspects and also to cover specific processes other than the manufacture of alkyl lead compounds.

Like the other continuation-in-part application in No. 7800, the applicant has supplied much additional technical disclosure relevant to what he is now claiming, disclosing the above-mentioned added metals operable in his invention and 15 new specific examples covering the use of aluminum, zinc, manganese, cadmium, and bismuth, as well as lead. Claims such as claim 1 herein, drawn broadly enough to cover the numerous metals dealt with in this application, are also broad enough to cover the alkyl lead of the patent and so dominate claims of the patent as stated.

As in No. 7800, we agree with the Patent Office that there would be double patenting and we would have to affirm were it not for the terminal disclaimer. Indeed, appellant has conceded this point in his brief with respect to claims 16 and 17. This disposes of the main argument in the Solicitor's brief.

As to the terminal disclaimer and its effect in view of our decisions in *Robeson* and *Kaye*, the Solicitor points out correctly that there are factual differences between those cases and this one in that there is overlap between the appealed claims and the patent claims. Specifically, he states that appealed claims 1, 2, and 3 are generic to patent claim 1 and that patent claim 1 would include the use of some of the electrolytes encompassed by appealed claim 18. His plea is "that the situation presented in this case is not the type to which the decision in the *Robeson* case and the *Kaye* case should be applied."

[1] For policy reasons particularized in our opinion in No. 7800, we think that on the facts before us it is in the public interest to decide as we did in *Robeson* and *Kaye*. We therefore give effect to the terminal disclaimer to overcome the double patenting rejection as to the appealed claims and the decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, and KIRKPATRICK, *J.*, did not participate.

SMITH, *J.*, concurring.

I concur in the result reached by the majority for the reasons stated in my concurring opinion in PA 7800, *In re Braithwaite*, decided concurrently herewith.

U.S. Court of Customs and Patent Appeals

IN RE CARL-LUDWIG NOTTEBOHM AND ROBERT SCHABERT

No. 7802. Decided June 15, 1967

[54 CCPA—; 378 F.2d 964; 154 USPQ 41]

1. PATENTABILITY—OBVIOUSNESS—LAMINATED PRODUCT.

"Schramm discloses a laminated and moisture-permeable collar stock made by laminating two sheets of textile fabrics together, using as the binder therebetween a thermoplastic vinyl plastic. This is basically the type of products appellants are claiming. True, appellants use a particular sheeting material and a particular thermoplastic resin not shown in Schramm. However, these particular materials are clearly disclosed in the secondary references. In view of the fact that all three references are directed to the art of making a collar stock and the fact that the specific materials disclosed in the secondary references are employed for substantially the same purposes as those of the corresponding materials in Schramm, we find no error in the manner in which these references are combined. In this regard we note that though Evans prefers to use a film of polyethylene as the binding material, the patent does

disclose the coating of a fabric surface by spraying or brushing an aqueous suspension or emulsion of polyethylene which, as the Examiner has suggested, may result in a particulate deposit. In any event, Evans was not specifically concerned with a moisture and air-permeable product whereas Schramm is specifically directed to the manufacture of such a product. We are of the opinion that, given the need for such a permeable product, it would be obvious to modify the layer of bonding material of Evans to that shown by Schramm."

2. SAME—CRITICALLY—ROUTINE EXPERIMENTAL DETERMINATION.

"We are also not persuaded by the affidavit of Schabert ['in an attempt to show the criticality of the molecular weight and amount of the claimed polyethylene particles']. Appellants' claimed range of molecular weight is inclusive of one specific number disclosed in Evans. As to the amount of the binder resin to be used, we find the appellants' claimed range to be obvious within the meaning of 35 U.S.C. 103. Once the desired objective or producing a moisture and air-permeable collar stock is stated, the amount of polyethylene binder to be used in such a product seems to us to be susceptible to routine experimental determination, absent some unforeseeable difficulty."

3. SAME—OBVIOUSNESS.

"Appellants contend that the method of Schramm, when carried out with the polyethylene particles would cause a binder deposit of about 80 grams per square yard, thus resulting in a product which is too stiff and unsuitable. We note, however, that there is no claim that appellants' method of depositing the polyethylene particles is unique or unobvious, and that the claims are not directed to the method of such deposition. There is no showing that once the optimum amount of polyethylene to be used has been determined, that amount cannot be deposited onto the sheet materials by an obvious method."

4. SAME—PARTICULAR SUBJECT MATTER—"PRODUCTION OF NON-WOVEN FABRICS SUITABLE FOR USE IN STIFFENING GARMENTS."

The refusal of certain claims in an application entitled "Production of Non-Woven Fabrics Suitable for Use in Stiffening Garments," as unpatentable over the prior art, is affirmed.

AFFIRMED.

Burgess, Dinklage & Sprung, Arnold Sprung, Michael G. Gilman for appellants.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

Appellants appeal from a decision of the Board of Appeals affirming the final rejection of claims 2–4 of their application.[2] No claim has been allowed.

The appealed claims were treated by both parties as a group and they stand or fall together. Claim 2 is illustrative and reads:

2. A non-woven fabric interlining material capable of being permanently attached to a fabric by heat pressing consisting of an open skeleton of polyposed fibers bonded together predominantly at their crossing points with a bonding agent and having at least one free surface thereof uniformly spot-wise coated with exposed discrete polyethylene particles of a molecular weight between about 5,000 and 70,000 in an amount of about 5 to 50 grams per square yard, said fibres predominantly having a higher melting point than said polyethylene.

Claim 3 is similar to claim 2 but calls for fused thermoplastic fibers as the bonding agent. Claim 4 is directed to a method for attaching a non-woven interlining to a second fabric by sandwiching polyethylene particles between the interlining and the fabric and then hot-pressing the assembly together.

The invention relates to a non-woven interliner, useful as a stiffening material for shirt collars and cuffs, which can be combined with

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 28,878, filed May 13, 1960, for "Production of Non-Woven Fabrics Suitable for Use in Stiffening Garments."

a second fabric by simply hot-pressing the interliner onto the fabric. The interliner is made by sprinkling comminuted polyethylene particles, in an amount between 0.5 and 50 grams per square yard of fabric, onto a non-woven fabric and then heating the combination to adhere the particles to the non-woven fabric. It appears from the application that 5 to 50 grams of polyethylene per square yard are preferred for making strong and permanent interliners but that 0.5 to 5 grams of polyethylene per square yard are suitable for making a temporarily fusible interliner which is useful in certain tailoring operations.

The question is whether the claimed subject matter was properly rejected under 35 U.S.C. 103 as obvious in view of the following prior art:

Evans et al. [Evans], 2,237,344, Apr. 8, 1941.
Schramm, 2,603,575, July 15, 1952.
Nottebohm, 2,719,806, Oct. 4, 1955.

Evans discloses a semistiff collar which is made from a laminated fabric consisting of two layers, at least one of which may be a matted fabric such as paper or felt. They are bonded together by polyethylene having a molecular weight of at least 6000. Although Evans apparently prefers to employ a continuous film of polyethylene for his purposes, the patent states that the polyethylene may be applied to the surface of one of the layers in the form of an aqueous suspension or emulsion by any convenient means such as spraying or brushing.

Schramm teaches a method of making a stiffened and permeable resin-coated laminated fibrous sheet which is useful in the making of a collar stock. The laminated fibrous sheets may be made by coating a textile fabric or a fibrous sheet material, such as paper or felt, with discrete particles of a thermoplastic material, such as the vinyl resins, and laminating the coated sheet with another sheet. The product of Schramm is stated to be permeable to air and moisture.

Nottebohm discloses a process for the manufacture of a porous and air-permeable sheet material which may be used in the manufacture of shirt collars and other garments. The sheet of Nottebohm is made of polyposed fibers impregnated with binder particles which cement the fibers together at their crossing points. The impregnated sheet can be adhered to fabrics by hot ironing and it constitutes a suitable stiffening material for shirt collars. This reference was cited to show the non-woven fabric in the claims on appeal.

The Examiner rejected all the claims as "unpatentable over" [3] Schramm in view of Evans and Nottebohm. He considered that Schramm fails as a "complete anticipation" only in that the reference does not specify the particular non-woven fabric and the thermoplastic particles claimed. However, the Examiner regarded it to be an obvious expedient to use the non-woven fabric of Nottebohm in place of the felt of Schramm and to substitute the thermoplastic material of Evans, polyethylene, for the thermoplastic vinyl resins of Schramm. The Examiner additionally rejected all of the claims as "unpatentable over" Evans in view of Nottebohm. In this respect, the Examiner considered it to be obvious to use the particular non-woven fabric of Nottebohm for the felt of Evans.

The Board sustained the Examiner's rejections and found the

[3] There is no question in the present case that the rejection is one of obviousness within the meaning of 35 U.S.C. 103.

claimed range of 5 to 50 grams per square yard deposition rate not to be disclosed as critical.

During the proceedings below, Dr. Robert Schabert, one of the appellants herein, submitted an affidavit in an attempt to show the criticality of the molecular weight and amount of the claimed polyethylene particles. It appears from the affidavit that polyethylene having a molecular weight higher or lower than the range recited in the appealed claims is unsuitable for the present purpose. Additionally, the affidavit shows that (1) the adhesiveness between the non-woven fabric and the second fabric is very poor when only 3 grams of polyethylene are used per square yard of fabric, and (2) the breathing properties and stiffness of the fabric are poor when more than 50 grams of polyethylene are used per square yard of fabric.

The Examiner and the Board found the affidavit unconvincing. As to the molecular weight of the polyethylene, the Examiner and the Board pointed out that the polyethylene of Evans is specified to have a molecular weight of at least 6000 and even if Evans is restricted to the only specific molecular weight recited, the appellants' range of 5,000 to 70,000 represents no departure therefrom. As to the amount of polyethylene used, the Examiner noted that the claimed range defines the limits of suitable adherence and permeability for a particular product and that this is a matter of choice. The Board's position on the alleged criticality of the amount of polyethylene is that this factor was not disclosed as critical nor shown to be "universally critical to base fabrics of any and every thickness."

After a careful consideration of the record, we are of the view that the Board's conclusion as to obviousness is supported by the facts of record and therefore it must be affirmed.

[1] Schramm discloses a laminated and moisture-permeable collar stock made by laminating two sheets of textile fabrics together, using as the binder thereinbetween a thermoplastic vinyl plastic. This is basically the type of products appellants are claiming. True, appellants use a particular sheeting material and a particular thermoplastic resin not shown in Schramm. However, these particular materials are clearly disclosed in the secondary references. In view of the fact that all three references are directed to the art of making a collar stock and the fact that the specific materials disclosed in the secondary references are employed for substantially the same purposes as those of the corresponding materials in Schramm, we find no error in the manner in which these references are combined. In this regard we note that though Evans prefers to use a film of polyethylene as the binding material, the patent does disclose the coating of a fabric surface by spraying or brushing an aqueous suspension or emulsion of polyethylene which, as the Examiner has suggested, may result in a particulate deposit. In any event, Evans was not specifically concerned with a moisture and air-permeable product whereas Schramm is specifically directed to the manufacture of such a product. We are of the opinion that, given the need for such a permeable product, it would be obvious to modify the layer of bonding material of Evans to that shown by Schramm.

[2] We are also not persuaded by the affidavit of Schabert. Appellants' claimed range of molecular weight is inclusive of one specific number disclosed in Evans. As to the amount of the binder resin to be used, we find the appellants' claimed range to be obvious within the meaning of 35 U.S.C. 103. Once the desired objective or producing

a moisture and air-permeable collar stock is stated, the amount of polyethylene binder to be used in such a product seems to us to be susceptible to routine experimental determination, absent some unforeseeable difficulty.

[3] Appellants contend that the method of Schramm, when carried out with the polyethylene particles would cause a binder deposit of about 80 grams per square yard, thus resulting in a product which is too stiff and unsuitable. We note, however, that there is no claim that appellants' method of depositing the polyethylene particles is unique or unobvious, and that the claims are not directed to the method of such deposition. There is no showing that once the optimum amount of polyethylene to be used has been determined, that amount cannot be deposited onto the sheet materials by an obvious method.

[4] The decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,626,841, L. R. Potter, SELF-ALIGNING BEARING; **2,724,172,** same, METHOD OF FORMING A SELF-ALIGNING BEARING, **filed** Dec. 4, 1967, D.C. Conn. (New Haven), Doc. 12283, *Southwest Products Company* v. *The Heim Universal Corporation.*

2,646,040, A. N. Stanton, BANDAGE; **2,875,758,** Fuzak and Boles, FINGERTIP BANDAGE, **filed** Oct. 7, 1963, D.C., W.D.N.Y. (Buffalo), Doc. C–10521, *George T. Fuzak and United States Plastic Bandage Co.* v. *Gramercy Supply Co., Inc.* Order of court dismissing action for want of prosecution, Nov. 17, 1967.

2,670,665, S. H. Caldwell, OPTICAL SYSTEM FOR PHOTOGRAPHIC COMPOSING APPARATUS; **3,332,617,** Higonnet and Moyroud, TYPE COMPOSING APPARATUS; **Re. 25,344,** Rosseta, Squassoni, Coleman and Corrill, PHOTOCOMPOSING MACHINE, **filed** Sept. 22, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1627, *Photon, Inc.* v. *Eltra Corporation and Logan Square Typographers, Inc.*

2,695,190, E. Meierjohan, ARTICLE TRANSFERRING APPARATUS; **2,873,996,** C. J. McHugh, Jr., LIFTING CUP FOR ARTICLE TRANSFERRING APPARATUS, **filed** Nov. 15, 1967, D.C., S.D. Tex. (Houston), Doc. 67–H–869, *The Lodge & Shipley Company* v. *Holstein & Kappart G.m.b.H. and Wolfgang Backhaus.*

2,713,683, L. L. Krieger, BRASSIERES, **filed** Aug. 20, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–865, *International Latex Corp.* v. *Lady Suzanne Foundations, Inc.* Consent judgment for injunction filed, Nov. 30, 1967.

2,724,172. (See 2,626,841.)

2,734,479, E. O. Norris, CENTRIFUGAL SPRAYING COATING APPARATUS; **2,848,353,** same, METHOD AND APPARATUS FOR SPRAYING ARTICLES INCLUDING SEPARATION AND RECIRCULATION OF COATING MATERIAL, **filed** May 26, 1964, D.C. Del. (Wilmington), Doc. 2852, *The Gyromat Corporation* v. *Ekco Products Company.* Consent judgment; defendant permanently and perpetually enjoined and restrained from infringement or contributory infringement, Nov. 28, 1967.

2,740,739, Harwin, Stern and Bodle, CARPET UNDERLAY, **filed** Feb. 4, 1965, D.C.N.J. (Trenton), Doc. C106–65, *Allen Industries, Inc.* v. *National Sponge Cushion Co., Inc.* Judgment setting aside verdict of jury declaring claims 1, 2, 3 and 4 of the patent invalid, dismissing defendant's counterclaim; judgment for plaintiffs declaring the patent invalid and not infringed, Nov. 29, 1967.

2,753,894, Trow and Nelson, ICE DISINTEGRATING AND CHIP DELIVERING SPIRAL ICE CHIP PRODUCING MACHINE, **filed** Oct. 31, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1894, *King-Seeley Thermos Co.* v. *Jefferson Ice Co.*

2,848,353. (See 2,734,479.)

2,865,635, L. A. Jessen, GOLF INSTRUCTION DEVICE, **filed** May 3, 1965, D.C.N.J. (Newark), Doc. 454–65, *Patrician Plastic Corp.* v. *Synthetic Plastics Company, Inc. and Kusen Industries, Inc.* Stipulation of dismissal, Nov. 29, 1967.

2,873,996. (See 2,695,190.)

2,875,758. (See 2,646,040.)

2,895,450, A. P. Hope, SYSTEM FOR MOVING LIQUIDS, **filed** Nov. 24, 1967, D.C., E.D. Wis. (Milwaukee), Doc. 67–C–394, *Werner Machinery Company* v. *National Cooperatives, Inc.*

2,917,790, V. F. Espenschied, PRE-ASSEMBLED DOOR AND CASING, **filed** Dec. 4, 1967, D.C., N.D.N.Y. (Utica), Doc. 67–CV–372, *The F. E. Schumacher Company* v. *Kasson & Keller, Inc.*

2,956,114, Ginsburg, Henderson, Dolby and Anderson, BROAD BAND MAGNETIC TAPE SYSTEM AND METHOD; **3,159,501,** A. R. Maxey, MAGNETIC TAPE APPARATUS, **filed** Nov. 21, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2023, *Ampex Corporation* v. *Matsushita Electric Corporation of America.*

3,075,317, S. Craft, SOUND PRODUCING DEVICES, **filed** Sept. 23, 1965, D.C., S.D.N.Y., Doc. 65–C–2877, *I.T.C. Co., Inc.* v. *Frey-Lieb Co., Inc.* Order dismissing action for lack of prosecution, Nov. 28, 1967.

3,159,501. (See 2,956,114.)

3,190,320, Burgess and Riley, RESIN TRANSFER PLANT; **3,334,745,** same, DEMINERALIZER SERVICE UNIT WITH ENCAPSULATED LIGHT CIRCUIT, **filed** Dec. 5, 1967, D.C., M.D.N.C. (Greensboro), Doc. C–233–D–67, *Continental Water Conditioning Corporation* v. *R & D Suppliers, Inc. et al.*

3,314,386, A. F. Kopaska, MINIMUM TILLAGE IMPLEMENT, **filed** Dec. 5, 1967, D.C., S.D. Iowa (Des Moines), Doc. 3–756–W, *Midwest Industries, Inc. and McCune and Company* v. *Emmert Manufacturing Company, Inc. and Arnold F. Kopaska.*

3,332,617. (See 2,670,665.)

3,334,745. (See 3,190,320.)

3,340,521, Patterson, Quinn and Quinn, ALARM SYSTEM, **filed** Nov. 30, 1967, D.C., S.D. Tex. (Houston), Doc. CA–67–H–908, *"Automatic" Sprinkler Corporation of America* v. *Telelarm, Inc. et al.*

Re. 25,354. (See 2,670,665.)

REISSUES

MARCH 5, 1968

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

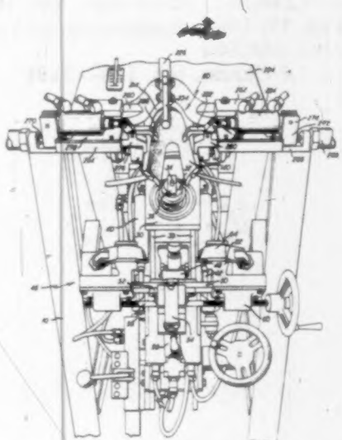
26,355

LASTING MACHINE HAVING COOLED CLAMP

Jacob Simon Kamborian, 70 Crestwood Road, West Newton, Mass. 02165, and Michael M. Becka, Cambridge, and Robert B. Dunlap, Medway, Mass.; said Becka and said Dunlap assignors to said Kamborian

Original No. 3,228,046, dated Jan. 11, 1966, Ser. No. 262,874, Mar. 5, 1963. Application for reissue Aug. 4, 1966, Ser. No. 607,334

22 Claims. (Cl. 12—10.5)



1. In a lasting machine having means for supporting a last having an insole on its bottom and an upper mounted thereon with a stiffener interposed between a portion of the upper and the last, said stiffener being stiff and rigid at ambient temperatures, becoming flaccid and moldable when heated a predetermined amount above ambient tempertures and reverting to its stiff and rigid state when cooled back to ambient temperatures; clamping means actuable to clamp the said portion of the upper against the last; and means for wiping the margin of said portion of the upper against the insole, the improvement comprising: means for causing said clamping means to be cooled below ambient temperatures *while said clamping means is in clamping engagement with said portion of upper* to thereby cool the stiffener and decrease the time for the stiffener to revert to its stiff and rigid state.

26,356

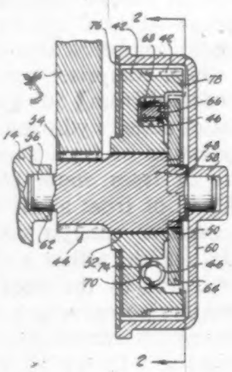
WINDOW LIFT GEAR

Joseph Pickles, Bloomfield Hills, Mich., assignor to Ferro Stamping Company, Detroit, Mich., a corporation of Michigan

Original No. 3,208,298, dated Sept. 28, 1965, Ser. No. 240,275, Nov. 27, 1962. Application for reissue July 12, 1967, Ser. No. 661,144

9 Claims. (Cl. 74—411)

7. A yieldable coupling comprising a worm gear having a recess in one side thereof, a pinion member positioned within and extending out of the worm gear, and resilient means within said recess operable between the worm gear and pinion member for transmitting torque therebetween.



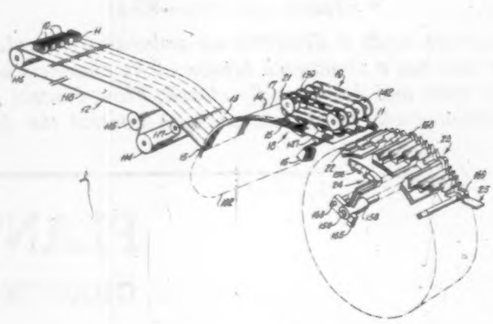
26,357

METERING APPARATUS

Arthur J. Griner, Wyckoff, and Robert J. Albrecht, River Edge, N.J., assignors to National Biscuit Company, a corporation of New Jersey

Original No. 3,086,334, dated Apr. 23, 1963, Ser. No. 68,928, Nov. 14, 1960. Application for reissue Feb. 26, 1964, Ser. No. 377,147

41 Claims. (Cl. 53—26)



Method and apparatus for automatically handling articles, such as fig bars and similar baked goods, wherein the lead articles are stripped one at a time from each of a plurality of columns or stacks in rotation, formed into rows of spaced articles in staggered relation, and then consolidated into a single column of articles on a rotating drum. The resulting column is successively stripped from the drum with the articles in stacked-on-edge, close-column relation, mechanically metered into spaced groups of equal numbers of articles, and conveyed to continuous packaging apparatus.

26,358

SINGLE-STAGE HYDROCRACKING PROCESS WITH A NITROGEN CONTAINING FEED STOCK

Robert J. White, Pinole, Calif., assignor to Chevron Research Company, a corporation of Delaware

Original No. 3,248,318, dated Apr. 26, 1966, Ser. No. 294,374, July 11, 1963. Application for reissue July 1, 1966, Ser. No. 569,765

11 Claims. (Cl. 208—111)

1. A process for the single-stage denitrification and hydrocracking of hydrocarbon feedstocks containing more than about 550 p.p.m. of nitrogen and boiling in the range from about 400° to about 1400° F. to produce at least one product fraction boiling below the initial boiling point of said feedstock, which comprises contacting said feedstock, along with *at least* [from] 500 [to 2000] standard cubic feet per barrel of added hydrogen, in a hydrocracking zone at a temperature of from about 650° to about 950° F., a pressure of from about 800 to about 3000 p.s.i.g. and an L.H.S.V. of from about 0.1 to about 10.0 with a nitrogen-insensitive catalyst comprising at least one Group VI metal sulfide within a silica-alumina gel, said catalyst manufactured by the steps comprising:

(a) forming a mixture comprising a silica sol, at least one soluble aluminum compound, and at least one soluble compound of a Group VI metal;

(b) reacting said mixture formed in step (a) with a quantity of an epoxy compound sufficient to convert said mixture into a hydrogel;

(c) dehydrating said hydrogel to produce a gel comprising silica, alumina and at least one Group VI metal oxide; and

(d) converting said Group VI metal to its corresponding sulfide by contact with a sulfur-containing fluid.

26,359

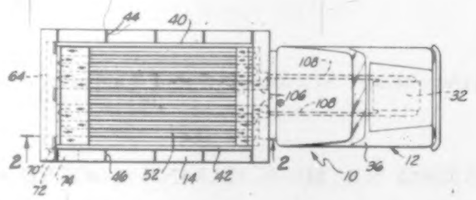
TRUCK UNLOADING STRUCTURE

Fred Thompson, 1402 N. Linwood, Santa Ana, Calif. 92701

Original No. 3,272,358, dated Sept. 13, 1966, Ser. No. 355,612, Mar. 30, 1964. Application for reissue Jan. 25, 1967, Ser. No. 617,431

9 Claims. (Cl. 214—83.2)

The truck body is designed for unloading granular materials and has a channeled bottom. The channels are upwardly open and downwardly closed. Flow control means is positioned above the channels to control the flow of granular material into the channels. A flexible conveyor unit is positioned in each channel so that upon motion of



the conveyor units, the granular material is discharged from the truck body.

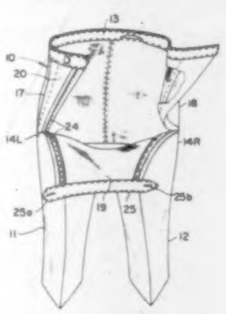
26,360

WEARING APPAREL WITH BODY-CONFORMING INNER PANEL

Ralph R. Pagano, 118 87th St., Brooklyn, N.Y. 11209

Original No. 3,246,342, dated Apr. 19, 1966, Ser. No. 345,979, Feb. 19, 1964. Application for reissue Dec. 22, 1966, Ser. No. 606,504

4 Claims. (Cl. 128—519)



A wearing apparel is disclosed having a body portion in the region of the waistline to just below the hips comprising a front panel and a rear panel with seams connecting the front and rear panels together along the sides thereof extending from the waistline to below the hips. The front panel has an inner front panel of elasticized material extending across the back thereof, said inner front panel of elasticized material extending from the waistline to just below the hips and being sewn along its sides under transverse tension to the back of the front panel. An inner rear panel of elasticized material extends across the back of the rear panel, the rear panel also extending from the waistline to just below the hips and being sewn while under transverse tension to the back of the rear panel and down along the sides thereof.

PLANT PATENTS

GRANTED MARCH 5, 1968

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,797

PEACH TREE

Charles Preuss, 8690 N. Minnewawa, Clovis, Calif. 93612

Filed Nov. 21, 1966, Ser. No. 596,022

1 Claim. (Cl. Plt.—43)

1. A new and distinct variety of peach tree substantially as illustrated and described and which is characterized by its vigorous growth and its regular and heavy bearing of freestone, darkly red skinned, firm textured, yellow-fleshed peaches which ripen about ten days earlier than the fruit of the Fay Elberta (unpatented) peach tree, about ten days later than the fruit of its parent Suncrest (unpatented) peach tree, and at about the same time as the fruit of the Merrill 49er (unpatented) peach tree from which varieties of peach trees the instant variety distinguishes in its relatively larger, generally more uniformly round fruit having a smoother distinctive darkly red lined suture with its skin being more darkly red colored and distributed over a larger portion of the skin and which contains a stone having a pointed tip transversely offset from its longitudinal axis.

2,798

CAMELLIA PLANT

James Howard Asper, Escondido, Calif., assignor to Select Camellias, Inc., Whittier, Calif., a corporation of California

Filed Sept. 8, 1966, Ser. No. 578,106
1 Claim. (Cl. Plt.—62)

1. A new and distinct variety of camellia plant substantially as herein shown and described, characterized particularly as to novelty by its large semi-double type blooms that are predominantly Blood Red in color shading to Cardinal Red and having a pronounced fluorescence, by its orbiculate petals with the apex retuse, by its substantially black stamens when these are mature, by its large, very dark green leaves that are heavy, thick and waxy and have serrated margins, and by its vigorous, upright spreading growth habit.

2,799

ROSE PLANT

Gijsbert de Ruiter, Hazerwoude, Netherlands, assignor to Carlton Rose Nurseries, Inc., Carlton, Oreg., a corporation of Oregon

Filed July 21, 1966, Ser. No. 567,036
1 Claim. (Cl. Plt.—22)

1. A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of attractive shiny and glossy foliage, strong and upright flower stems, with little or no "Blind" wood, a distinctive and attractive general color tonality of the flowers corresponding to burnt orange and gold in the opening stage, changing to pink as the flowers fully open and mature, very long keeping qualities of the flowers both on the bush and as cut flowers; and good shipping qualities.

PATENTS

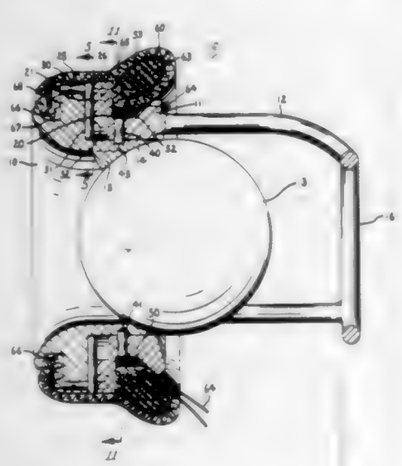
GRANTED MARCH 5, 1968

GENERAL AND MECHANICAL

3,371,351
BELT FOR TROUSERS
Maurice Allain, 11 Blain St., Acushnet, Mass. 02743
Filed Jan. 18, 1967, Ser. No. 610,078
4 Claims. (Cl. 2—338)

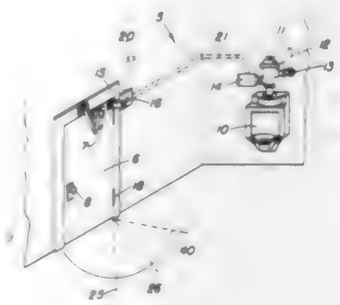
A belt comprising two sections with a rope of substantial length connecting the ends of the two sections around the back of the body to provide a storage for an extended length of rope which may be detached for some additional usage. The two sections are detachably connected in the front in any conventional manner.

3,371,352
HEART VALVE FOR QUICK IMPLANTATION HAVING PROVISION FOR INGROWTH OF TISSUE
George G. Siposs, Garden Grove, Donald A. Raible, Corona, and Donald J. Bentley, Newport Beach, Calif., Albert Starr, Portland, Oreg., and Miles Lowell Edwards, Santa Ana, Calif., assignors to Edwards Laboratories, Inc., Santa Ana, Calif., a corporation of California
Filed Jan. 19, 1965, Ser. No. 426,613
18 Claims. (Cl. 3—1)



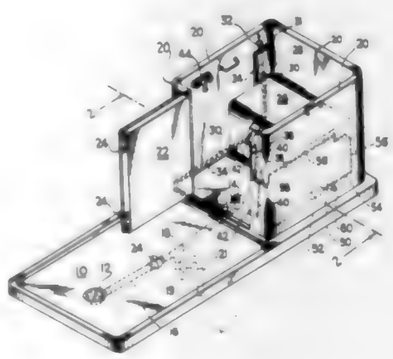
A heart valve having needle fixation in combination with an upholstered suturable cuff. The needles are pivotally mounted to swing in a common radial plane and have arcuately curved shanks concentric with their pivotal axes to avoid a sweeping motion as they penetrate the patient's tissue. The needles are projected by an epicycloidal cam on a rotatable ring in the valve.

3,371,353
DOOR CONTROLLED AUTOMATIC FLUSHING SYSTEM
Jacques J. Filliung, Chicago, Ill., assignor to Sloan Valve Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 13, 1965, Ser. No. 495,444
5 Claims. (Cl. 4—99)



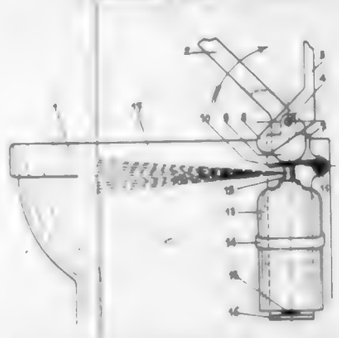
A flushing arrangement for urinals in which the flush valve is automatically operated by a door switch only when a person exits from the toilet room after having used the urinal. Toilet room doors are opened up much wider when a person goes out of the room than when he enters it.

3,371,354
WALK-IN BATHTUB
Vetra M. Hayslett, 315 E. Union, Walbridge, Ohio 43465
Filed Mar. 25, 1966, Ser. No. 537,465
5 Claims. (Cl. 4—173)



1. A bathtub comprising a horizontal base having a drain opening having means mounted therein for opening and closing same, four vertical walls interconnected to each other and extending upward from the base to define a bathing chamber open at the top, said walls in cross section defining the closed perimeter of a rectangle, said chamber having a horizontal seat therein, a manually operable pull member secured to the interior of one wall and accessible both from inside and outside said chamber, and a linkage connecting said member to said means whereby manual operation of said member can open and close said drain opening.

3,371,355
HINGED AEROSOL ACTUATOR ELEMENTS FOR SANITARY FLUSH BOWL
Edouard L. Wipf, Geneva, Switzerland, assignor to Anstalt für Patentankauf, Vaduz, Liechtenstein
Filed Oct. 7, 1964, Ser. No. 402,361
Claims priority, application France, Dec. 12, 1963, 956,976
6 Claims. (Cl. 4—222)



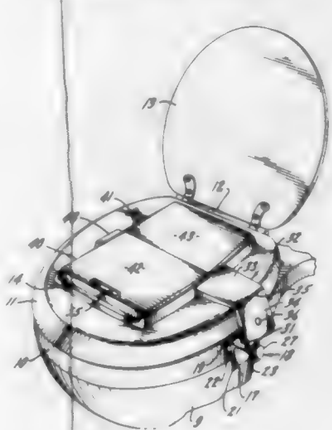
1. In a sanitary installation including a flush-bowl, a seat and a cover over said seat, means hingedly connecting said seat and cover to said flush-bowl for pivotal movement about a common axis from closed position where said seat and cover lie over said flush-bowl to open position where they stand generally upright, the improvement in the combination comprising:

(a) a pressurized container having a nozzle-plug normally biased to inoperative position, said nozzle-plug depressible along the axis of said container to operative position thereof;

(b) a cam member on each of said seat and cover adjacent said hinged ends and offset from said common axis to be displaced about said axis when either of said seat and cover is pivoted, and

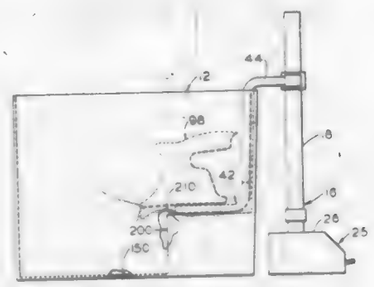
(c) means operable by either of said cams to actuate said nozzle-plug of the container in a rectilinear motion causing operation thereof only when either of said seat and cover stands about mid-way between said closed and open position and vice versa.

3,371,356
CHILD'S TOILET SEAT ASSEMBLY
E. Burton Benjamin, Highland Park, Ill., assignor, by mesne assignments, to Loma Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 24, 1965, Ser. No. 457,944
5 Claims. (Cl. 4—239)



The instant article of manufacture is a compactly foldable child's toilet seat which is demountably clamped to the rim of a conventional toilet bowl. In usage the child's toilet seat rests on the seat of the conventional toilet bowl. When not in use, the child's toilet seat can be swung as an inconspicuous, slim rectangular package, into a hanging position by the side of the toilet bowl; alternatively it can be quickly unclamped for storage out of sight.

3,371,357
BATH LIFT
Calvin R. Berthelsen and Owen W. Berthelsen, Lincoln, Nebr., assignors to Century Mfg. Co., a corporation of Nebraska
Filed May 10, 1965, Ser. No. 454,540
3 Claims. (Cl. 5—83)



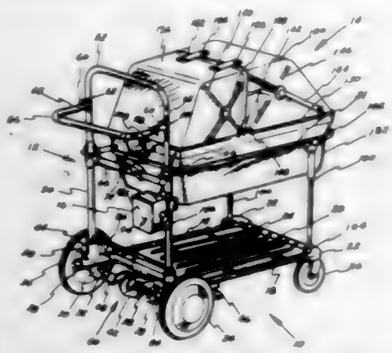
1. A bath lift having a vertically extending elongated hydraulic cylinder means, means for anchoring the base of said hydraulic cylinder to a supporting surface, a motorized pump assembly, means hydraulically operably interconnecting said pump assembly and said hydraulic cylinder means, lift arm means attached to said hydraulic cylinder means so as to be movable thereby upwardly and downwardly, said lift arm means having a first portion extending laterally from said hydraulic cylinder means and having a second portion connected to said first portion and extending downwardly therefrom, a seat, means mounting said seat on the lower end of said lift arm means comprising mutually engageable and releasable interlocking means having first portions mounted on said lift arm means and having second portions, a lift frame, the second interlocking means being connected to said lift frame, said lift frame having a portion extending beneath said seat, and means attaching said seat rotatably to said lift frame for the rotation of said seat on said lift frame about a vertical axis, said seat rotatable attaching means being separate and distinct from said mutually engageable and releasable interlocking means for independent action so that said mutually interlocking means can be engaged and released without interfering with said rotating means, whereby at times when said interlocking means are interlocked said lift frame and seat can be lifted by said lift arms, and whereby at times when said mutually interlocking portions are not interlocked, said seat and its lift frame are disposed free of said lift arms and are adapted to be supported by other means.

3,371,358
ROCKING CRADLE
Joseph T. Shackel, 14636 Bringard, Detroit, Mich. 48215
Filed Feb. 3, 1967, Ser. No. 613,906
8 Claims. (Cl. 5—108)

A crib unit supported on a wheel bearing chassis for self-rocking movement relative to the chassis. A motor provides a source of motion to the crib unit through a semi-rigid link. The link provides a motion transmitting connection from the motor to the crib when the crib is in a balanced condition. However, the link in response to a predetermined force opposing the motion of the crib about its axis, assumes a non-rigid connection between the motor and the crib.

The crib unit is mounted at a selectively variable height to the chassis by a horizontal tubular support mem-

ber having a pair of locking elements interengageable in sockets provided in a pair of upright supports. A lever

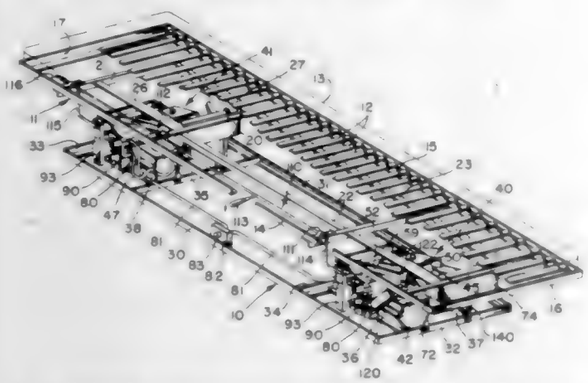


member is operable to actuate the locking elements into a disengaged position with respect to their sockets upon the release of a safety latch.

ERRATUM

For Class 5—83 see:
Patent No. 3,371,357

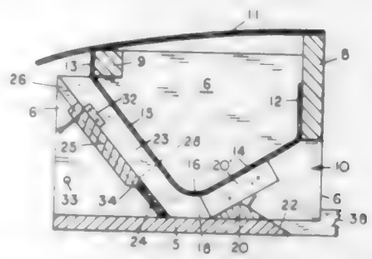
3,371,359
MATTRESS SUSPENSION SYSTEM
Edwin C. Dome, Lucas, Ohio, assignor to Artnell Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 22, 1966, Ser. No. 581,324
9 Claims. (Cl. 5—118)



1. A mattress suspension system and the like comprising a lower frame, an upper frame adapted to receive and support a mattress or the like, at least two fluid suspension units operatively connected between said lower and upper frames for vertically controlling the position of the latter relative to the former, each of said fluid suspension units including an air spring, valve means carried by said lower frame for each suspension unit controlling the fluid pressure within said air springs, and single control means accessible to a person reclining on said mattress for actuating said valve means simultaneously to automatically vertically adjust said upper frame depending upon the weight of the person thereby to provide controlled, level movement of said upper frame relative to said lower frame.

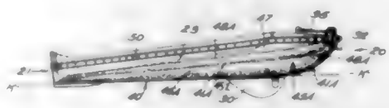
3,371,360
BEEHIVE EXIT DEVICE
Lucille S. Antles, P.O. Box 1243, Wenatchee, Wash. 98801, and Wallace Eugene Parsons, Wenatchee, Wash.; said Parsons assignor to said Antles
Filed Mar. 4, 1966, Ser. No. 531,993
3 Claims. (Cl. 6—4)

1. A beehive exit device for use in improving pollination of plant blossoms comprising a bottom, end walls, a rear wall and a front cross bar defining an exit enclosure, said rear wall being of less width than the end walls to provide an opening adpated to register with the bee inlet and outlet opening of a beehive, a longitudinally extending pollen chamber on the bottom of said exit enclosure, a narrow inclined bee exit passageway extending upwardly and outwardly from said pollen chamber, said passageway being formed by a pair of spaced apart parallel upwardly inclined walls extending from said pollen chamber, the lowermost wall of said passageway forming a bee exit floor, a portion of said bee exit floor



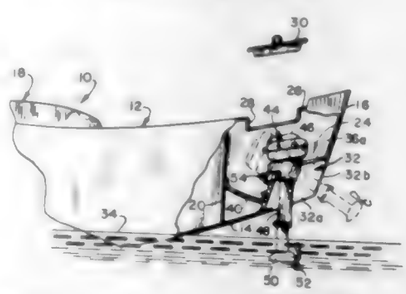
adjacent the pollen chamber being a narrow strip of light conductive material, the remaining portion of said bee exit floor forming a pivotally supported ramp means, the axis of which is adjacent and parallel to the upper edge of said light conductive strip, stop means on at least one of said end walls to limit the upward movement of said ramp and readily releasable means adapted to support said ramp in substantially the same plane as the light conductive strip whereby said ramp can be lowered into a position which affords ready access to the pollen chamber for the introduction of pollen therein.

3,371,361
WATERCRAFT
Walter Andersen, Ottawa, Ill., assignor of one-fifth to W. Russell Bone and one-fifth to John W. Fisher, both of Muncie, Ind.
Filed Oct. 22, 1965, Ser. No. 500,603
9 Claims. (Cl. 9—6)



A watercraft suited for towing is provided with a hull having a bottom fore-an-aft cavity flanked by two coextensive bilges which also run the length of the craft. There is located within the fore-and-aft cavity steering means including a rudder, said rudder being located forward of amidship and aft of the bow.

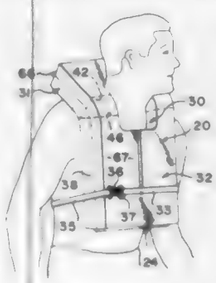
3,371,362
ADJUSTABLE OUTBOARD WELL
Frank W. Butler, 10354 Vanalden, Northridge, Calif. 91324
Filed Jan. 24, 1966, Ser. No. 522,616
4 Claims. (Cl. 9—6)



The adjustable outboard well has upright wall means defining a motor wall opening through the bottom wall of the hull and the transom. A bulkhead extends

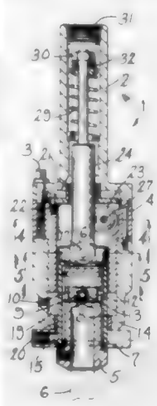
across the compartment forwardly of the motor well and a floor extends between the bulkhead and the wall means of the motor well for collection of water. The floor is above the bottom wall of the hull and slopes toward a drain outlet just above the floor.

3,371,363
LIFE VEST AND METHOD OF MAKING SAME
Joseph H. Le Blanc, Jr., New Orleans, La., assignor, by mesne assignments, to Tapatco, Inc., Fairfield, Calif., a corporation of Nevada
Filed Aug. 11, 1965, Ser. No. 478,904
31 Claims. (Cl. 9—333)



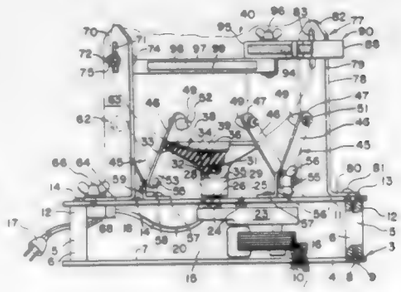
This disclosure relates to life vests and the method of making a life vest by providing a sheet of buoyant material which is of predetermined size and configuration, and cutting that sheet of buoyant material into desired material portions, which portions comprise life vest components, with none of the buoyant material being wasted. The buoyant material portions have been arranged to provide a vest chest portion and a vest neck portion, with a head opening therebetween. The opening may be of keyhole configuration, and may terminate short of the bottom of the vest. The vest is then covered with a suitable covering material which provides a hinging effect at junctures of the various portions of buoyant material.

3,371,364
TOOL HOLDER
Lloyd D. Johnson, Portland, Conn., assignor to Telco Corporation, Hartford, Conn., a corporation of Connecticut
Filed Oct. 11, 1965, Ser. No. 494,650
4 Claims. (Cl. 10—129)



This invention relates to a tapping or threading tool holder for use on a turret lathe or other machine tool, having a rotating head or chuck by which the workpiece may be rotated in either direction. In particular, this invention is directed to a tool holder comprising in combination a housing, a spindle mounted in said housing for rotation therein, a chuck for holding a tool, at least a portion of said chuck mounted in said spindle for movement therewith, means formed in said housing and coacting with means cooperating with said spindle for permitting the spindle to move in a direction parallel to its axis and to selectively rotate within said housing depending upon the position of the spindle in the housing, a longitudinal slot defined in a portion of said spindle, a shaft supported by said housing, and a pawl slidably mounted on said shaft, said pawl having a portion thereof positioned to engage said longitudinal slot and said pawl constructed such that the spindle may rotate in a first direction and be prevented from rotating in a direction opposite to the first direction.

3,371,365
PORTABLE BOWLING BALL CLEANER
Otto F. Falckenberg, 3721 N. Greenview Ave., Chicago, Ill. 60613
Filed Mar. 16, 1965, Ser. No. 440,267
9 Claims. (Cl. 15—97)



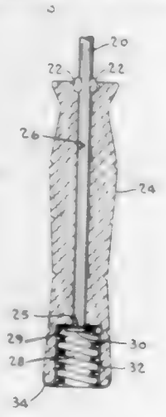
A portable bowling ball cleaner having a ball support with a vertical spindle upon which is mounted a suction cup and a curved ball encompassing wiper mounted over the ball and yieldable rubber bumpers disposed about the ball to prevent the ball from falling off the cup when the ball is rotating and serving to facilitate removal or placement of the ball with respect to the support.

3,371,366
MOP HOLDER HAVING A UNIVERSALLY ADJUSTABLE HANDLE
Harold E. Ottensmeier, 14109 Ardis St., Bellflower, Calif. 90706
Filed Nov. 16, 1964, Ser. No. 411,248
2 Claims. (Cl. 15—144)

2. In a mop holder, a substantially flat base plate, means for attaching a mop to said base plate, an inverse U-shaped bracket disposed above said base plate, the opposite ends of said bracket being pivotally mounted with respect to said base plate along a horizontal axis of pivotal movement, said bracket having an integral center portion twisted at a right angle to extend radially with respect to the axis of pivotal movement of said bracket, a

handle disposed above said bracket, and a pivot member connecting the lower end of said handle to said center portion of said bracket on a horizontal axis of pivotal movement transverse to the axis of pivotal movement of said bracket, whereby manipulation of said handle provides universal swivel action of said handle with respect to said base plate.

3,371,367
HANDLE FOR PAINT ROLLER
Louis Tigerman, Milwaukee, Wis., assignor to Bestt Roller Inc., Fond du Lac, Wis., a corporation of Wisconsin
Filed Oct. 6, 1965, Ser. No. 493,520
4 Claims. (Cl. 15—145)

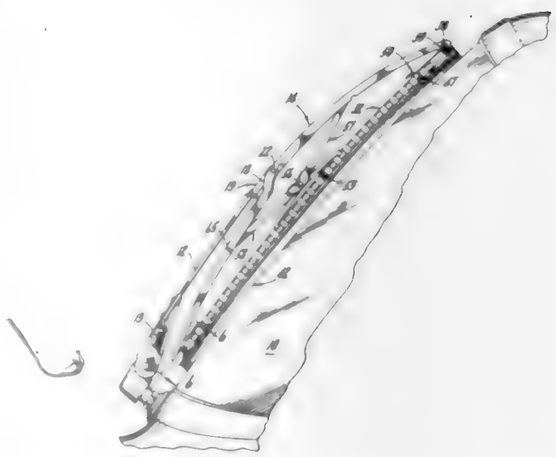


This invention comprises a metal frame for a paint roller or the like which has a solid metal portion on which a frangible handle is carried. The solid metal portion extends through such frangible handle and an internally threaded metal socket is rigidly secured to the end of such solid portion. When an extension is fitted in such socket the strain is transmitted directly to such metal portion and not to such frangible handle.

3,371,368
WINDSHIELD WIPER
Harold Lloyd Walker, P.O. Box 185, Finch, Ontario, Canada
Filed May 24, 1965, Ser. No. 457,981
5 Claims. (Cl. 15—250.04)

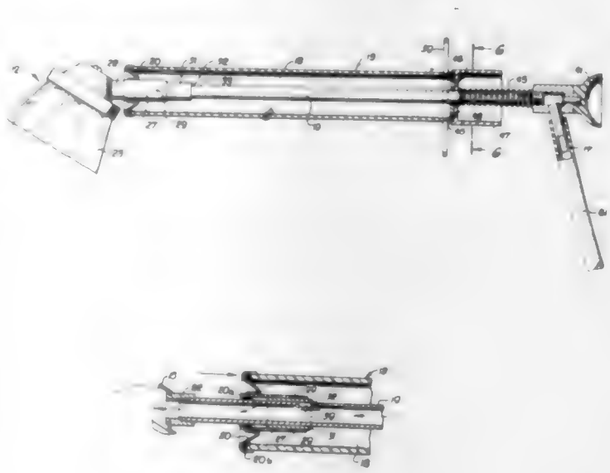
This specification discloses a windshield wiper comprising a blade, a blade support that is inflexible in the direction of blade travel but flexible in a direction normal to blade travel, a drive connected to the support for causing reciprocating travel of the blade over a windshield, structure carried by the blade support and providing a gas impervious cavity; and means to introduce gas under pressure into said cavity to flex said blade support and cause said blade to conform to a windshield.

3,371,369
WINDSHIELD WIPER
Ralph H. Wise, % Arvin Industries, Inc., Columbus, Ind. 47201
Filed July 28, 1965, Ser. No. 475,447
16 Claims. (Cl. 15—250.42)



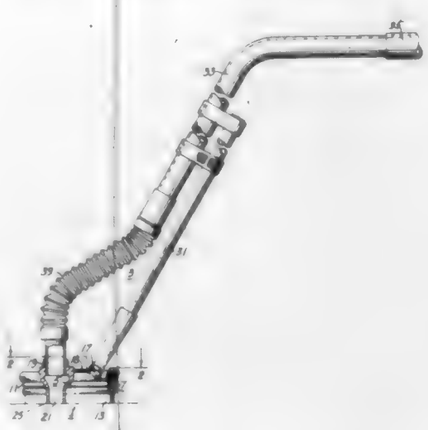
A windshield wiper assembly for wiping a curved surface comprising an elongated flexible wiper attached at its ends to a relative rigid elongated bow structure and link means carried intermediate the ends of the bow structure to apply pressure to the wiper intermediate its ends.

3,371,370
DISHWASHING APPARATUS
Edward J. Feser, 8862 Arcadia Ave., San Gabriel, Calif. 91775
Filed Oct. 22, 1965, Ser. No. 501,730
6 Claims. (Cl. 401—46)



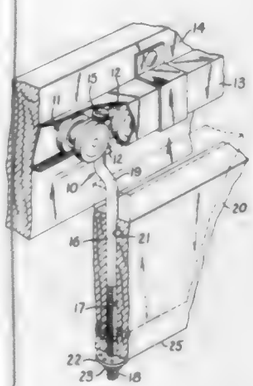
A hand operated dishwashing apparatus which is adapted to be attached to a source of water and which includes a reservoir of detergent. The apparatus further includes manual control means for positioning within the apparatus and discharging a predetermined amount of detergent into a stream of water adjacent a brush portion of the dishwashing apparatus.

3,371,371
PICK-UP TOOL ASSEMBLY
Ettore Steccone, 8416 Ney Ave., Oakland, Calif. 94605
Filed Jan. 18, 1966, Ser. No. 521,350
4 Claims. (Cl. 15—402)



A pick-up tool assembly involving a vacuum head maintained in proper engagement with a surface to be cleaned, by connecting same to a squeegee, with leaf springs, to which springs is hinged a handle.

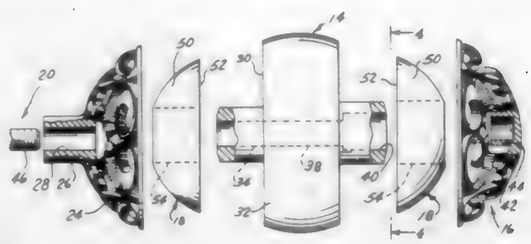
3,371,372
SLIDING DOOR HARDWARE
George Banse, Sterling, Ill., assignor to National Manufacturing Co., Sterling, Ill., a corporation of Illinois
Filed Jan. 12, 1966, Ser. No. 520,185
6 Claims. (Cl. 16—105)



A rod has its upper end attached to a track follower and its lower end offset and passing through a cross-piece at the top of the door, the lower end of the rod having a non-circular threaded cross-section. A washer with a matching non-circular section is positioned around the lower end of the rod and nailed to the bottom of the cross-piece to prevent the rod from turning in an angular direction once it has been positioned to space the door a suitable distance from the doorway. A nut is threaded underneath the washer to support the door vertically.

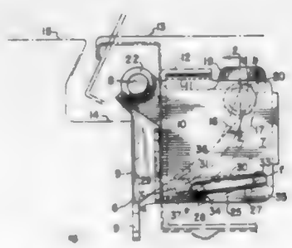
3,371,373
DECORATIVE MODULAR KNOB ASSEMBLY FOR DRAWERS, DOORS, CABINETS, AND THE LIKE
Matthew M. Adams, Arcadia, Calif., assignor, by mesne assignments, to Travis Plating Co., Inc., a corporation of California
Filed Apr. 16, 1965, Ser. No. 448,750
2 Claims. (Cl. 16—121)

A decorative modular pull or knob for drawers, cabinets, and the like, having multiple parts which may be assembled in various combinations to alter the size and appearance of the knob and include interchangeable colored



inserts visible through ornate openings in certain of the parts.

3,371,374
DOOR HINGE EMBODYING TORSION BAR HOLD-OPEN MEANS
Joseph H. Marchione, Rockford, Ill., assignor to Atwood Vacuum Machine Company, Rockford, Ill., a corporation of Illinois
Filed Aug. 11, 1966, Ser. No. 571,818
10 Claims. (Cl. 16—145)

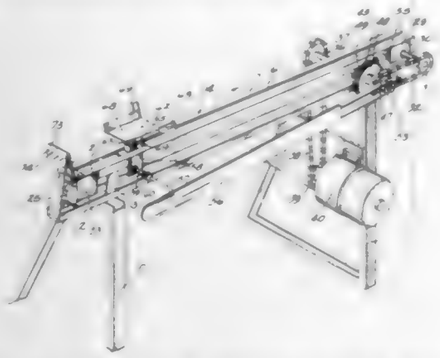


This hinge has a scalloped roller as a striker mounted on a vertical pin for rotation relative to one of the hinge members, the other hinge member carrying a vertical torsion bar with the upper end bent in a semi-circle to provide a laterally extending arm with a substantially vertical detent portion projecting from its outer end, which is supported on the hinge member independently of the other hinge member so as to maintain a preload spring tension, the detent portion being disposed in the path of arcuate movement of the striker roller and movable relative to the torsion bar by deflection of said arm by said roller in a direction to increase the spring tension in said bar when said roller comes into engagement with said detent in the door opening and closing movements for a hold-open action in fully open position, the scalloped periphery of the roller causing the detent to drop into a scallop upon each engagement, thereby forcing the roller to turn through a certain angularity in each movement of the roller past the detent. Friction means resist turning of the roller so that the same scallop is engaged by the detent in each operation in the door opening and closing operation, until the roller is turned to a new position. The other end portion of the torsion bar serves by engagement with a stop on the other hinge member to limit the door opening movement positively after the detent passes the roller.

3,371,375
MACHINES FOR AIDING IN SKINNING SMALL ANIMALS
Joseph J. Bartel, R.R. 2, Box 70, New Holstein, Wis. 53061
Filed Oct. 19, 1965, Ser. No. 497,963
5 Claims. (Cl. 17—21)

A machine for removing the skin from animals includes an elongated frame which supports sprocket wheels and an endless pull chain driven by an electric motor. The frame also includes slideways for guiding movement of a carriage which is engageable with the pull chain. The body

of the animal is attached to one end of the frame and flaps of skin from the rear legs are attached to ears on the carriage. Movement of the carriage to strip the skin from



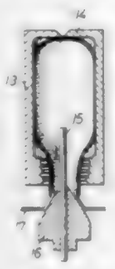
the body in the form of a tube with the fur on the inside is accomplished by leaning against a lever which extends longitudinally of the frame to engage a friction clutch and drive the pull chain.

3,371,376

APPARATUS FOR THE PRODUCTION OF HOLLOW OBJECTS WITH RELATIVELY WIDE OPENINGS

Stefan Fischer, Korresgarten, and Rainer Fischer, Buchbitze, both of Lohmar, Bezirk Cologne, Germany

Filed Sept. 24, 1963, Ser. No. 311,011
Claims priority, application Germany, Sept. 26, 1952, F 37,884
3 Claims. (Cl. 18—5)



1. An apparatus for the manufacture of hollow objects having a relatively wide neck opening, from thermoplastic material in workable form, comprising: means for producing an open ended tube of thermoplastic material, a divided mold to enclose said tube and thereby close one end thereof, means for introducing an expansion medium within said tube thereby blowing the same into contact with the internal cavity of said mold, means for widening a portion of said tube prior to the final blowing of the said tube into the said internal cavity, said widening means including gripping claws which are adapted to seize and expand the said tube at its open end, and a control device to control the actuation of the said gripping claws, said control device for the said gripping claws being comprised of a conical mandrel, and means to move the said conical mandrel along the direction of the longitudinal axis of the said tube whereby the axial movement of the conical mandrel will serve to radially move the gripping claws together or apart.

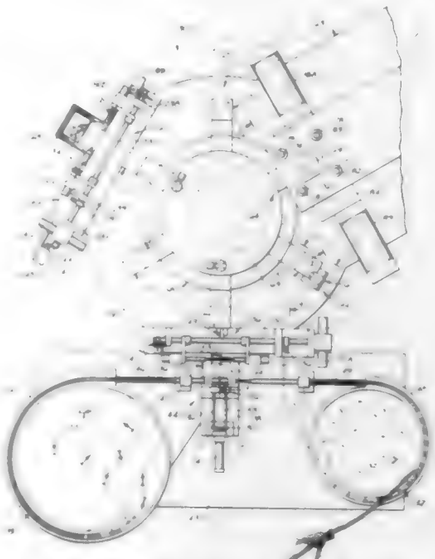
3,371,377

APPARATUS FOR MAKING COMMUNICATIONS PLUGS

Mieczyslaw Budzich, Dundalk, and William W. Cunningham, Jr., Middle River, Md., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 20, 1966, Ser. No. 521,898
10 Claims. (Cl. 18—5)

An apparatus for assembling communications plug elements and for insulating the plug elements electrically from each other to form a plug. Mating plug elements are preassembled automatically at an assembly station and are transferred automatically into one of a plurality of molds arranged radially on an indexable turntable. The turntable



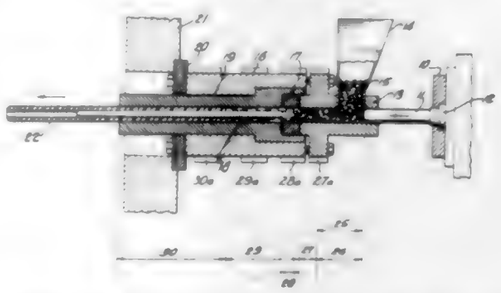
is indexed to a molding station whereat an insulating compound is injected into the mold and between the preassembled plug elements to form the plug. The turntable is again indexed where the insulating compound cures and the plug is ejected at an unloading station.

3,371,378

APPARATUS FOR PRODUCING EXTRUDED TUBES COMPOSED OF EXTRUDABLE THERMOSETTING RESINS CONTAINING REINFORCING FIBERS OF FINE TEXTURE

Jack J. Baier, 518 Manhasset Woods Road, Manhasset, N.Y. 11030

Original application Mar. 25, 1963, Ser. No. 267,720. Divided and this application July 28, 1966, Ser. No. 568,447
6 Claims. (Cl. 18—12)



An apparatus for producing extruded tubes composed of extrudable thermosetting resins and suitable fibers oriented for circumferential reinforcement of said tubes, said apparatus having a mandrel therein and having a support for positioning said mandrel at its inner end, and said mandrel being in the form of a ring arranged with helically arranged vanes which redirect the reinforcing fibers in a circumferential direction during the extrusion.

3,371,379

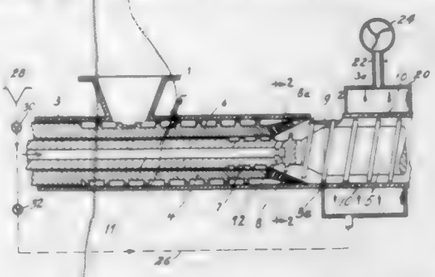
APPARATUS FOR DEGASSING THERMOPLASTIC MATERIAL IN SCREW PRESSES

Friedrich Reifenhäuser, Troisdorf, Germany, assignor to Reifenhauser K.G., Troisdorf, Germany

Filed Jan. 24, 1966, Ser. No. 522,746
4 Claims. (Cl. 18—12)

The disclosure relates to the provision of structure for removing gas in addition to that which is liberated in the

expansion zone of a rotating screw plastic extruder which comprises an elongated extension of the main discharge casing and which has a plurality of longitudinally and circumferentially spaced holes. The holes communicate with



a vacuum manifold for positively removing any liberated gases. Additional degassing means is provided by a central channel in the take-up screw which has its suction end at the expansion zone and its discharge end connected to the vacuum manifold.

3,371,380

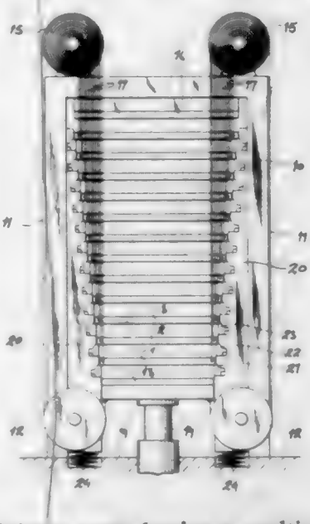
ABUTMENT DEVICE FOR THE PLATENS OF A MULTIPLATEN PRESS

Karl Bruder, Krefeld, Herbert Buschfeld, Erkelenz, and Klaus Gerhardt, Neukirchen-Vluyn, Germany, assignors to Firma G. Siempelkamp & Co., Krefeld, Germany, a corporation of Germany

Filed Dec. 15, 1965, Ser. No. 513,975

Claims priority, application Germany, Mar. 16, 1965, S 95,979

10 Claims. (Cl. 18—17)



1. In a multiplaten press having a multiplicity of vertically movable plates, the improvement which comprises an abutment device having vertically spaced horizontally offset stepped abutment surfaces individually engageable by respective platens of the press for supporting said platens in an open condition of the press, and resilient means for permitting elastic movement of said abutment surfaces upon their engagement by said platens on press-opening movement thereof.

3,371,381

APPARATUS FOR MANUFACTURING CORRUGATED OR CONVOLUTED HOSE

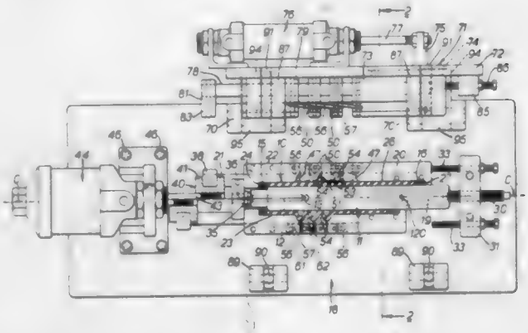
Noel Louth, Leicester, England, assignor to John Bull Rubber Company Limited, Leicester, England, a British company

Filed Mar. 10, 1965, Ser. No. 438,482

Claims priority, application Great Britain, Mar. 11, 1964, 10,300/64

6 Claims. (Cl. 18—19)

An apparatus including means for manufacturing corrugated or convoluted hose of rubber or the like in which



the walls of the hose are corrugated so as to present a wavy profile both inside and outside the hose.

3,371,382

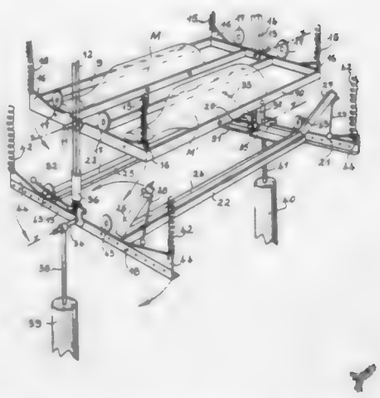
METHOD AND MEANS FOR FORMING HOLLOW ARTICLES OUT OF A SHEET OF THERMOPLASTIC MATERIAL

Pierre Alfred Ciraud, 115 Ave. Paul Firino-Martell, Cognac, Charente, France

Filed Oct. 11, 1965, Ser. No. 494,746

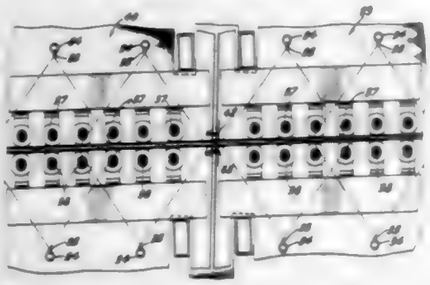
Claims priority, application France, Oct. 16, 1964, 991,803; Sept. 1, 1965, 30,029, Patent 1,457,523

12 Claims. (Cl. 18—19)



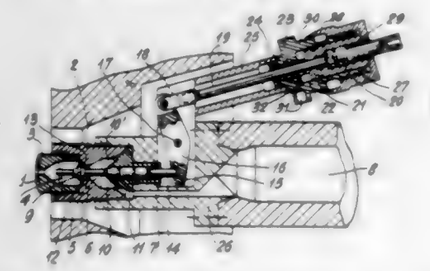
An apparatus for moulding hollow articles from thermoplastic material. There are two pivotally connected half molds which when they engage each other form a complete closed mold. Two superpositioned frames are provided which are also divided into two halves which are hingedly secured together in a line parallel to the pivoting line of the two half molds. The lower frame is adapted to hold two parallel edges of a sheet of thermoplastic material along lines parallel with the hinge of the frame and the halves of the upper frame carrying each one-half mold with it opening facing a corresponding half of the lower frame. The folding of the upper frame along its hinge engaging the half molds with each other to form a complete mold. Means are provided for heating the sheet of thermoplastic material in the lower frame to softening temperature. Means are also provided for raising the hinges of both frames to fold the latter and thereby urge the sheet on the lower frame towards the location of the inside of the mold when in its closed position and to close thereafter the mold on the upper frame over the sheet. Means are provided to make the sheet mate the inner surface of the closed mold.

3,371,383
CONTINUOUS CASTING APPARATUS
Olof H. Heilsund, Lakewood, Calif., assignor to Swedlow Inc., Garden Grove, Calif., a corporation of California
Original application Sept. 28, 1965, Ser. No. 490,897. Divided and this application Sept. 15, 1966, Ser. No. 593,621
16 Claims. (Cl. 18—26)



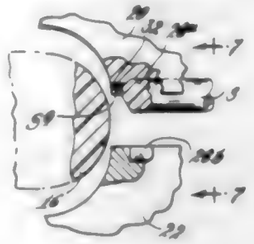
Apparatus for continuous casting of polymerizable monomers comprising a first endless belt disposed above a second endless belt to define a casting zone wherein the material-receiving end of the casting zone is at a higher elevation than the material discharging end thereof such that the belts are inclined and wherein the path of the belts through this incline is defined by the natural curvature thereof. Preferably, support means and backing means defining a path for the belts in accordance with the natural curvature thereof are provided and the upper belt is maintained under a tension greater than that used to determine the natural curvature and the lower belt is maintained at a tension less than that used to determine the natural curvature. Heating means are provided in the casting zone and seal means are provided between the edges of the belts in the casting zone. The difference in elevation between the material receiving end and the material discharging end of the casting zone is sufficient to incline the belts such that a liquid material being cast in the casting zone will develop sufficient fluid pressure to maintain the spacing between the belts such that the belts are parallel and spaced at a predetermined distance in the casting zone.

3,371,384
INJECTION VALVE PRESSURE REGULATOR
Robert Nouel, Villejuif, France, assignor to Lenslite Co., Inc., a corporation of Florida
Filed May 6, 1965, Ser. No. 453,798
14 Claims. (Cl. 18—30)



1. An injection valve pressure regulator comprising a nozzle having a chamber and adapted to introduce plastic material into a mold cavity, a pair of passages leading into and out of said chamber, valve means in said chamber including opposed seats at said passages and a valve member movable to engage said seats and close said passages, said valve member having sections of different diameter subject to pressure of plastic material being injected and responsive to the back pressure resulting from a filled condition of a mold cavity to urge the valve member against one of said seats to interrupt the flow of plastic material to said chamber, a fluid pressure device connected to said valve member, said fluid pressure device comprising a pair of pistons each slidable in a cylinder, means for applying pressure fluid to one cylinder to provide a force for urging said valve member to a position intermediate said valve seats, and means for applying pressure fluid to the second cylinder to move said valve member against said other valve seat to close the nozzle connection with the mold.

3,371,385
INJECTION MOLD ASSEMBLY WITH MEANS FOR SHEARING SPRUE FROM FINISHED ARTICLE
Anthony S. Cordio, Fitchburg, and George F. Mairle, Waltham, Mass., assignors to International Vulcanizing Corporation, Waltham, Mass., a corporation of Massachusetts
Filed Mar. 8, 1966, Ser. No. 532,672
6 Claims. (Cl. 18—30)

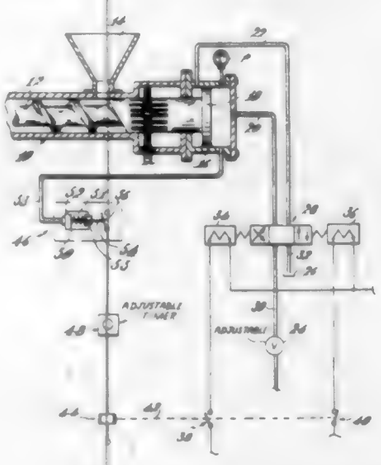


1. In an injection mold assembly for applying bottoms to footwear, a sole plate and mold ring which constitute the bottom and side wall of the mold cavity for receiving an elastomer to form a bottom having a tread surface and a peripheral edge, said mold ring embodying side wall parts separable to permit removing the finished article, two of said side wall parts containing at their interfaces grooves which collectively form an injection passage part way through the side wall; a conductor extending from the passage the remainder of the way through the side wall through which elastomer supplied to the passage enters the mold cavity, said conductor terminating at the interior surface of the side wall, said conductor being embodied in one of the parts exclusively of the other and being operable, by relative movement of the parts, when they are separated to free the article from the mold, to shear the sprue from the edge of the formed bottom at its place of junction therewith.

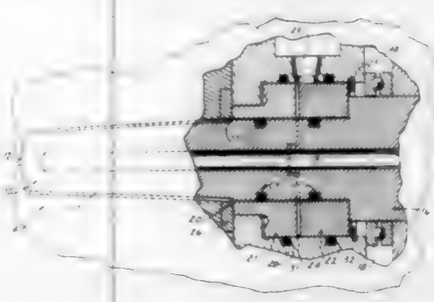
3,371,386
INJECTION APPARATUS WITH PRESSURE REGULATION
Herbert Ludwig, Desmastr. 112, Usen, near Bremen, Germany
Filed Mar. 31, 1966, Ser. No. 539,047
9 Claims. (Cl. 18—30)

1. In injection apparatus comprising a barrel within which there is mounted a screw which is both rotatable in the barrel and reciprocable therein to effect plasticization and ejection of an elastomer in and from the barrel, said screw at its rear end projecting into a motor cylinder and having on it a piston fitting said motor cylinder, and said motor cylinder being provided at its opposite end with conductors by means of which a pressure fluid is alternately supplied from a source of pressure fluid to one side or the other of the piston and vented from the opposite to a sump; means for limiting injection pressure to a predetermined maximum, comprising a slide valve operable, in one position, to connect the conductors, respectively, to said source of pressure fluid and to said sump to supply fluid pressure to one side of the piston and vent the other, and in another position to reverse the connections, pressure-responsive means connected to the motor cylinder at said rear side of the piston responsive to a pressure in excess of said predetermined maximum

to effect shifting of the slide valve to supply fluid pressure to the motor cylinder at the front side of the piston and to vent said rear side, and means for delaying the operation of said slide valve an appreciable interval following response of said pressure-responsive means to said predetermined maximum pressure.



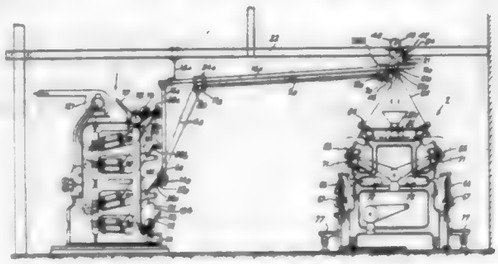
3,371,387
MOLD WITH MECHANICAL SEALS AT THE PARTING LINE
Kenneth J. Cleereman, Midland, and Edward R. Sederlund, Saginaw, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,713
17 Claims. (Cl. 18—42)



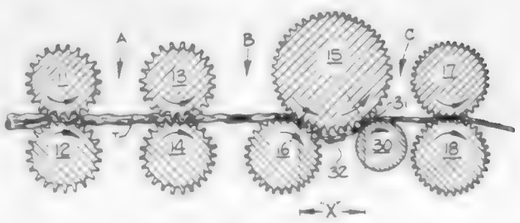
1. A mechanical seal for use in molding apparatus having an outer mold element and an inner mating mold element which together define a mold cavity and one of which is rotated or oscillated during the molding cycle, said mechanical seal comprising a first sealing ring fixedly secured to said outer mold element and exposed at the parting line of said molding apparatus; a seal member including a second sealing ring about said inner mold element with said second sealing ring engageable with said first sealing ring when said molding apparatus is closed; and means for forcing said second sealing ring into engagement with said first sealing ring when said molding apparatus is closed.

3,371,388
INSTALLATION FOR CONVEYING SLIVERS BETWEEN TWO TEXTILE MACHINES
Pierre Dillies, Croix, Nord, France, assignor to Etablissements Lemaire & Dillies, Nord, France, a French company
Filed Dec. 24, 1964, Ser. No. 420,965
Claims priority, application France, Jan. 3, 1964, 959,318
6 Claims. (Cl. 19—151)

An installation for continuously transferring slivers from a first textile machine adapted to produce slivers to a second textile machine adapted to process the slivers. The installation includes a plurality of narrow conveyor belts each extending between the two machines and laterally spaced apart from one another. The installation also includes means for guiding the slivers and distributing the slivers regularly over the width of the conveyor belts.

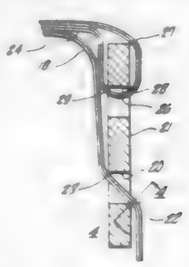


3,371,389
SLIP DRAFTING MEANS AND METHOD FOR TEXTILE FIBERS
Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries Inc., Bessemer City, N.C., a corporation of North Carolina
Filed Oct. 21, 1965, Ser. No. 499,722
9 Claims. (Cl. 19—259)



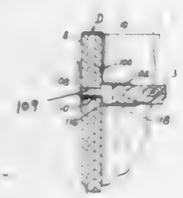
Apparatus and method for imparting draft to textile material while improving the uniformity thereof which includes feeding the textile material into and through a drafting zone and between rotating surfaces in the drafting zone rotating at substantially the same speed but at a slower speed than the rate of feed and defining a restricting passage in the drafting zone adjacent the entrance thereof to impart a sufficient retardant slip draft force on the textile material passing through the restricted passage to create and maintain a reservoir of excess fibers behind the passage in the drafting zone for distribution along the textile material to compensate for variations in weight and density of the textile material being drafted.

3,371,390
BALE TIE
Earle M. Sieglitz, Jr., Mexicali, Baja California, Mexico, assignor to Internacional, S.A., Panama, Panama, a corporation of Panama
Filed Dec. 13, 1965, Ser. No. 513,236
3 Claims. (Cl. 24—23)



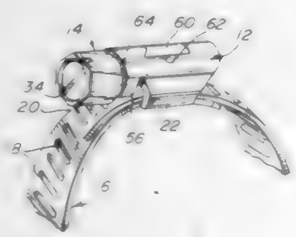
A bale tie having an elongated, flexible metal band provided with laterally-spaced ribs that project from the band to prevent stress concentrations in and failure of band when in use.

3,371,391
FASTENING DEVICE
Robert J. Holton, Rocky River, Ohio, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio
Application June 1, 1965, Ser. No. 460,370, which is a division of application Ser. No. 163,938, Jan. 2, 1962, now Patent No. 3,230,591, dated Jan. 25, 1966. Divided and this application Oct. 18, 1966, Ser. No. 587,605
21 Claims. (Cl. 24—81)



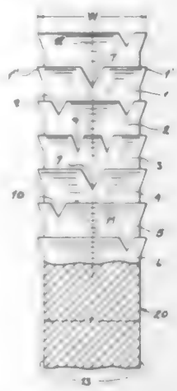
Fastening devices for retaining covers or the like on a container comprising a locking clip for securement over a marginal edge of the container and a supporting clip engageably interlocking with the locking clip for supporting a cover on the container. The locking clip in one form including a dart-like leg for insertion through the material of the container and the supporting clip including a channel for supporting a cover on the container. In addition, a device for retaining the ends of sheets of paperboard or the like having a U-shaped body with legs which have dart-like indents at the ends for gripping engagement with the paper sheets, and, a device having a generally flat body with pairs of slits defining a plurality of spring arms spaced from the body for gripping engagement with the paper sheets.

3,371,392
WORM DRIVE HOSE CLAMP
Walter Rueckheim, La Grange Park, Ill., assignor to Wittek Manufacturing Co., Chicago, Ill., a corporation of Illinois
Filed Feb. 21, 1966, Ser. No. 529,103
10 Claims. (Cl. 24—274)



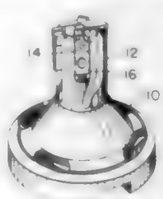
A worm drive hose clamp of the type having a slotted band, a worm screw housing and means to retain a worm screw in the housing, the clamp being formed of a single member of sheet metal having lugs at one end thereof which extend laterally therefrom, the lugs being bent arcuately so that they join at their free edges to form the housing, the free edges of the lugs having cooperating dove-tail interlocking formations so that once engaged together, the free edges cannot come apart although they are not welded or otherwise deformed. Two tabs integral with the housing are bent behind the head of the screw to lock the same in place. In one embodiment, the line of juncture of the free edges of the lugs is coincidental with a plane passing through the center of the housing. In another embodiment described, the line of juncture is offset from the center of the housing providing an imperforate wall of the housing at the crown or top thereof.

3,371,393
HOT-SAW BLADE
Günther Grassmann, Eddesse 40, uber Peine, Germany
Filed Mar. 4, 1966, Ser. No. 531,863
6 Claims. (Cl. 29—95)



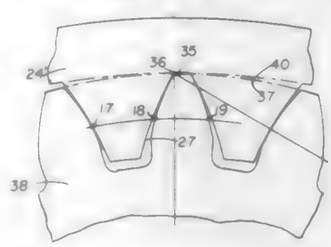
1. A hot-saw blade comprising a generally flat body having an edge provided with a succession of blade teeth, at least some of said teeth being notched in the plane of said body to deform them laterally outwardly, the notches of successive ones of said some of said teeth being laterally offset successively along said edge.

3,371,394
CARTRIDGE TYPE HOLDER
Hubert Dupuis, Warren, Mich., assignor to Goddard & Goddard Company, Detroit, Mich., a corporation of Michigan
Filed Sept. 27, 1965, Ser. No. 490,594
5 Claims. (Cl. 29—96)



A cartridge for cutting inserts adapted to be inserted in a tool holder pocket without lateral extension beyond the side walls of the pocket, and to have all adjusting and clamping devices thereof operable at the exposed outer surface thereof.

3,371,395
GEAR-SHAPED CUTTER
Ernest Wildhaber, Brighton, N.Y.
(124 Summit Drive, Rochester, N.Y. 14620)
Filed Feb. 18, 1966, Ser. No. 528,544
16 Claims. (Cl. 29—103)



1. A generating cutter adapted to engage a gear cut therewith in internal mesh, having a plurality of identical cutting teeth spaced in a circle about its axis, cutting edges being formed thereon by cutting faces, said cutter being designed so that the pitch point of said mesh

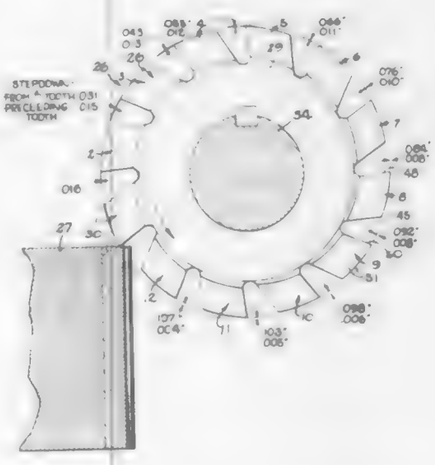
has a distance from the cutter axis exceeding that of the inmost boundary of the cutting edges by at least two thirds of their radial height at the mean stage of the cutter life, whereby at said distance the profile inclination of the cutter path matches the profile inclination of said gear.

3,371,396

CUTTER FOR MILLING GEARS AND THE LIKE

Stuart J. Johnson, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois

Filed Apr. 7, 1966, Ser. No. 540,901
8 Claims. (Cl. 29—103)



1. A cutter adapted for use in a conventional hobbing cycle to continuously mill interdental spaces of predetermined and desired cross-sectional profile in the periphery of a cylindrical metal work blank, said cutter having, in combination, a generally cylindrical body adapted for rotation about its longitudinal axis, a multiplicity of teeth projecting from the periphery of the body and angularly spaced along a helical line extending around the body at least a full revolution, said line being inclined relative to said axis at a constant lead angle determined by the pitch of said interdental spaces, cutting edges around the projecting ends of the leading faces of said teeth having profiles corresponding to the desired final cross-sectional profiles of said spaces by virtue of the formation of all of said edge profiles by the same form tool moved only rectilinearly relative to the cutter, the projection of at least the last of said profiles on a plane paralleling said cutter axis being of a determined shape to produce said desired interdental space profile, and the radial spacing of the successively acting cutting edges along said helical line varying, according to a preselected pattern, with the arcuate lengths of the metal layers removed by the respective cutting edges along said spaces whereby the thicknesses of the layers removed by the successively acting teeth decrease progressively to compensate for the lengthening of the layers and cause the volumes of metal removed by the successively acting teeth to be substantially equalized.

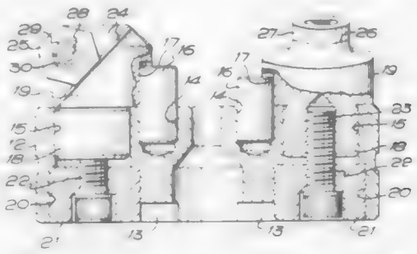
3,371,397

CUTTING TOOLS

Gerald H. E. Coleshill and David B. Scott, Sheffield, England, assignors to Marsh Brothers & Co. Limited

Filed July 13, 1967, Ser. No. 653,251
Claims priority, application Great Britain, July 20, 1966, 32,498/66; May 12, 1967, 22,108/67, 22,109/67
17 Claims. (Cl. 29—105)

A milling cutter has a plurality of seatings for throwaway tips, each seating having a spigot to fit in one of a plurality of bores in the cutter body and a surface non-concentric with the spigot, retaining screws for the seatings, and locking means for each seating locating in an adjacent bore and having a surface complementary to and



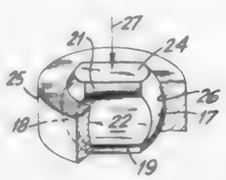
abutting the non-concentric surface on the seating, which locking means may be an adjacent seating, a locking plate or a spacing button also with a retaining screw, or a locking peg retained by engagement in a recess in the seating.

3,371,398

METHOD OF MAKING PLAIN SPHERICAL BEARINGS

Francis G. Patterson, Plainville, Ronald E. Restelli, Cromwell, and Warren A. Rival, Kensington, Conn., assignors to The Fafnir Bearing Company, New Britain, Conn.

Filed Aug. 3, 1965, Ser. No. 476,806
8 Claims. (Cl. 29—149.5)



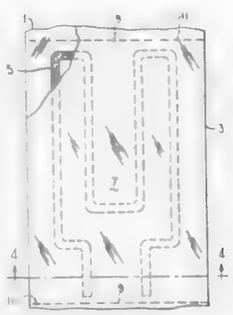
In the production of a plain spherical bearing, a truncated metal pusher ball is employed to prepare an outer ring for receiving a finished truncated bearing ball. The pusher ball is inserted endwise in the opening of the outer ring which has a spherical inner surface or raceway. The pusher ball is then rotated so that it nests in the raceway. The pusher ball is then pushed out of the outer ring, whereby to form a pair of deformed lips on the outer ring. The finished bearing ball is inserted into the outer ring via the lips thereof, and the lips thereafter closed.

3,371,399

METHOD OF MAKING INFLATED METAL PRODUCTS

Edwin A. Miller, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 17, 1964, Ser. No. 389,934
13 Claims. (Cl. 29—157.3)

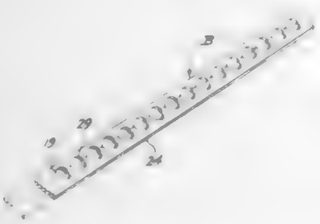


A composite sheet product having inflated separations in its area obtained by bonding the sheets with a stop-

off pattern therebetween, said pattern containing an oxide and if desired a protective material diffusible into the sheets. The sheets are heated in a reducing atmosphere penetrable through at least one of the sheets to reduce the oxide and release the resulting gaseous product in the area of the pattern to produce an inflation according to the pattern and to cause the protective material to diffuse into the sheet material, to provide a protective lining in the inflation if required.

3,371,400
SPLIT SHOT APPLICATOR AND MAGAZINE
George O. Edes, 60 Telfer Drive, Morgan Hill, Calif. 95037
Filed Feb. 15, 1966, Ser. No. 527,530
7 Claims. (Cl. 29—212)

1. A split shot applicator for fishing lines comprising:



a body adapted to receive an elongated shot magazine comprising a base strip having a plurality of split shot attached to one side thereof with the shot aligned lengthwise of the base strip and the split sides of the shot exposed,

an anvil mounted in one end of the body to lie clear of the base strip of a shot magazine loaded into the body and in alignment with the shot on such magazine,

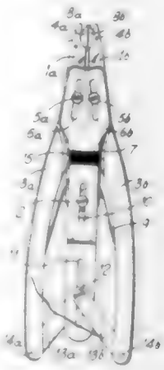
an actuating lever pivotally connected at one end thereof to the other end of the body,

a toggle link pivoted at one end thereof on the free end of the actuating handle and in light frictional engagement therewith for frictionally restricting pivotal movement of the toggle link relative to the handle,

means retaining the other end of the toggle link for longitudinal slidable movement within the body and free for movement transversely of the body from a position clear of the shot on a shot magazine loaded into the body to a position engaging the base strip of such magazine and into thrust engagement with the endmost shot of such magazine, said other end of the toggle link being moved endwise of the body toward the anvil by continued actuation of the handle toward the body for squeezing said last shot into gripping engagement with a fishing line inserted in the split of such shot.

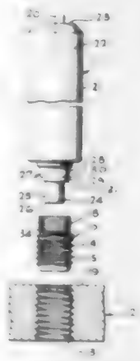
3,371,401
PLIERS FOR EXTERNAL CIRCLIPS
Michel Jean Louis Deguy, Luzy-sur-Marne, Haute-Marne, France, assignor to Deguy-Conge & Cie, Luzy-sur-Marne, Haute-Marne, France
Filed Feb. 10, 1966, Ser. No. 526,527
Claims priority, application France, Feb. 17, 1965, 5,860, Patent 1,433,504
9 Claims. (Cl. 29—229)

Circlips pliers provided with opening limiting jaws the spacing of which is adjustable in such a manner as to permit an instant and easy adjustment thereof with a single shifting of a slideway by the thumb of the hand which holds the pliers. The branches and the jaws are hingedly connected by two pins which engage respectively with two oblique symmetrical slots formed in the slideway.



Furthermore, this slideway serves as guide means insuring symmetrical spreading of the branches.

3,371,402
TOOL FOR EXPANDING THREADED INSERT
Robert Neuschotz, 1162 Angelo Drive, Beverly Hills, Calif. 90210
Filed Sept. 21, 1965, Ser. No. 488,934
12 Claims. (Cl. 29—243.52)



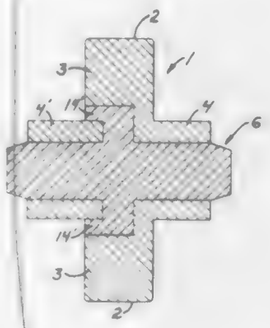
A tool for installing within a carrier part a threaded insert having a radially expansible locking portion. The tool has an expanding portion with a first external surface tapering at a first angle of between about 1 and 10 degrees, and a second external surface axially inwardly beyond the first surface and tapering at an angle of between about 20 and 45 degrees, with the two surfaces meeting each other at an annular edge at which the angle of taper changes abruptly. Two stop shoulders are provided on the tool axially outwardly of the expanding portion, and a reduced dimension pilot portion is provided axially inwardly of the expanding portion.

3,371,403
FLEXIBLE COUPLING MANUFACTURING
David Firth, 1441 E. Jefferson Blvd., South Bend, Ind. 46617
Filed Jan. 21, 1966, Ser. No. 522,200
7 Claims. (Cl. 29—416)

1. The method of manufacturing a pair of identical coupling members having face members with offset sectors which dovetail into each other and hubs adapted for mounting on shafts, comprising the steps of:

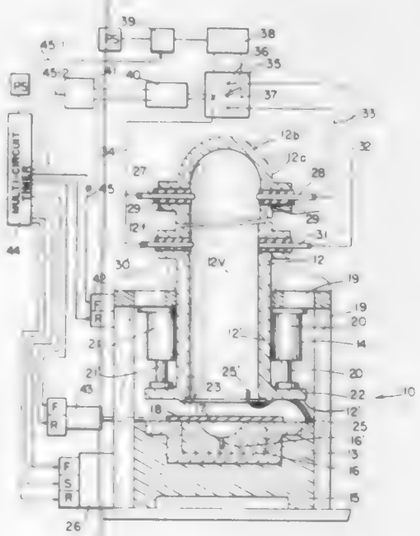
(a) forming said coupling members in an integral casting having a central core, the core providing a separation between the offset sectors of one member from the hub of the other and whereby said offset sectors overlap each other to form a continuous outer surface;

(b) machining one of said hubs;
(c) boring said hubs;
(d) machining the second hub;
(e) machining the outer periphery of said offset sectors in an uninterrupted manner; and



(f) severing the casting into two parts by removing the said overlapping portions of said offset sectors to thereby form two concentric, identical coupling members.

3,371,404
METHOD OF SIMULTANEOUSLY CLADDING AND DEFORMING MATERIAL BY INTENSE PRESSURE
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Filed Oct. 22, 1965, Ser. No. 501,395
6 Claims. (Cl. 29—421)

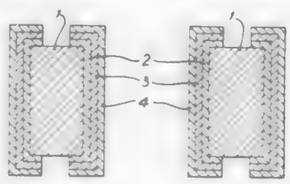


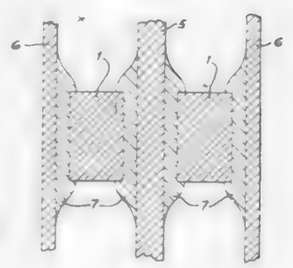
1. A method of cladding and shaping a member comprising:
(a) supporting a member to be clad adjacent a shaping means of predetermined shape,
(b) disposing a cladding material on the surface of said member to be clad and providing a working fluid medium above said cladding material,
(c) generating an intense pressure in said fluid medium against said cladding material at sufficient intensity to cause said cladding material to become molecularly bonded to the surface of said member and simultaneously causing said cladding material and member to be deformed to said predetermined shape.

3,371,405
METHOD OF PRODUCING POROUS HOLLOW NICKEL BODIES
Allen L. Klibanoff, Boston, Mass., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Dec. 23, 1964, Ser. No. 420,843
1 Claim. (Cl. 29—423)

A method of producing hollow nickel bodies having a uniform wall thickness comprising non-electrolytically plating a layer of porous nickel on the surface of a polystyrene substrate and thereafter leaching the polystyrene substrate from the plated substrate.

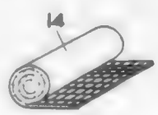
3,371,406
HERMETIC ELECTRICAL LEAD-IN ASSEMBLY
Robert L. Bronnes, Irvington, Richard C. Sweet, North Tarrytown, and Ray C. Hughes, Ossining, N.Y., assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 301,866, Aug. 13, 1963. This application Nov. 26, 1965, Ser. No. 510,017
4 Claims. (Cl. 29—473.1)





1. A method of hermetically sealing a meal to a ceramic comprising the steps of applying to the ceramic by cathodic sputtering successive layers of titanium, platinum, and stainless steel, and copper brazing the thus metallized surface of the ceramic to the metal part.

3,371,407
METHOD OF PRODUCING A COMPOSITE METALLIC MATERIAL BILLET
Peter Joseph Edward Forsyth, Farnham, Ronald Walter George, Farnborough, and Dennis Arthur Ryder, Macclesfield, England, assignors to Power Jets (Research and Development) Limited, London, England, a British company
Filed Feb. 15, 1965, Ser. No. 432,781
Claims priority, application Great Britain, Feb. 21, 1964, 7,362/64
6 Claims. (Cl. 29—475)



A method of producing in billet form a composite metallic material in which high strength reinforcing elements are embedded within a low strength matrix material and in a desired density or pattern. The reinforcing elements

are contained in a reinforcing layer which is placed on a layer of matrix material. The assembly is rolled-up and heated under pressure to convert it into billet form. The reinforcing layer is conveniently of a mesh or woven nature, the reinforcing elements being held and located by cross threads of a material which combines with the matrix material during the hot compacting treatment.

3,371,408

METHOD OF MANUFACTURING HOSE JOINT ELEMENTS

Francis Charles Charbonnet, % Cie des Raccords and Robinets, Ave. Florissant, Annemasse, Haute-Savole, France

Filed July 7, 1965, Ser. No. 470,009
Claims priority, application France, July 9, 1964, 981,244, Patent 1,408,901
3 Claims. (Cl. 29—508)

1. Method of manufacturing a hose joint of the bell-and-spigot type, comprising on the one hand an external bell and an internal tubular nipple, and of securing said bell on a hose end comprising a reinforcing mesh structure embedded in an external layer and an inner layer of flexible material, this method comprising the steps of:

imparting to said external bell the shape of a cylindrical skirt provided with a frustoconical inner flange;

forming in the inner wall of said skirt a plurality of retaining grooves;

machining a tubular nipple by forming an external peripheral groove therein;

inserting said nipple into the opening of said inner frustoconical flange of said bell;

crimping the inner edge of said flange into the external groove of said nipple;

stripping the hose end by removing said external layer of flexible material;

inserting said stripped end of said hose into the space formed between said skirt and said nipple;

crimping said skirt on said hose end and said nipple until said end is anchored in said retaining grooves in order to seal the joint between said bell and nipple and safely hold said hose within said bell.

3,371,409

METHOD OF MAKING A MANDREL FOR PRECISION-SHAPING INTERNAL SURFACES ON GLASS VESSELS

Robert E. Bonnet, Murray Hill, and James S. Hill, Cranford, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed Oct. 29, 1964, Ser. No. 407,544
4 Claims. (Cl. 29—528)

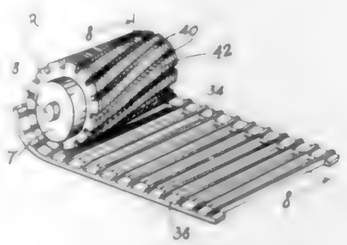
The present invention deals with a method of making a mandrel for shaping an internal surface on a glass vessel comprising coating a shaped base metal mandrel with a layer of fused oxide, snug-fitting a sleeve composed of a platinum-rhodium alloy onto the oxide-coated mandrel, shaping the sleeve to the contour of the coated mandrel, depositing a thin layer of platinum on the shaped sleeve, depositing a thin layer of gold on the platinum layer, heat treating the composite mandrel until the gold layer diffuses into the platinum layer leaving a gold-rich gold-platinum alloy surface on the mandrel.

3,371,410

FORMING AND DISPOSING INTEGRALLY CONNECTED CONDUCTORS IN ROTOR CORE SLOTS

Henry Gintovt, 14 Hamilton St., Dover, N.H. 03820

Continuation-in-part of application Ser. No. 328,786, Dec. 2, 1963. This application Jan. 12, 1965, Ser. No. 425,015
5 Claims. (Cl. 29—598)



Squirrel cage type secondary windings for induction motor rotors are formed from an improved sheet metal type secondary winding material to provide a secondary winding shell having conductor bar elements of a thickness greater than the depth of helical slots in a rotor body and whose end ring sections have outer edges spaced apart a greater distance than the axial length of the rotor. The secondary winding shell thus formed is subjected to forces for displacing the conductor bars into skewed positions and compressed into the bottoms of helical slots of the rotor. Portions of the conductor bars are flowed into overlapping relationship with respect to opposite end faces of outermost laminations in the rotor body to provide a solidly interlocked relationship of parts.

3,371,411

METHOD OF ALTERING THE TEMPERATURE SENSITIVITY OF STRAIN GAGES

John D. Russell, Malibu, Calif., assignor to Micro-dot, Inc., South Pasadena, Calif., a corporation of California

Original application June 15, 1960, Ser. No. 36,312. Divided and this application Sept. 17, 1965, Ser. No. 510,111
7 Claims. (Cl. 29—613)

1. Method for producing inherent temperature compensation within an unmounted strain gage composed of a strain responsive filament coupled through an electrical insulating material to a metallic support; that comprises establishing said strain gage at an elevated temperature, measuring the temperature sensitivity of said gage at said elevated temperature, and passing an electric current through the filament of said gage sufficient to effect a shift in temperature sensitivity therein with reference to its measured value.

3,371,412

METHOD OF TERMINATING A RESISTOR

James R. O'Keeffe, Columbus, Nebr., assignor to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska

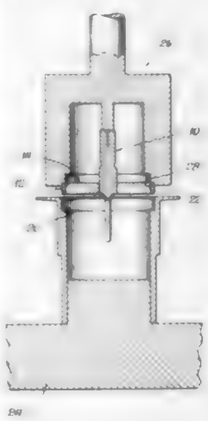
Filed Feb. 11, 1966, Ser. No. 526,898
8 Claims. (Cl. 29—621)

3. A method of terminating resistors comprising the steps of: providing a length of core material with resistance material thereon, providing a length of lead wire, providing a terminal band, securing said lead wire to said

resistance material by wrapping said terminal band around said core, said lead wire being between said band and said resistance material and having lengths thereof extending from both sides of said terminal band; severing said terminal band, said lead wire and said core in a direction substantially transverse to the longitudinal axis of said core.

6. A method of term . stor comprising the steps of: providing a lengt core material with resistance material thereon, providing a length of lead wire, securing said lead wire to said resistance material by wrapping a plurality of turns circumferentially around said core leaving a length of said lead wire at both ends of the wrapped section; severing said lead wire and said core through the wrapped portion of said lead wire.

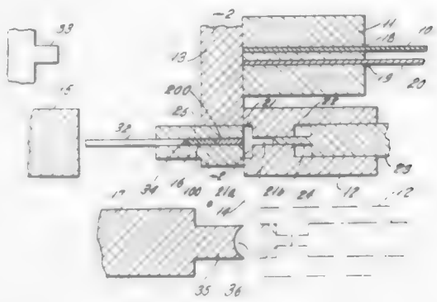
3,371,413
HERMETICALLY SEALED CONNECTOR
David F. Rundle, Cicero, Ill., assignor to Amphenol Corporation, Broadview, Ill., a corporation of Delaware
Filed Oct. 26, 1966, Ser. No. 589,551
1 Claim. (Cl. 29—629)



A hermetically sealed electrical connector and the method of making it wherein a glass body is interposed between a contact and a steel ring and is in melted-bond relationship with the contact and the ring to produce a hermetic seal therebetween. A metal shell, of a material such as aluminum, is disposed about the steel ring and is engaged to the ring in a heavy force fit accomplished with the shell heated to a predetermined temperature to result in a hermetic seal between the shell and the steel ring.

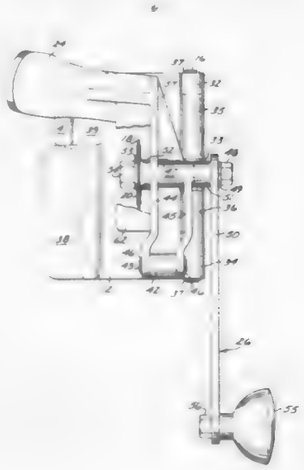
3,371,414
METHOD AND APPARATUS FOR FORMING COMPOSITE ELECTRICAL CONTACT ELEMENTS
Childress B. Gwyn, Jr., Export, Pa., assignor to Talon, Inc., Meadville, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 154,205, Nov. 22, 1961, which is a continuation-in-part of application Ser. No. 72,906, Dec. 1, 1960. This application Feb. 9, 1965, Ser. No. 431,310
5 Claims. (Cl. 29—630)

Method and apparatus for forming composite electrical contact elements by sequentially feeding and shearing stock materials for forming the contact working face and



body portions of such elements and bonding the resulting components by cold heading operations.

3,371,415
CONDUIT SAW
Elmer R. Hutchinson, North Hollywood, Calif., assignor of one-half to Elmer D. Dudek, Costa Mesa, Calif.
Filed May 15, 1967, Ser. No. 638,432
4 Claims. (Cl. 30—90.3)

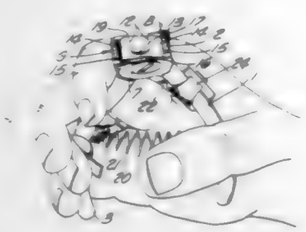


There is described in the specification a manually operated saw for making longitudinal cuts into cables and conduits and the like. The device is arranged so that a longitudinal section of the conduit is held in a vice one jaw of which has a finger paddle and the other a hand heel paddle whereby the jaws may be manually clamped. A saw blade carried by a hinged saw blade holder is lowered in selected degree through a cutout or slot in one jaw of the device into the space where the conduit is clamped. A handle is arranged to turn the saw blade.

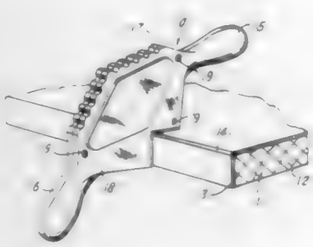
3,371,416
LEMON CLIPPER
Walter R. Horton, deceased, late of Ontario, Calif., by Marjorie Helen Horton, administratrix, Ontario, Calif., assignor to Sunkist Growers, Inc., Los Angeles, Calif., a corporation of California
Filed Jan. 21, 1966, Ser. No. 522,331
5 Claims. (Cl. 30—233)

The lemon clipper comprises a pair of pivotally connected complementary parts one of which has a gauge portion with a slot forming two gauge fingers with one of the fingers in the form of a first blade, the other complementary part having a second blade to cooperate with the first blade.

The slot of the gauge portion of the first complementary part forms a gauge edge of generally U-shaped configuration and the gauge portion is further cut away to form a gauge shoulder of generally U-shaped configuration symmetrically located relative to the U-shaped gauge edge, the gauge shoulder engaging lemons of globular shape to position the two blades for correctly severing the stems of the lemons.



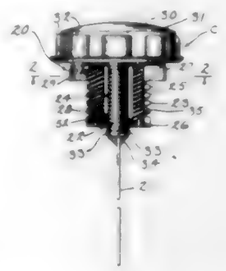
3,371,417
EDGE BEVELING TOOL
Martin Leibow, 7007 Mason Dells, Dallas, Tex. 75230
Filed Oct. 31, 1966, Ser. No. 590,926
9 Claims. (Cl. 30—293)



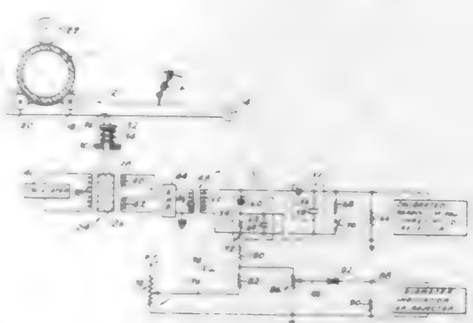
1. A tool comprising a frame having handle means for manual engagement, one side of said frame defining a notch with the faces of the notch providing bearing surfaces for engaging a workpiece, a cutting blade positioned adjacent the corner of said notch, an adjustable plate secured to said frame, an arm member pivotally mounted on said plate with said cutting blade being on one side of said arm member, and adjustable detent means fixed to said plate and bearing upon said arm member from a direction opposite said notch.

3,371,418
OIL LEVEL TESTING DIP STICK WITH CLOSURE
Axel Moeller, St. Petersburg Beach, Fla., assignor to Moeller Mfg. Co., Inc., Greenville, Miss., a corporation of Wisconsin
Filed May 18, 1966, Ser. No. 551,099
9 Claims. (Cl. 33—126.7)

1. An oil level testing dip stick having a closure body for sealing the oil filter pipe of an internal combustion engine including, a resilient compressible stopper body having an axial bore therethrough, inner and outer compression plates engaging the opposite ends of said stopper body, the outer compression plate having an axial opening, said inner compression plate having an inwardly struck axially disposed internally threaded sleeve forming a nut, means for anchoring said inner compression plate to said compressible stopper body, a rod rotatably mounted in the opening of the outer compression plate and threaded into the inner compression plate, said rod being continued beyond the inner compression plate and being provided with means to prevent the inner compression plate from moving off the inner end termination of said rod, a dip stick body carried by said closure body, and operating means on the outer end of the rod for turning the same in the inner compression plate.



3,371,419
OUT-OF-ROUNDNESS AND DIAMETER GAGE
Howard E. Banks, Horseheads, and Curtis A. Hartman, Elmira, N.Y., and Robert S. Hallstein, Enon, Ohio, assignors, by mesne assignments, to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,651
17 Claims. (Cl. 33—174)

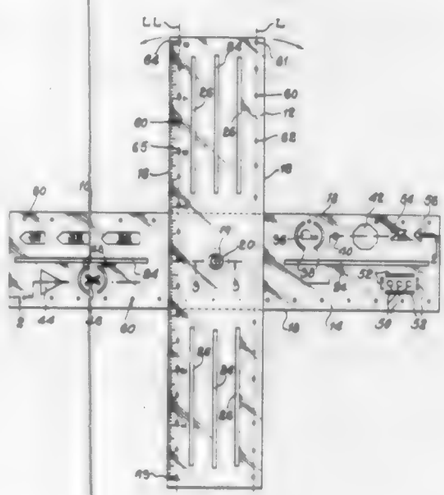


1. Apparatus for inspecting the peripheral configuration of circular objects for out-of-round condition comprising means for translating the peripheral configuration of a said object into an electrical signal which has a characteristic that varies according to said out-of-round condition and attains a maximum excursion while said inspecting is taking place, and means for obtaining a continuous fluctuating indication representing the difference between the maximum excursion derived during said inspection process and the instant values of the said signal characteristic regardless of the diameter of the said object being inspected.

3,371,420
STENCILS FOR DRAWING TRAFFIC ACCIDENT DIAGRAMS
Vincent J. Di Pane, Jr., 89 S. Pennington Road, New Brunswick, N.J. 08901
Filed Oct. 19, 1965, Ser. No. 497,689
6 Claims. (Cl. 33—174)

A stencil for facilitating the drawing of traffic accident diagrams and including a pair of plate members attached to one another for relative pivotal movemeent, each plate member having parallel drawing edges for defining a width corresponding to the width of a roadway in a diagram to be drawn, at least one slot in each plate member medially between the drawing edges for providing road-

way centerline drawing edges, and a plurality of perforations in at least one plate member aligned along a straight line and extending a distance along that straight line which is greater than the lateral distance between the roadway defining drawing edges and spaced from one



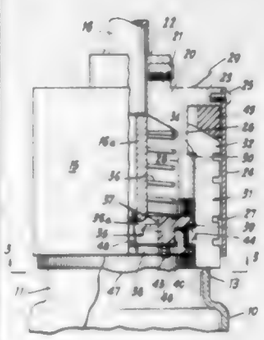
another at intervals equal to that lateral distance divided by a whole number for enabling the construction of diagrams including curved roadways. At least one plate member is also provided with apertures having outline configurations establishing further drawing edges defining a variety of traffic diagram symbols.

3,371,421

CONTAINER RIM DIP INSPECTION APPARATUS

Roger H. Fink and Frederick Z. Fouse, Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Aug 16, 1966, Ser. No. 572,717
16 Claims. (Cl. 33—174)



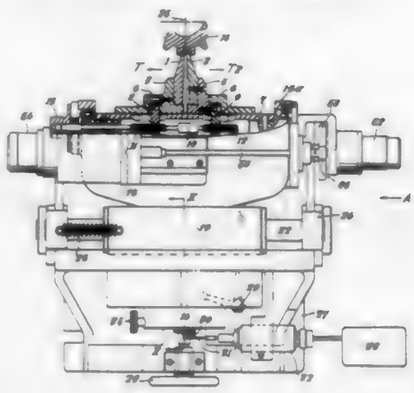
1. A container rim inspection apparatus comprising a plurality of sensing elements, a support member for holding said sensing elements to extend radially in a circumferential array and an axially movable relation to one another on engagement with a container rim, a reference member having axially spaced first and second means for defining the limits of deviation of said sensing elements, means for urging said reference member to a position wherein said first means is in reference relation with those of said sensing elements contacting a container rim and wherein said second means can be contacted by other of said sensing elements for an unacceptable deviation in position of any of said other of said sensing elements to determine the acceptability of an inspected rim.

3,371,422

GEAR-CHECKING INSTRUMENTS

Karl Müller, Zurich, Switzerland, assignor to Maag Gear Wheel & Machine Company, Limited, Zurich, Switzerland, a Swiss company

Filed Mar. 31, 1966, Ser. No. 539,053
Claims priority, application Germany, Apr. 6, 1965, M 64,794
7 Claims. (Cl. 33—179.5)



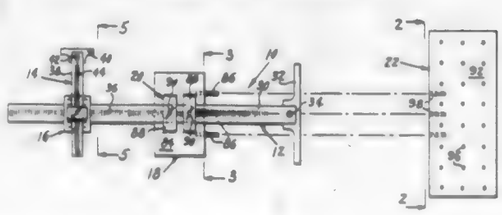
1. A machine for checking gears for radial run-out, comprising a machine frame, a rotatable shaft, measuring means mounted on the shaft for rotation therewith, the said measuring means having the form of an interrupted body of revolution and representing a gear tooth adapted to enter a tooth space of a gear wheel which is to be tested, a holder in which the said shaft is mounted with the axis of the shaft perpendicular to the axis of the holder, the holder being mounted on the machine frame for reciprocation perpendicular to the axis of the holder and for resilient movement perpendicular to the axis of said shaft, and means for indicating and recording the said movement of the measuring means perpendicular to said shaft.

3,371,423

MEASURING DEVICE FOR MARKING FASTENERS

Bryant M. Paul, North Highlands, Calif. (6830 Silverthorne Circle, Sacramento, Calif. 95842)

Filed June 1, 1966, Ser. No. 554,405
8 Claims. (Cl. 33—189)



1. A measuring device comprising:

a straight elongate bar having a longitudinal axis and an end perpendicular to the axis;

an alignment bar, extending away from the elongate bar, having a flat surface parallel to the axis;

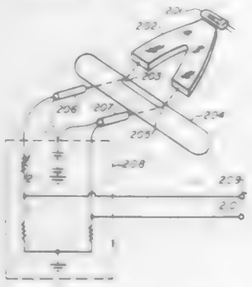
means mounting the alignment bar on the elongate bar positioning the flat surface parallel to the axis;

a measuring plate having a pair of parallel first and second planar faces and at least one aperture perpendicular to the faces for receiving a marking element; and

means mounting the measuring plate on the elongate bar between the alignment bar and the perpendicular end for movement parallel to the axis, the first face of the measuring plate residing flush against the elongate bar, the second face being spaced from the bar at least as far as any other element of the device so that when the second face abuts a planar surface

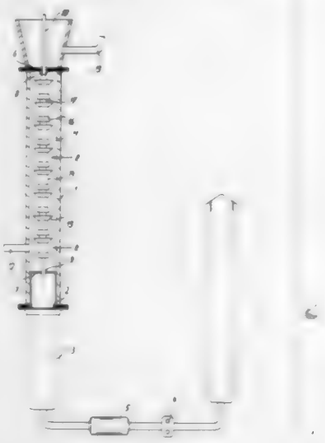
the second face positions the elongate bar parallel to the planar surface.

3,371,424
REFERENCE ATTITUDE INDICATING DEVICE
William Harold Sweet, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Mar. 25, 1965, Ser. No. 442,742
5 Claims. (Cl. 33—206)



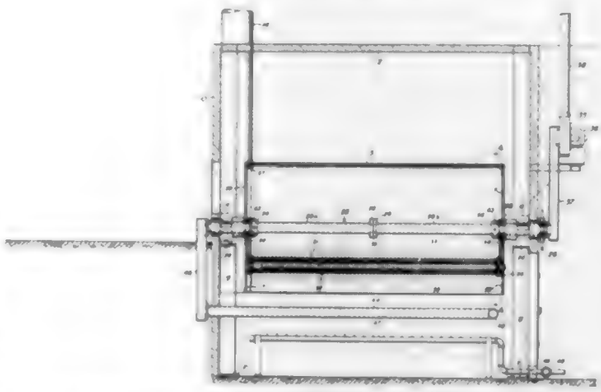
An apparatus which translates relative bubble position in a spirit level into a corresponding electrical signal. A reference light source directs light to a bubble meniscus surface from which a portion of the light, depending on the relative bubble position, is reflected onto a light sensitive detector that produces an output signal proportional to the quantity of light reflected.

3,371,425
APPARATUS FOR REDUCING THE SOJOURN TIMES IN FLUIDIZED BEDS
Fritz Glaser, Offenbach am Main, and Joachim Wentz, Hofheim, Taunus, Germany, assignors, by mesne assignments, to Vickers-Zimmer Aktiengesellschaft, Planung und Bau von Industrieanlagen, Frankfurt am Main, Germany, a corporation of Germany
Filed June 21, 1965, Ser. No. 465,683
Claims priority, application Germany, June 23, 1964, Z 10,927
11 Claims. (Cl. 34—57)



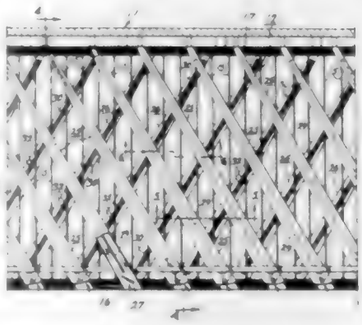
An improved method and apparatus for drying particulate solids which produces a highly uniform moisture content in the particles. A drying gas is introduced through precisely arranged orifices in the base plate of an enclosed, elongated, vertical drying chamber. The chamber contains a plurality of independent, rotatable, vertically spaced hollow rotor elements. The hollow rotor elements define a vertical column in the center of the chamber. Particulate matter is continuously introduced into the chamber adjacent the base plate and is forced upwardly in the chamber through the column defined by the hollow rotor elements. Some particles which are carried escape from the column to the sides of the chamber, cascade downward in the chamber and are re-cycled upward again. Each of the rotor elements acts as an independent fluidizing bed through which particles are re-cycled.

3,371,426
DEHYDRATING DRUM
Perry S. Martin, Harrisonburg, Va., assignor to Egg-Vi-Tein Company, Harrisonburg, Va., a partnership
Filed July 19, 1965, Ser. No. 473,135
4 Claims. (Cl. 34—134)



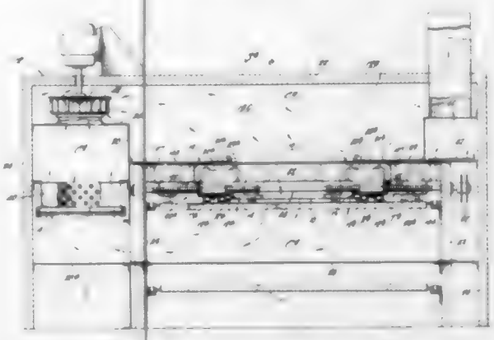
This invention relates to an improvement in devices for drying viscous masses using a heated revolving drum with means for dividing the mass into smaller portions whereby the heat is applied effectively. The device provides for an axial duct for introducing a stream of preheated air and withdrawing air with accumulated moisture. The device includes numerous additional details, among which is the use of parallel arms extending radially from the axis of the drum and a plurality of disks rolling against the interior of the drum, and means for self-cleaning the disks and for the mounting of the disks so as to render them highly efficient.

3,371,427
APPARATUS FOR PROCESSING WEB MATERIAL
John R. Thygeson, Sr., Fox Chase Manor, Pa., assignor to Proctor & Schwartz, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 14, 1965, Ser. No. 487,150
10 Claims. (Cl. 34—155)



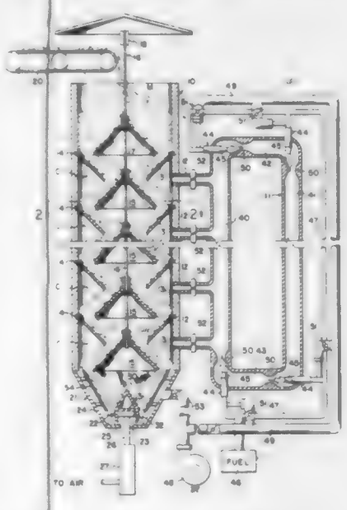
Apparatus for subjecting fabrics and similar webs to a gaseous-treating medium which affords freedom for shrinkage of the web during the treatment. The apparatus projects ribbons of gaseous medium against and substantially normal to the web both above and below the web at an acute angle to the direction of travel of the web so as to criss-cross above and below the web; in one form, the apparatus projects a series of ribbons angled to the right above the web and a corresponding series of ribbons angled to the left below the web; and in another form, the apparatus provides criss-cross intersecting ribbons both above and below the web.

3,371,428
FABRIC DRIER
John R. Thygeson, Sr., Fox Chase Manor, and Charles W. Allen, Lafayette Hill, Pa., assignors to Proctor & Schwartz, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1965, Ser. No. 481,563
10 Claims. (Cl. 34—158)



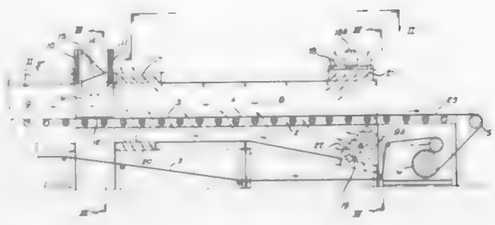
A material treating apparatus suited for drying carpeting dyed by a wet process, the apparatus consisting of a housing, conveyor means for continuously moving the carpeting along a predetermined path through the housing and conditioning means for heating and circulating a treating medium through the carpeting as it passes through the housing. The interior of the housing is divided into several chambers or compartments including a plenum chamber communicating with a conditioning chamber where the treating medium is heated, and an air return manifold below the plenum chamber. The plenum chamber has a transfer section defined by a pair of spaced apart, longitudinally extending wall portions and a pair of adjustable side walls. The side walls are adjustable so that the volume of the transfer section of the plenum chamber may be selectively varied to accommodate carpeting of various widths, the upper and lower edges of the adjustable side walls being provided with seals so that substantially all of the treating medium circulated in the housing is directed through the transfer section of the plenum chamber and the material supported on the conveyor.

3,371,429
MATERIAL PROCESSING TOWER
Boyd C. Miller and Samuel A. Cooper, Salisbury, N.C., assignors to Miller Equipment Company, Salisbury, N.C., a corporation of North Carolina
Filed May 9, 1966, Ser. No. 548,779
8 Claims. (Cl. 34—171)



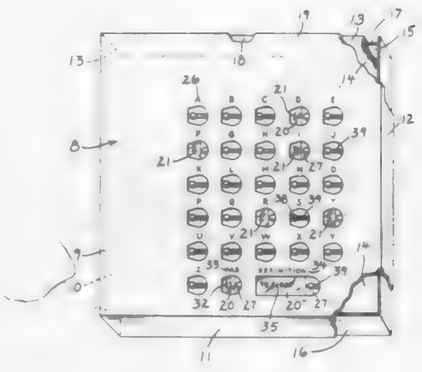
This invention relates to a material processing tower for the treatment of granular or particulate material wherein the material passes through a series of cones and funnels in a sinuous path.

3,371,430
RAPID COOLING SYSTEM FOR GLASS ANNEALING LEHRS
Edward W. Bowman, Fayette, Pa.
(279 Derrick Ave., Uniontown, Pa. 15401)
Filed Aug. 25, 1966, Ser. No. 575,017
2 Claims. (Cl. 34—217)



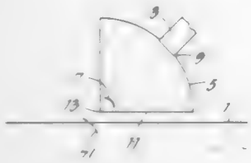
This disclosure relates to new and useful improvements in decorating and annealing lehrs for glassware and the like to provide for the rapid cooling of the ware at the discharge end of the annealing tunnel by causing the cooling medium to drift toward the charging end of the lehr in a controlled manner to obtain uniform distribution of temperature to avoid rejects or re-annealing if the temperature gradient were disturbed by load variations and the like. The improved lehr is materially shortened.

3,371,431
VOCABULARY AND SPELLING GAME DEVICE
Joseph E. White, 1330 Boilvin Ave.,
Rockford, Ill. 61103
Filed Feb. 25, 1965, Ser. No. 435,122
10 Claims. (Cl. 35—9)



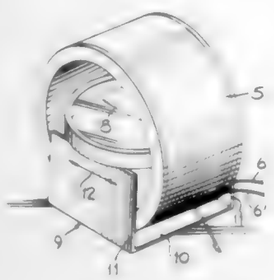
A word game having a front panel with a series of windows having slidable closures, each window having a letter of the alphabet associated therewith; a sheet receivable behind the panel and having an array of numbers thereon so arranged as to be visible through certain of the windows; the letters associated with these certain windows, when arranged in the order indicated by the visible numbers, form a word which agrees with a word definition given the user as his initial starting step. The sheet behind the panel is square and has four different arrays of numbers on each side at 90° intervals with respect to one another, so that the one sheet can be used in eight different positions, four for each side, for eight different words.

3,371,432
VISUAL SIMULATION
Noel Edward Lamb, 4 Falcon Close, Shoreham-by-Sea, Sussex, England
Filed Oct. 11, 1966, Ser. No. 585,951
Claims priority, application Great Britain, Oct. 11, 1965, 43,105/65
10 Claims. (Cl. 35—12)



1. Visual simulation equipment comprising light transmission means having a receiving end and a projection end; input means located adjacent said receiving end to receive light from a model to guide light from the model to said receiving end, said input means comprising a concave mirror to be directed at the model and a convex mirror arranged to receive light from said concave mirror and reflect this light to said receiving end; and display means optically similar to said input means and disposed to utilize light from said projection end to produce a picture of the model, said display means including a concave screen and a convex mirror located to reflect light projected from said projection end onto said concave screen on which the picture is produced.

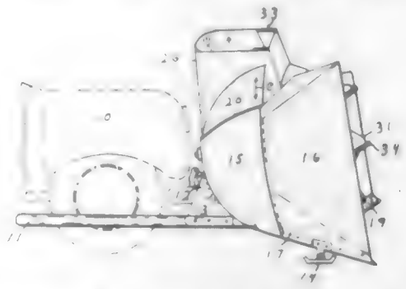
3,371,433
EDUCATIONAL GALVANOSCOPE STAND
Hyman Ruchlis and Harry Spector, Brooklyn, N.Y., assignors to Harcourt, Brace & World, Inc., New York, N.Y., a corporation of New York
Filed Nov. 9, 1965, Ser. No. 506,954
5 Claims. (Cl. 35—19)



The galvanoscope stand has a base which supports a coil of wire and a pair of upstanding legs which support a compass at the center of the coil of wire and which converge towards each other so as to resiliently abut against the coil of wire to retain the coil on the base.

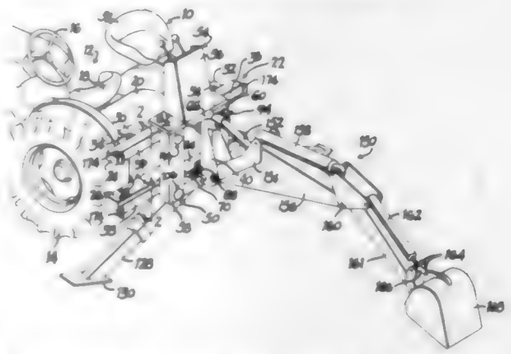
3,371,434
COMBINED ROTARY AND PUSH TYPE SNOW PLOW
Evert Wandscheer, 451 3rd Ave. NE., Sioux Center, Iowa 51250
Filed Feb. 5, 1965, Ser. No. 430,723
12 Claims. (Cl. 37—43)

A snow plow having an impeller mounted for rotation in a plane parallel to the line of travel. The impeller is mounted in an inner shell which, in turn, is pivotally mounted in an outer shell. The inner shell can, therefore, be rotated relative to the outer shell, and means is also



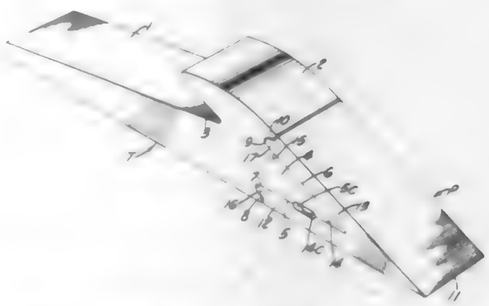
provided to pitch the inner shell relative to the outer shell.

3,371,435
SIDE-SHIFTABLE EXCAVATOR
Raymond J. Miller, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 22, 1965, Ser. No. 449,966
6 Claims. (Cl. 37—103)



A side-shiftable excavator having a stationary frame and a mobile frame. The stationary frame has a pair of slide rails supported in spaced relation which slidably receive the mobile frame. The mobile frame has means engaging the top and sides of the upper rail and only the sides of the lower rail to facilitate easy relative displacement of the two frames. Limit means are provided and will engage the bottom of the top rail upon significant upward movement of the mobile frame with respect to the fixed frame.

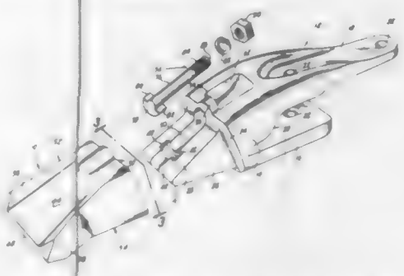
3,371,436
DIGGER TOOTH WITH REPLACEABLE POINT
Raymond W. Swanson, 14515 Cornishcrest Road, Whittier, Calif. 90604
Filed Dec. 21, 1964, Ser. No. 419,901
9 Claims. (Cl. 37—142)



A digger tooth assembly having a tooth body, a point mounted on the body for separation from the body by selective relative movement of the point with respect to the body along longitudinal and lateral direction lines of the body, and one or more removable keys disposed within keyways recessed into co-engaging faces on the

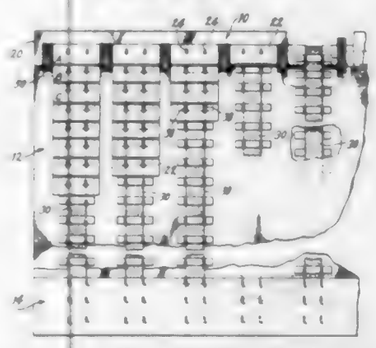
body and point and extending in acute angular relation to both the longitudinal and lateral direction lines of separation movement of the point from the body in such a way that the point is releasably keyed against both longitudinal and lateral separation from the body.

3,371,437
LOCKING DEVICE FOR DIGGER TOOTH
William W. Wilson and Robert D. La Fitte, Shreveport, La., assignors to Mid-Continent Steel Casting Corporation, Shreveport, La., a corporation of Louisiana
Filed Apr. 28, 1965, Ser. No. 451,406
4 Claims. (Cl. 37—142)



A locking device in the form of a bolt with a half round head for securing a removable digger tooth point to a supporting shank. The bolt is disposed in the shank interiorly of the assembled tooth point and shank with the head rotatable from nesting engagement in a socket in the shank to nesting engagement in a registering socket in the tooth point and the point and shank are secured together by the bolt after moving the sockets out of register.

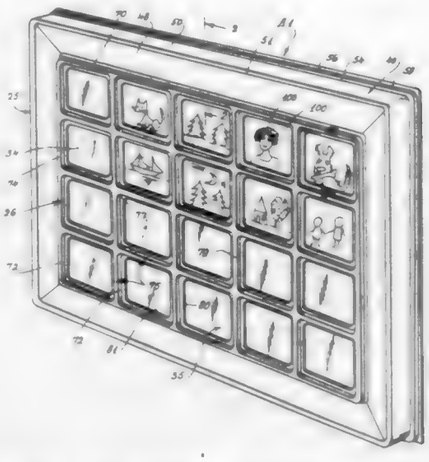
3,371,438
WORK SCHEDULING APPARATUS
Albert N. Larrington, 10 Knollwood Road, Squantum, Mass. 02171
Filed Aug. 23, 1965, Ser. No. 481,477
1 Claim. (Cl. 40—124)



Apparatus for scheduling work to be performed at a plurality of work stations comprising a production panel for identifying in process work and an inventory panel for recording the backlog of work comprising a plurality of discrete, endless belts each movably mounted for independent movement in alined relationship and means for mounting a plurality of work order cards on each of said belts.

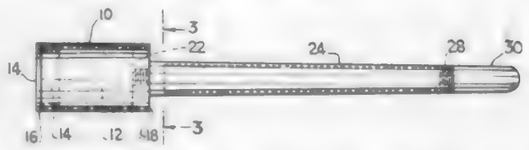
3,371,439
QUICK MOUNTING FRAME ASSEMBLY FOR PHOTOGRAPHS AND THE LIKE
Douglas J. Smith, 57 Heritage Court, Hillsdale, N.J. 07642, and Richard S. Saulsbury, Forest Hills, N.Y., (2137 Gerritsen Ave., Brooklyn, N.Y. 11229)
Filed Oct. 26, 1966, Ser. No. 589,731
17 Claims. (Cl. 40—156)

A display holder including a matrix defining a plurality of tray-like depressions each of which may receive a display element. A retainer comprising a grid defining a plurality of open frames corresponding in number to the depressions on the matrix is shaped to snap fit thereover



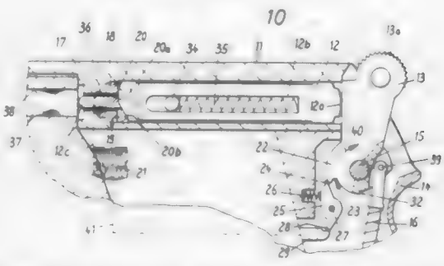
and so retain the displays in position the matrix is further provided with a flange about its perimeter by which it may be mounted in a frame.

3,371,440
ADJUSTABLE MAGAZINE PLUG
Charles Cassell, 2708 SW. 44th, Oklahoma City, Okla. 73119
Filed Mar. 24, 1967, Ser. No. 625,848
5 Claims. (Cl. 42—49)



A plug adapted to be removably inserted into the magazine of a shotgun to absorb moisture which would otherwise impair the functioning of the shotgun, and in addition when necessary, to reduce the capacity of the magazine to two shells as required by law in certain states when hunting migratory birds.

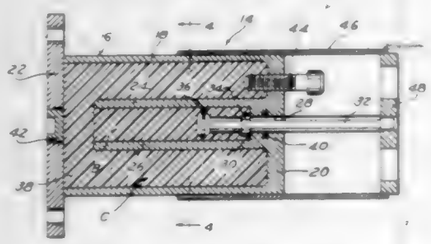
3,371,441
SAFETY MECHANISM FOR HAND FIREARMS
Fritz Walther, 4 Wettersteinweg, 79 Ulm (Danube), Germany
Filed Feb. 18, 1966, Ser. No. 528,636
Claims priority, application Germany, Feb. 25, 1965, W 38,632
6 Claims. (Cl. 42—70)



This invention broadly relates to a safety mechanism to firearms which has a safety-off and a safety-on position. The safety mechanism is comprised of a manually operated safety lever and rotatable member having at least first and second cam surfaces which confront the firearm firing pin and which lies between the forward end of the firing pin and the primer of a cartridge loaded into the firearm. Rotation of the safety lever to the safety-on position blocks the firing pin from striking the primer of the

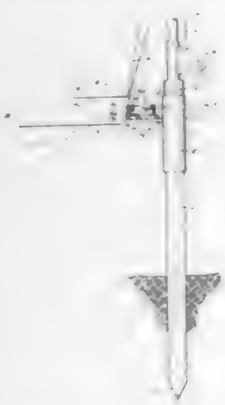
cartridge. Movement of the safety lever to the safety-off position provides sufficient clearance for the forward end of the firing pin to strike the primer of the cartridge. In moving the safety lever from the safety-on to the safety-off position, an edge of the rotatable member which joins the cam surfaces drives the firing pin rearwardly which in turn engages and rotates the firing hammer through a small angle. A safety catch provided on the firing hammer releases a spring biased trigger lever member causing it to embraced by the safety catch, locking the firing hammer into a slightly cocked position. With the trigger lever projection locked into the safety catch, any effort to fire the weapon by squeezing the trigger will be thwarted. The firing hammer must be moved to the fully cocked position before the weapon can be fired.

3,371,442
DAMPED SPRING MEANS
Robert L. Carlson, Chicago, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed Mar. 24, 1966, Ser. No. 537,206
3 Claims. (Cl. 42—74)



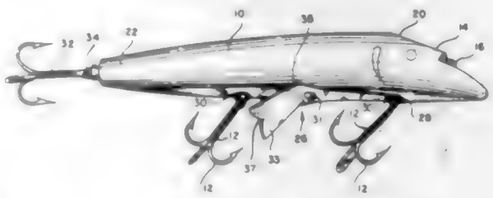
A normally extended damped spring operably connected between the relatively movable stock and buttstock boot of a shotgun or the like to absorb and dissipate the shock of recoil with the damped spring having a closed chamber filled with a compressible solid fixed to one of the relatively movable members and a piston rod fixed to the other and having a piston provided with orifice means disposed in the closed chamber, the compressible solid providing a damping and spring force on the piston as the rod moves into the chamber and reduces the volume of the compressible solid while forcing same through the orifice means with the expansion of the compressible solid after each recoil serving as the sole force for returning the damped spring to its normally extended condition.

3,371,443
FISHERMAN'S SIGNALING DEVICE
Don R. Dobson, Holden, Utah 84636
Filed Oct. 23, 1965, Ser. No. 503,160
4 Claims. (Cl. 43—17)



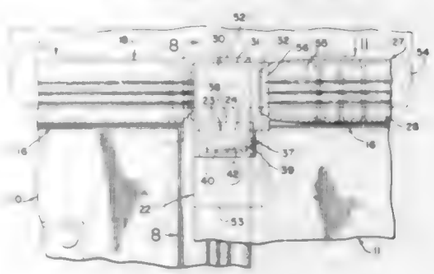
1. A fisherman's signaling device comprising:
a stake;
means adapted to receive the handle of a fishing pole carried by the stake;
a flag arm pivotally carried by the stake;
a latch arm pivotally carried by the stake, said latch arm including a bend adapted to have a fishing line passed thereunder and being adapted to hold the flag arm in a set position when the latch arm is in a lowered position and to release the flag arm to drop when it is moved to a raised position; and
means for changing the effective moment arm of the latch arm thereby changing the amount of pull required to separate the latch arm from the flag arm.

3,371,444
FISHING LURE
Oran D. Cox, 706 E. Dennison St., Appleton, Wis. 54911
Filed May 5, 1965, Ser. No. 453,338
1 Claim. (Cl. 43—42.22)



A fishing lure comprising an elongate body member having at its front end a plane surface sloping upwardly and rearwardly to produce a descending effect on the lure as it is moved through the water, and a flat triangular plate secured to the bottom of the lure with an unattached diverging base portion bent downwardly and rearwardly at an angle to produce an ascending effect on the lure to counteract the effect of the said plane surface and being capable of adjustment to various angular positions to control the depth of the lure in the water.

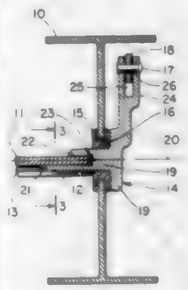
3,371,445
DOUBLE SLIDING FLUSH PLUG DOOR GASKET
Theodore Z. Herr, Highland Park, Ill., and William Hoverman, Jr., St. Marys, Ohio; said Herr assignor to The Youngstown Steel Door Company, and said Hoverman assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, both corporations of Ohio
Filed Sept. 15, 1965, Ser. No. 487,405
7 Claims. (Cl. 49—368)



Angle flap seals or gasket extensions capable of attachment to the top and bottom of the auxiliary door compression gasket of a railroad car. The compression gasket extensions are attached to the interior flange of the auxiliary door which is overlapped by the main door (when both doors are in closed position) by means of integral flap portions. The flap portions carry projection pads which are releasably received in mating apertures in the interior flange. The auxiliary door compression gasket extensions extend only a portion of the length of the interior flange of the auxiliary door and terminate in a feathered edge. The feathered edge provides a tight seal

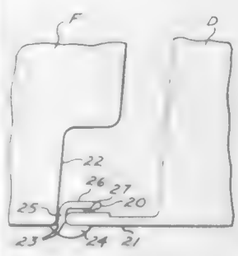
at the junction of the auxiliary door compression gasket extensions, the interior flange of the auxiliary door and the compression gasket of the main door.

3,371,446
MOUNTING MEANS FOR LOUVER BLADES
George W. Minds, Jr., 2408 Forney St., Los Angeles, Calif. 90031
Filed Aug. 2, 1965, Ser. No. 476,501
5 Claims. (Cl. 49—403)



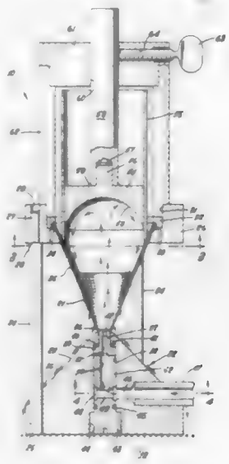
This disclosure relates to a louver assembly having a pivot means for pivotally connecting a louver blade to a frame member for pivotal movement relative thereto. The pivot means includes a one-piece, generally L-shaped pivot member having an intermediate shank portion rotatably supported by the frame member and first and second end portions extending at right angles to each other. The first end portion is connected to an actuating member and has an open ended slot therein for receiving the actuating member. The second end portion includes a pair of spaced boss portions which are tapered and which define an open ended tapered slot therebetween for receiving an end of the louver blade in wedging relationship. This securement is stabilized by ribs on the louver blade end defining a channel for receiving one of the boss portions.

3,371,447
TRIM STRIP STRUCTURES AND METHODS FOR THEIR MANUFACTURE
Charles E. Ruff, Lakewood, Stanley Gomez, Cleveland, and Norman C. Jackson, Sheffield Lake Village, Ohio, assignors to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 3, 1965, Ser. No. 429,986
10 Claims. (Cl. 49—490)



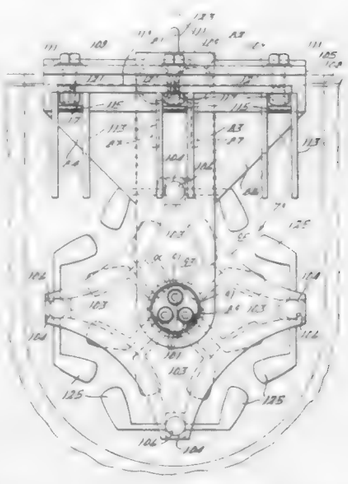
1. A trim strip structure for securing to the edge flange of an automobile door for bridging the opening between the door edge and an adjacent member, said structure comprising a channel-shaped, flexible core of sheet material having leg portions for gripping either side of the flange; said leg portions being joined at their outer ends by a central web; a flexible cover encasing said core; said cover including a bumper portion disposed substantially coplanar with one of said leg portions for mounting to the outside surface of the door flange; said bumper portion having a lip portion extending outwardly beyond said web for projecting over said opening when the door is closed.

3,371,448
APPARATUS FOR SHAPING CRYSTALLINE CARBON BODIES
Frank L. Christensen, Salt Lake City, Utah, assignor to Christensen Diamond Products Company, Salt Lake City, Utah, a corporation of Utah
Filed Mar. 19, 1965, Ser. No. 441,238
8 Claims. (Cl. 51—163)



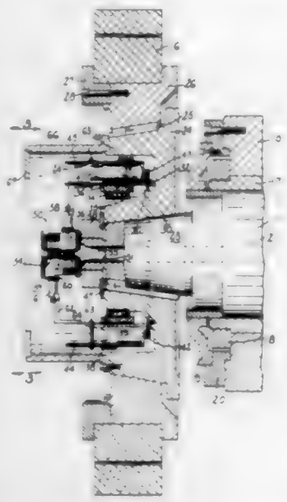
Apparatus for reshaping diamonds, in which fluid is jetted from a nozzle to carry diamonds upwardly and impact them against the generally spherical internal surface of an anvil, the diamonds dropping upon a downwardly tapering screen toward the nozzle for repeated upward impacting against the anvil, as well as against other diamonds within the screen, grits and powders resulting from the impacting action and fluid passing through the screen onto a downwardly diverging diverter.

3,371,449
VIBRATORY FINISHING APPARATUS AND METHOD
Eugene E. Olson and Harold A. Mickelson, Albert Lea, Minn., assignors to King-Seeley Thermos Company, Ann Arbor, Mich., a corporation of Michigan
Filed Dec. 27, 1965, Ser. No. 516,514
12 Claims. (Cl. 51—163)



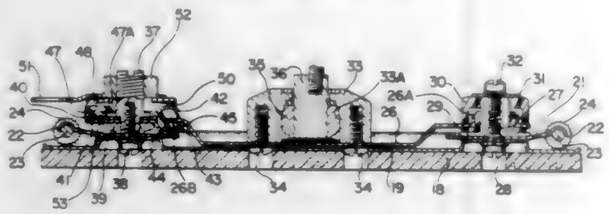
1. A workpiece finishing device comprising a tub adapted to have abrasive media dispersed loosely therein, a fixture having workpieces secured thereto and rotatably supported along a longitudinal axis within said tub, and drive means causing said tub and fixture to move in an orbital path transverse to said axis and said abrasive media to move through an orbital path within said tub thereby causing said fixture to rotate about said axis and move relative to said media.

3,371,450
APPARATUS FOR BALANCING ROTATING BODIES
Samuel S. Board, Jr., Woodbridge, Gene R. Gagliardi, Bethany, and Peter Hold, Milford, Conn., assignors to Farrel Corporation, Ansonia, Conn.
Filed Oct. 13, 1965, Ser. No. 495,569
17 Claims. (Cl. 51—169)



1. A grinding wheel assembly comprising in combination a spindle, means mounting a grinding wheel on said spindle, balancing weights in the form of first and second motors, means defining annular paths of movement for said motors coaxial with the axis of said spindle on said wheel mounting means, each of said motors having shaft-mounted means for driving said motors in said paths, and means for energizing said motors to drive said motors about said axis.

3,371,451
SHIFTING MECHANISM FOR DUAL-ACTION POWER-OPERATED ABRADING TOOL
Sherwood G. Enders, Bowley's Quarters, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Mar. 28, 1966, Ser. No. 538,004
7 Claims. (Cl. 51—170)



1. In a portable power-operated abrading tool having a housing, a platen resiliently mounted below the housing, a pivot arm between the housing and the platen, the pivot arm having a pair of ends, one of which is pivotally mounted on the platen and the other of which is free, a bearing mounted on the pivot arm intermediate its ends, and a driving eccentric journaled in the bearing along a vertical axis, whereby the pivot arm oscillates substantially in a horizontal plane above the platen, and whereby the platen has a straight-line reciprocation, the improvement which comprises:

(a) a bearing guide having a slot receiving the free end of the pivot arm;

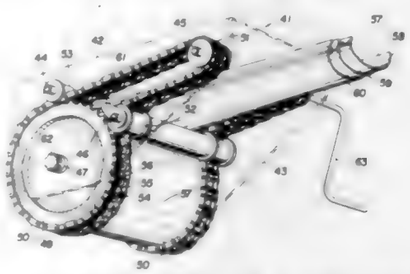
(b) means supporting the bearing guide on the platen and journaling the same for pivotal movement about a substantially horizontal axis, whereby the slot in the bearing guide angularly adjusts to the free end of the pivot arm; and

(c) means carried on the platen for selectively restraining the free end of the pivot arm against oscillation in a horizontal plane, whereby the straight-line reciprocation of the platen is converted to an orbital reciprocation.

3,371,452
DIAMOND SAW OR MILLING BLADES
Donald H. Mabey, Salt Lake City, Utah, assignor to Christensen Diamond Products Company, Salt Lake City, Utah, a corporation of Utah
Filed Feb. 8, 1965, Ser. No. 430,817
13 Claims. (Cl. 51—206)

A cutting saw device in which a circular disc is surrounded with a rim portion of matrix material having circumferentially spaced helical ridges of matrix material in which individual diamond cutting elements are embedded by being molded in and surrounded by the matrix material of the ridges.

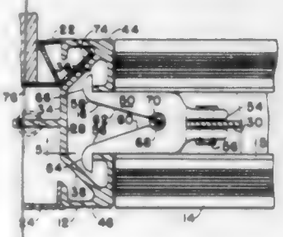
3,371,453
CASSETTE STEM DEVICE
Ernest Groskopfs, Toronto, Ontario, and John Arthur Fry, Willowdale, Ontario, Canada, assignors to The De Havilland Aircraft of Canada, Limited, Downsview, Ontario, Canada
Continuation-in-part of application Ser. No. 269,258, Apr. 1, 1963. This application Aug. 3, 1964, Ser. No. 387,163
5 Claims. (Cl. 52—108)



1. A cassette form of extensible and retractable stem device adapted to be driven during extension and retraction and comprising in combination: at least one stem strip of a length and width which when free defines a tube having a concave inner surface and of relatively small diameter as compared with its length the side edges of said strip being overlapped throughout the length of the tube and the width of said strip being greater than three times the diameter of the tube defined thereby; an inner cylindrical drum member having an axis of rotation; means anchoring one end of said strip substantially tangentially to said drum member to dispose the concave

inner surface thereof outwardly and adapting the full width of said strip to be reeled upon said drum in full contact of the convex surfaces of said strip therewith; encyclic retaining means at each end of said drum controlling the path of motion of the strip reeled on said drum through about 300 degrees of arc of a predetermined radius substantially greater than the radius of said drum and on a tangent line from one end of said arc extending in the same tangent direction as the tangential anchorage of said strip to said drum; a form roller engageable with the strip coiled between said drum and said encyclic means and located substantially at the point of tangency of said tangent line with said arc means for driving said drum for extension and retraction of said strip at the same velocity on said line of tangency; and a doctor member substantially at the nip of tangency of said strip and the coiled strip within said encyclic retaining means between the other end of said arc and said tangent line.

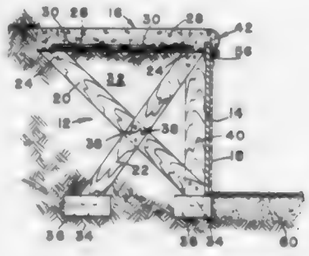
3,371,454
PARTITION STRUCTURE
Richard N. Anderson, Rome, Ga., assignor to V. E. Anderson Mfg. Co., Owensboro, Ky., a corporation of Kentucky
Filed Oct. 24, 1965, Ser. No. 504,537
12 Claims. (Cl. 52—122)



Partition structure capable of non-destructive erection including vertically extending posts and horizontally extending members having a cross section including an H-shaped central part, diagonal parts extending at forty-five degrees from the ends of the parallel portions of the H-shaped part and V-shaped parts secured at their apex to the free ends of the diagonal parts opening inwardly toward the center of the H-shaped part to define a square, a glazing channel for securing panels of different widths within the space between adjacent V-shaped parts of the cross section of the vertical posts and horizontal members, joint brackets for securing the vertical posts and horizontal members together at any location therealong at right angles to each other having a generally U-shaped elevation with diverging leg portions and a bifurcated closed end, a V-shaped recess in the other end thereof forming leg portions terminating in oppositely outwardly extending flange portions and means for varying the height of the vertically extending posts each including an adjusting block secured within the H-shaped central part of a post at the bottom thereof, a nut rigidly received in the adjusting block and a bolt extending through the nut from the bottom thereof.

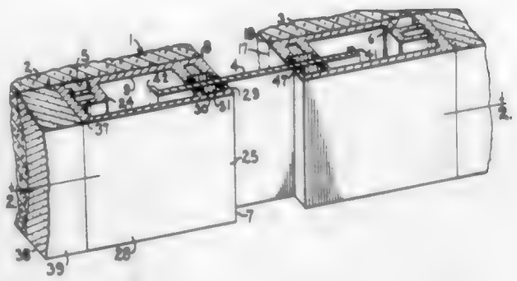
3,371,455
SWIMMING POOL STRUCTURE
George C. Fox, R.D. 3, Box 438, Dover, Pa. 17315
Filed Oct. 24, 1966, Ser. No. 588,957
10 Claims. (Cl. 52—169)

1. A swimming pool comprising sides formed from similar sheets of rigid material, means connecting the ends of said sheets together into adjoining side walls forming the interior confines of said pool, vertical studs spaced along the exterior of said wall and connected thereto, said studs being substantially coextensive with the height of said side walls, bracing means extending radially outward from each stud and comprising a pair of elongated members crossed intermediately of the ends thereof to form an X-frame positioned within a vertical plane, the upper and lower ends of said members at one side of said X-frame being connected to said studs adjacent the opposite ends thereof, a tension brace member extending between the upper ends of said members of each X-frame, footer means engaging the adjacent ground and fixed relative thereto and engaging the lower



outwardly projecting end of one of said members of each X-frame to prevent the same from moving relative to the ground, a deck extending horizontally between the upper ends of said X-frame members adjacent said tension brace members and around at least a portion of the circumference of the pool adjacent the upper edge of said side walls, and a waterproof flexible sheet liner covering the inner surfaces of said sides and extending downward from said deck and across the bottom defined substantially by the lower edge of said sides.

3,371,456
EXPANSION JOINT COVER
Claude P. Balzer, Edward M. Corman, and Almer A. Reiff, Wichita, Kans., assignors to Balco, Inc., Wichita, Kans., a corporation of Kansas
Filed June 1, 1965, Ser. No. 460,218
4 Claims. (Cl. 52—278)



This invention is in expansion joint cover structures to provide an attractive appearance at the expansion joints in building structures of monolithic concrete, concrete blocks, bricks and the like. The cover structure is such that it can be arranged with portions flush mounted relative to the surface of the adjacent wall and maintain the covering relation with the joint while permitting expansion and contraction plus right angle building movement. The cover structures are adapted to variations to cover expansion joints between building sections such as floors, floors and walls, walls and/or ceilings, and include base members for mounting on the structural members adjacent the margins thereof alongside of the joint and cover members for securing to the respective base members and cooperating therewith to define longitudinally extending openings

therebetween and an elongated plate member spanning the space between the base and cover assembly then extending through the longitudinal openings of the respective assemblies and slidable relative thereto, the structures having stop portions to limit relative movement of the plate member and the base and cover assemblies to maintain the plate member in its closing position. The structures may also include resilient members in the base and cover assemblies having slidable engagement with a plate member to resiliently retain same in the intermediate position and also resilient strips filling space between the cover members at the joint that is substantially flush with the outer face of the cover members. The expansion joint cover assemblies provide a sealing engagement with the movable portions whereby they can be mounted exteriorly or interiorly after the building structure has been completed and permit multiple directional relative movement of the building sections that the joint covered therewith.

3,371,457

STRUCTURAL PART MADE OF PLASTIC MATERIAL

Michael Wienand, Siegburg, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed Sept. 8, 1964, Ser. No. 394,657
Claims priority, application Germany, Sept. 7, 1963, D 27,520, D 27,521
17 Claims. (Cl. 52—404)

17. A structural part of plastic material for roof covers, wall coverings, or the like comprising:

plate-like structure having a plurality of edge portions and provided with approximately U-shaped hook means within the area of two edge portions extending toward opposite sides of the plate-like structure,

said hook means including free leg portions of such shape that the width of a respective hook means initially decreases slightly in the direction toward the end of the respective free leg portion and then again increases, and the width of the hook means being so dimensioned that similar structural parts may be interconnected by the hook means thereof,

the plate-like structure including two identical plate like parts combined with each other to form a structural part, each of said two identical plate-like parts being provided with a relatively wide hook means pointing toward one side and with a relatively narrow hook means pointing toward the opposite side, the outer surface of the free leg portion of a respective narrow hook means closely abutting against the inner surface of the free leg portion of a respective wide hook means with the inner and outer surfaces covering about equal area,

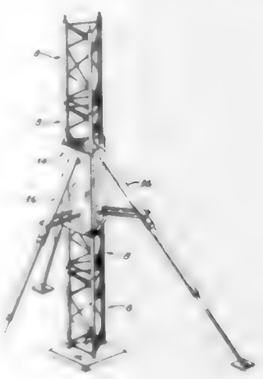
and the space between the two plate-like parts being filled with insulating material.

3,371,458

STRUCTURAL UNIT

Lester G. Sturgill, Leesburg, Va., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia

Filed June 30, 1966, Ser. No. 561,953
10 Claims. (Cl. 52—648)



1. A structural unit for building an elongated structure comprising a first section, a second section, and a third section, all of said sections being of identical configuration and each of said sections comprising:

a hollow tube having a first diameter,

a rod laterally spaced from and parallel to said tube, said rod having a second diameter less than said first diameter,

a slot longitudinally aligned through said tube and traversing the entire length thereof, said slot having a width less than said second diameter,

means for attaching said rod to said tube, said means being fixedly attached at one end to said rod and at the other end to said tube at an angular distance of 60° from said slot;

the rod of said first section being inserted into the tube of said second section such that the attaching means of said first section pass through the slot of said second section; the rod of said second section being inserted into the tube of said third section such that the attaching means of said second section pass through the slot of said third section, and the rod of said third section being inserted in the tube of said first section such that the attaching means of said third section pass through the slot of said first section.

3,371,459

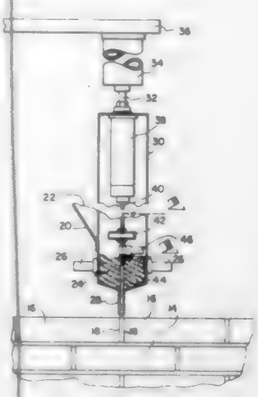
MORTAR JOINT PLACEMENT DEVICE

Paul M. Thomas, 5630 E. Edgewood Road, Phoenix, Ariz., and Lawrence W. Wright, Scottsdale, Russell W. Burge, Glendale, and Eugene E. Crile, Phoenix, Ariz.; said Wright, said Burge, and said Crile assignors to said Thomas

Filed Nov. 26, 1963, Ser. No. 326,293
10 Claims. (Cl. 52—749)

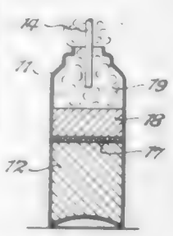
1. In a mortar joint placement device the combination of: means for holding mortar having an outlet disposed to direct mortar downwardly; a tubular structure at said outlet disposed to conduct mortar and hold mortar therein, said tubular structure of a dimension capable of being projected downwardly between spaced vertical surfaces of adjacent concrete blocks; means for moving said tubular structure upwardly and downwardly; and an ejector member disposed closely to fit the interior of said tubular

structure and means causing said tubular structure when retracted upwardly from a space between vertical spaced



surfaces of concrete blocks to move over said ejector plunger and to cause mortar to be dispensed between said adjacent vertical surfaces.

3,371,460
METHOD OF FILLING AEROSOL CONTAINERS AND THE LIKE
Joseph M. Rait, 95 Huxley Drive, Snyder, N.Y. 14226
Filed Sept. 21, 1965, Ser. No. 488,959
17 Claims. (Cl. 53—25)



5. A method of charging a container partially filled with a first liquid wherein a second low-boiling liquid is added without appreciable loss through vaporization, boil-off and frothing comprising the steps of:

(a) contacting the upper surface of said first liquid with a volatile liquid freezing means having a much lower temperature than said first liquid thereby freezing said upper surface to a relatively thin, substantially solid, frangible, meltable barrier

(b) introducing said second liquid to upper side of said barrier, said second liquid having a boiling point lower than the freezing point of said first liquid,

(c) sealing off the contents of said container from communication with the atmosphere in at least a temporary manner.

3,371,461
METHOD AND APPARATUS FOR CHARGING A PACKET OR CONTAINER WITH A FLOWABLE MATERIAL
Theodore F. Aronson, 60 Crescent Road, Glen Cove, N.Y. 11542
Filed Oct. 15, 1964, Ser. No. 404,082
21 Claims. (Cl. 53—28)

1. A method of continuously forming and filling a packet with a predetermined measured amount of flowable material comprising the steps of,

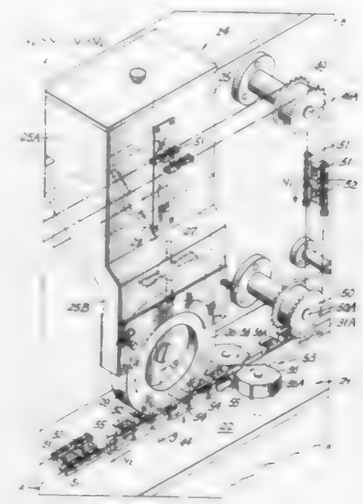
continuously folding a strip of material about a longitudinally extending fold line to define a web having reversed folds,

positioning the discharge ends of a moving line of funnels between the folds of said web,

forming said web into a plurality of connected packets by seaming the reversed folds of said web together at transversely spaced intervals between the adjacent discharge ends of said moving line of funnels,

successively charging each of said moving funnels and the connected packet associated therewith with a predetermined charge of said material,

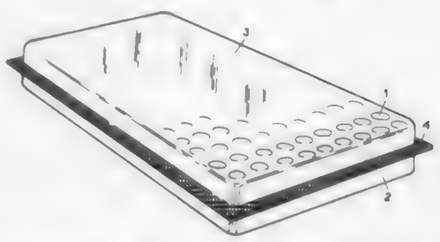
successively moving the respective funnels from their respective packets of said moving line of packets after the flowable material has passed therethrough and settled in said packet,



successively sealing the open ends of said connected packets to confine the flowable material therein by forming a continuous seal extending along the edges of the reverse folds of said web of material opposite said fold line, and

severing the endmost packet from the continuous moving line of packets after said packets have been sealed and collecting said severed packets.

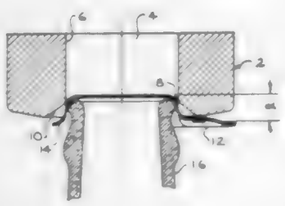
3,371,462
METHOD OF PACKING A NUMBER OF CONTAINERS IN ONE UNIT
Allan Nordkvist and Jack Nordqvist, both of Surte, Sweden
Filed Dec. 10, 1964, Ser. No. 417,305
Claims priority, application Sweden, Dec. 10, 1963, 13,678/63
5 Claims. (Cl. 53—33)



Disclosed herein is a method of packing in one unit a number of containers including placing first and second foils of heat shrinkable material above and below the containers, folding the foils toward each other and welding the periphery of the foils together. The welded together peripheral portions of the foils are heat shrunk into force-exerting relationship to the outermost containers. The foils are further heat shrunk at selected locations therein to further insure that the containers are tightly maintained within the covering so formed.

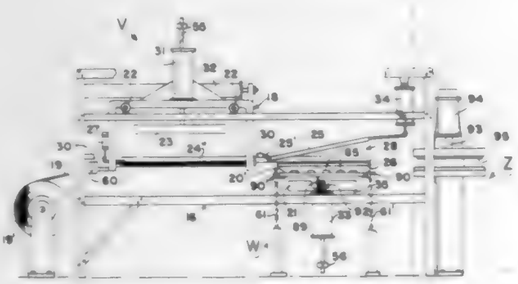
Further disclosed herein is the packaging unit formed in accordance with the above-outlined method.

3,371,463
METHOD FOR CRIMPING CROWN CAPS
George E. Roberts, New York, N.Y., assignor to United States Crown Corporation, Saddle Brook, N.J., a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,379
2 Claims. (Cl. 53—42)



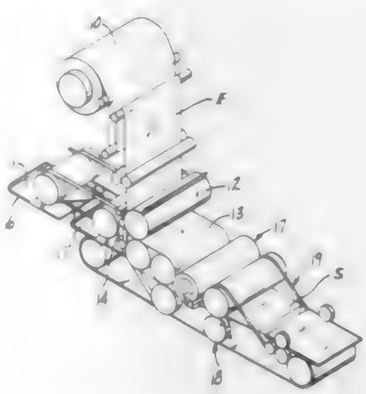
There is disclosed a method of application of forces to crimp a crown cap and/or a crown cap having an initially generally horizontally radially extending tab. The method permits the positioning of the cap in any radially oriented position on the top of the neck of the container to which it is to be crimped. There is simultaneously applied forces to the top edge of the cap and to the top of its tab at points lying on a force applying locus extending through the top edge application of force position on the cap and lying 45 to 60 degees from the vertical axis through the cap as measured in a direction below the tab and towards the container axis. Continuing with the application of these forces while applying an inwardly directed radial force around the wall of the cap to bend it in while bending the tab downwardly and into an upwardly convex shape as viewed in cross section to fully crimp the wall into locking engagement with the neck and further deform the tab downwardly and inwardly towards the container.

3,371,464
SKIN PACKAGING APPARATUS
Joseph S. Swick, 116 E. Mosholu Pkwy., Bronx, N.Y. 10471
Filed Oct. 15, 1965, Ser. No. 496,563
5 Claims. (Cl. 53—112)



1. In combination in an apparatus for skin-packaging at least one article positioned on an air-pervious card by applying vacuum action to draw a heated thermoplastic sheet atop said laden card, a frame, a vacuum box having a perforated top wall and an inlet for connection to a vacuum supply, mounted on said frame, sheet holding means on said frame, for receiving and releasably spanning a heated thermoplastic sheet, opposite and directly above said vacuum box, two endless conveyor belts positioned in spaced vertical planes on wheel means on the frame and arranged for simultaneous identical movement on said wheel means; said vacuum box being intermediate said belts and free for vertical movement therebetween, perforated trays spanning said belts, each adapted to hold a card thereon having at least one article thereon which is to be skin-packaged; said trays being equi-spaced along the entire length of said belts; one of said trays being directly intermediate and spaced from said vacuum box and sheet holding means; said belts and each tray having cooperative means locating and releasably holding the tray; each tray being liftable off said belts when on the upper flights of said belts; said vacuum box having a horizontal channel thereacross in a direction parallel to the planes of said belts; entrance down into said channel being from the top surface of the vacuum box, an element extending downwardly from the tray into said channel, means on the vacuum box within said channel adapted to engage said element upon downward movement of said vacuum box, whereby the tray is lowered; said element being free for movement into, along and out of said channel upon movement of said conveyor belts, means to raise the vacuum box whereupon the tray is lifted off the belts and raised upwardly a predetermined distance past the sheet-occupying plane in said sheet holding means and to then lower the vacuum box to its initial position whereby during such descent of the vacuum box, it will restore the tray it raised off the belts, back onto said belts, and means to move said conveyor belts a distance equal to the equi-spacing of the tray locating means on said belts.

3,371,465
FLEXIBLE COVER APPLICATOR
Frank A. Grant, San Mateo, Calif., assignor, by mesne assignments, to F. A. Grant, doing business as Hoefer Machine Works, San Francisco, Calif.
Filed Aug. 17, 1965, Ser. No. 480,359
2 Claims. (Cl. 53—333)

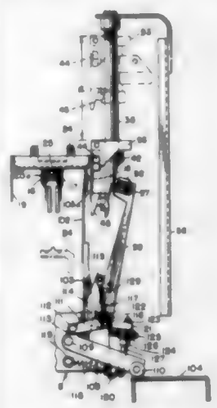


1. In a machine for applying a sheet of flexible covering material to the open top of a continuously advancing container having a projecting lip around its periphery defining leading, trailing, and side lips including means for folding and tucking leading and trailing margins of covering material under the leading and trailing lips with opposed ends of said margins untucked, the improvement comprising: a movable member mounted for circular motion about an axis traversing said tray located in line with one side lip and downstream of said folding and tucking means, the circular motion of said member being synchronized with respect to the advance of the tray so that the member moves upwardly into contact with one of said ends operative to fold and tuck said end under said one side lip.

3,371,466
WRAPPING MACHINE
King L. Klopfenstein, Prospect Heights, Ill., assignor to Triangle Package Machinery Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 19, 1965, Ser. No. 426,507
10 Claims. (Cl. 53—206)

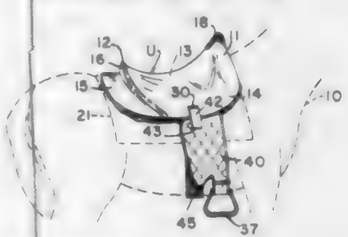
A package wrapping machine for applying a diamond wrap, wherein the package is manually prewrapped, then

placed in the machine, and the extending ends of the wrap are folded downwardly and then inwardly under



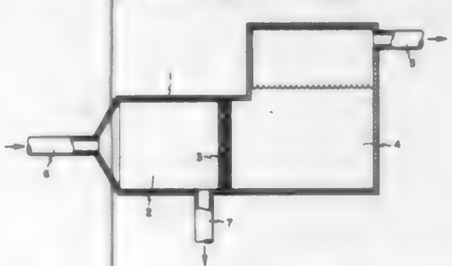
the bottom of the package and spot sealed thereto while the package is at rest in its intermittent movement.

3,371,467
SADDLE
George R. Salisbury III, Carbon County, Wyo. (Slater, Colo. 81653)
Filed Oct. 26, 1964, Ser. No. 406,380
18 Claims. (Cl. 54—44)



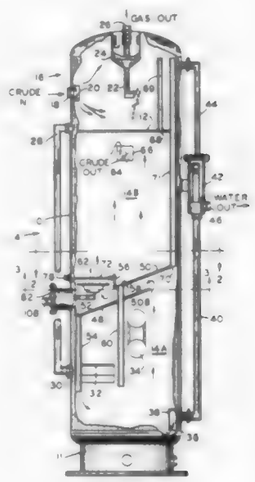
1. A saddle comprising:
a lower shell adapted to rest on the back of a horse;
an upper shell having a seat for a rider and spaced from said lower shell over a substantial portion thereof; and
means joining said shells together around the edges thereof.

3,371,468
BARRIER SEPARATOR
Joseph A. Shropshire, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Continuation of application Ser. No. 362,007, Apr. 23, 1964. This application July 8, 1966, Ser. No. 563,923
3 Claims. (Cl. 55—158)



An apparatus comprising a gas-tight container separated into two chambers by a porous barrier made up of a particulate combination of hydrophobic polymers or waterproofed asbestos and hydrophilic material such as carbon, alumina, charred wood, paper, shredded paper, or plant fibers, one chamber of which is adapted to contain an aqueous inorganic acid base or salt solution or amino acids and one chamber adapted to contain a mixture of gases, has been found to accomplish a selective separation of gaseous mixtures.

3,371,469
EMULSION TREATER
Forrest L. Murdock, 2420 E. 24th, Tulsa, Okla. 74114
Filed Oct. 18, 1965, Ser. No. 496,967
8 Claims. (Cl. 55—175)

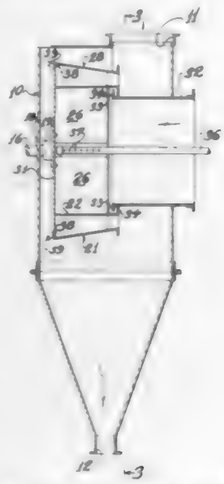


1. An emulsion treater for crude oil comprising:
an upstanding closed vessel having a water outlet adjacent the bottom thereof;
a horizontal baffle means dividing said vessel into an upper and lower quiescent chamber, said baffle being partly defined by an imperforate portion, and partly by a pair of spaced upper and lower horizontal grids through which crude oil passes flowing from said lower to said upper chamber;
means to electrically charge one of said upper and lower grids relative to the other;
a crude oil inlet in said vessel communicating with said lower chamber;
a crude oil outlet in said vessel communicating with the upper portion of said upper chamber; and
said baffle means imperforate portion being a substantially semi-elliptical planar member defined by a straight edge and an arcuate edge, the arcuate edge thereof being in engagement with the internal wall of said vessel, said imperforate portion sloping downwardly from the arcuate edge at the vessel interior wall to the straight edge adjacent the center of the vessel, and including a planar vertical support member affixed at each end thereof to the interior wall of the vessel and having the lower edge thereof affixed to said straight edge of said imperforate portion, said imperforate portion and said vertical support member defining a trough extending from wall to wall within said vessel, said upper grid being supported between said vertical support member and the interior wall of said vessel opposite said imperforate portion.

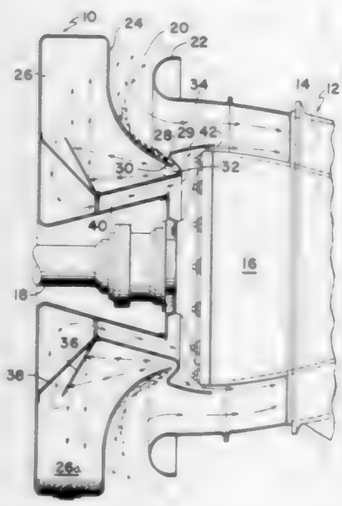
3,371,470
APPARATUS FOR SEPARATING ENTRAINED MATERIALS FROM GASES
Ellis W. Bullock, Birmingham, Ala., assignor to The Fly Ash Arrestor Corporation, a corporation of Alabama
Filed Jan. 25, 1966, Ser. No. 522,893
1 Claim. (Cl. 55—231)

Separator apparatus having a cylindrical member mounted within and spaced from an imperforate, frustoconical casing. A closure member closes the larger diameter end of the casing and the adjacent end of the cylindrical member leaving the opposite end of the casing open for gas discharge. The cylindrical member rotates with the casing and has venturi-like orifices therethrough. Vanes

divide the casing and cylindrical member into a plurality of angularly spaced compartments and openings adjacent the larger diameter end of the casing discharge materials separated from gas.

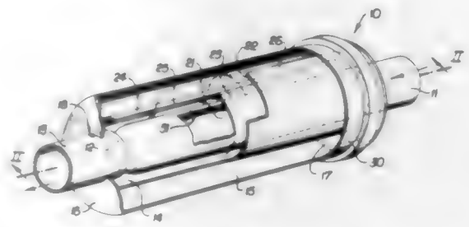


3,371,471
SAND AND DUST COLLECTOR FOR ENGINE AIR INLETS
Harold D. Connors, Milford, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,287
2 Claims. (Cl. 55—306)



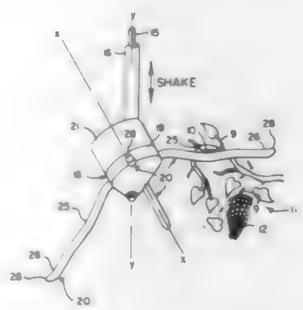
A means to separate and collect foreign particles from air entering air inlets to gas turbine engines. The air passage to the engine air inlet is provided with a curved wall positioned to receive air and particle contact. Adjacent an inner edge of this wall an adjacent wall is provided to direct separate particles and a portion of the air into an adjacent collection region and into an auxiliary air passage to complete the separation. The auxiliary air passage provides a carrying air stream allowing the main stream to continue, the auxiliary stream to be again directed into the inlet after foreign particle separation is completed. The projecting wall serves not only as the means to collect and deflect separated particles but also has an extending portion inside the collection region serving to form a part of an auxiliary passage. An extending portion of this wall toward the air inlet forms one wall of the air passage carrying a major portion of the air flow entering the engine and serves also as a portion of the auxiliary air channel exhausting air into the main flow passage thereby to induce air flow in the auxiliary passage.

3,371,472
SPARK ARRESTER
John Krizman, Jr., 10549 Monogram Ave., Granada Hills, Calif. 91344
Filed Dec. 8, 1965, Ser. No. 512,457
3 Claims. (Cl. 55—399)



A spark arrester for internal combustion engines, having axially aligned inlet and outlet tubes, the inlet tube having a closed end extending into a casing, and a spiral spark arrester around the inlet tube in the casing arranged to receive a portion of incoming gases, and means for passing another portion more desirably to the outlet tube to preclude buildup of excessive back pressure.

3,371,473
MECHANISM FOR HARVESTING FRUIT FROM VINES
Charles G. Burton, Lewiston, N.Y., assignor to Chisholm-Ryder Company, Inc., Niagara Falls, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 449,974, Apr. 22, 1965. This application Nov. 28, 1966, Ser. No. 597,325
4 Claims. (Cl. 56—330)



In harvesting grapes a hub freely rotatable about an upright axis has been moved along the cordon wire and reciprocated or shaken generally vertically and provided with fixed radial arms which successively walk through the vines from the side and engage the underside of the wire. The present improvement is in the shape of these arms to retain engagement with the bottom of the wire for a longer time, this being accomplished by making their upper sides of longitudinally undulating form. By cordon wire is meant the generally horizontal wire supported by and generally parallel with the grape posts to which the cordons or trunks of the vines extend and along which the canes are trained.

3,371,474
METHOD AND APPARATUS FOR FORMING ARMORED CABLES
William E. Bowers, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Apr. 21, 1966, Ser. No. 544,156
10 Claims. (Cl. 57—15)

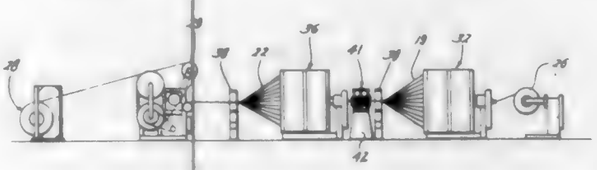
1. An apparatus for making armored cable having at least two oppositely wound spiral layers of armor wire

strands surrounding a central core, comprising in combination:

payout means for paying out the central core along a predetermined line of travel;

cable take up means spaced apart from the payout means and along the line of travel for pulling the core along said line of travel;

first wrapping means spaced between the payout means and the take up means for applying a first layer of armor wire strands about the core in a first spiral direction;



a second wrapping means spaced between the first wrapping means and the take up means for applying a second superposed layer of armor wire strands around the first layer in a generally opposite spiral direction;

and pulling means mounted between the first and second wrapping means for pulling on the core and first layer of armor wire strands in the direction of travel thereof, to thereby reduce tension force thereon as the cable passes thereby.

3,371,475

BULKY, HIGH-STRENGTH POLYETHYLENE TEREPHTHALATE YARNS

Adly Abdel-Moniem Gorrafa, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,788

4 Claims. (Cl. 57—140)

A spun yarn of polyethylene terephthalate having a twist multiplier of from 1.4 to 2.0 and consisting of textile fibers of less than 2.0 denier per filament having measured staple lengths of from 2.25 to 3.0 inches. Blends of polyethylene terephthalate with minor portions of rayon and with minor portions of cotton are also disclosed. The yarn possesses high bulk and covering power with a good degree of strength.

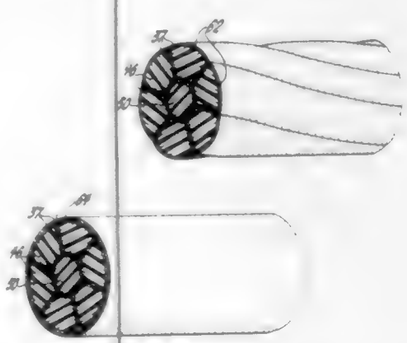
3,371,476

GLASS PLASTIC ROPE

Robert B. Costello and Gilbert B. Graham, Santa Barbara, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 2, 1965, Ser. No. 445,160

4 Claims. (Cl. 57—149)



The present invention is a glass rope having untwisted strands which are first coated with a lubricant and then with a thermosetting resin. The thus formed strands are then curved and twisted about a core to form a rope.

3,371,477

MANUFACTURE OF TEXTILE PRODUCTS IN THE FORM OF THREADS, CORDS, ROPES AND OTHER SIMILAR ARTICLES FROM FILMS OF ORIENTED SYNTHETIC LINEAR POLYMERIC MATERIAL

Pierre Felix, Miribel, France, assignor to Societe Rhodiaceta, Paris, France, a French body corporate

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,914

Claims priority, application France, Feb. 12, 1965, 5,397

10 Claims. (Cl. 57—157)

1. A process for the manufacture of textile products in the form of threads, ropes, cords and like articles, which comprises fibrillating an oriented film of a linear synthetic polymeric material by vigorously projecting onto the film, while it is stretched out and under tension, at least one jet of fine solid particles, and twisting the resulting fibrillated film.

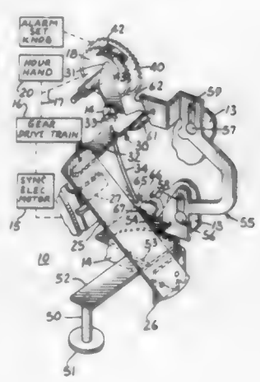
3,371,478

ALARM CLOCK HAVING TOUCH TYPE SHUT-OFF

Ralph C. Robinson, Athens, Ga., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware

Filed Nov. 10, 1966, Ser. No. 593,350

3 Claims. (Cl. 58—21.15)



An electric alarm clock including a shut-off arrangement in which slight downward pressure on the housing actuates a blocking lever which coupled to a vertical slide and an alarm control lever shuts off the alarm.

3,371,479

HYDROSTATIC TRANSMISSION AND CONTROL THEREFOR

Robert E. Yapp, Solihull, and Edward G. Metcalfe, Cubbington, Leamington Spa, England, assignors to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles, a corporation of the Netherlands Antilles

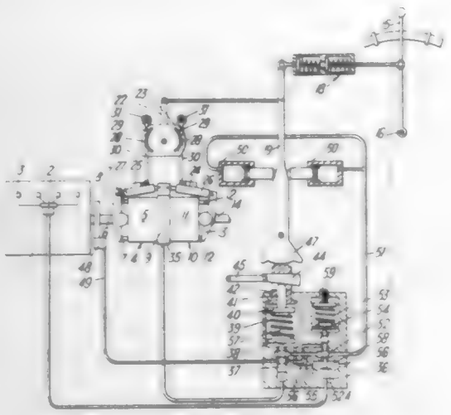
Filed Jan. 19, 1966, Ser. No. 521,717

Claims priority, application Great Britain, Jan. 28, 1965, 3,868/65

9 Claims. (Cl. 60—19)

A hydrostatic transmission having a control to reduce the speed ratio during overload including a servo system

responsive to the drop in pressure across the transmission motor. Compensation means are provided to correct for



the fact that the pressure drop across the motor varies with the speed ratio at any given torque value.

3,371,480

ONE AND ONE-HALF STAGE SPLIT TURBINE CONSTRUCTION

Jules E. Page, Wapping, and Harold E. Rock, Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed June 16, 1966, Ser. No. 558,090
6 Claims. (Cl. 60—39.16)

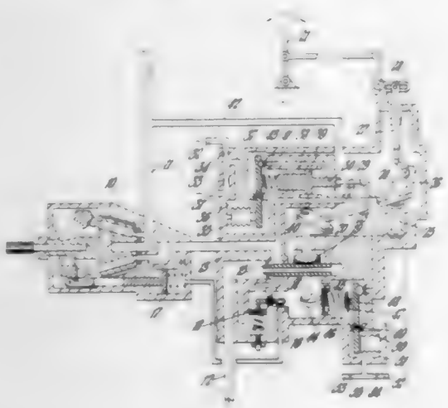
A one and one-half stage split turbine construction wherein the turbine operates efficiently at full power and wherein the turbine efficiency is maximized at the partial admission condition when alternate gas generators are shut down.

3,371,481

FUEL SYSTEMS FOR GAS TURBINE ENGINES

Eugene Harold Warne, Shirley, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Nov. 8, 1966, Ser. No. 592,901
4 Claims. (Cl. 60—39.28)



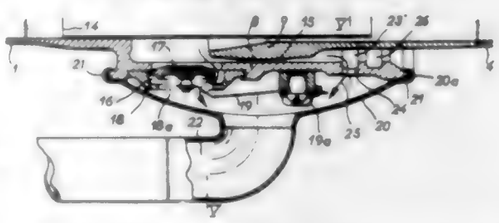
1. An acceleration control for a gas turbine engine fuel system comprising a throttle, a manual control for the throttle, a further device also for controlling the throttle, said further device being responsive to changes in pressure conditions within the engine with which the system is associated, a cam connected to the throttle so as to be movable therewith, a spring acting between the cam and a valve member, means responsive to changes in the speed of the engine and acting upon the valve member in opposition to the spring, the valve member being arranged to modify the response of said pressure conditions upon the further device for controlling the throttle.

3,371,482

JET PROPULSION CASINGS HAVING FUEL DRAINAGE MEANS

André Alphonse Médéric Léon Camboulives, Billancourt, Seine, and Roger Alfred Jules Vandenbroucke, Antony, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France

Filed June 10, 1966, Ser. No. 556,613
Claims priority, application France, June 14, 1965, 20,686
10 Claims. (Cl. 60—39.32)



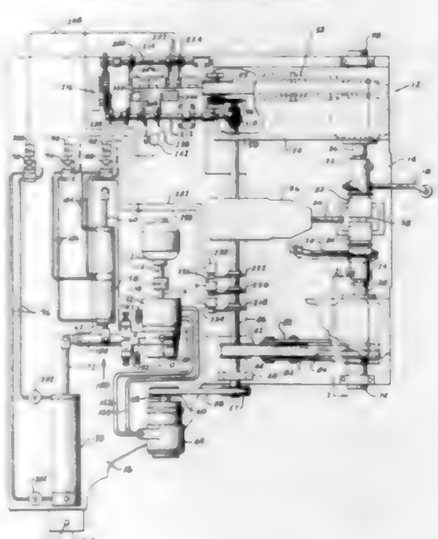
An articulated joint between ducts forming the joining elements of an outer casing for a jet propulsion unit, having fuel recovery means comprising a drainage orifice forming a valve seat in a lower portion of the female flange of the joint, a valve member which is applied against the seat by the pressure prevailing in the ducts when the unit is running, against the action of a biasing force, and a sump device for receiving liquid fuel flowing through the valve seat.

3,371,483

HYDRAULIC CONTROL SYSTEM

Robert C. Gray, New Carlisle, and Lawrence A. Shively and Otto F. Steinke, Dayton, Ohio, assignors to The Globe Tool and Engineering Company, Dayton, Ohio, a corporation of Ohio

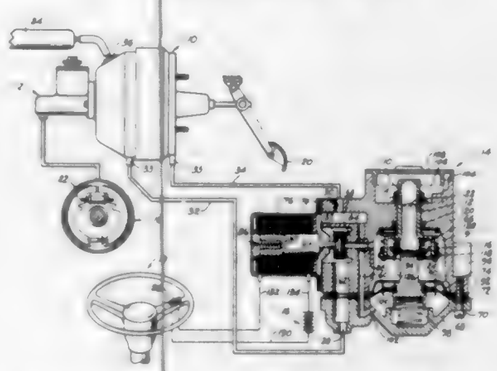
Filed May 23, 1966, Ser. No. 552,006
16 Claims. (Cl. 60—53)



1. In a winding machine, a drive mechanism comprising: a rotatable shaft; a hydraulic motor having an output shaft drivingly connected to said rotatable shaft; a

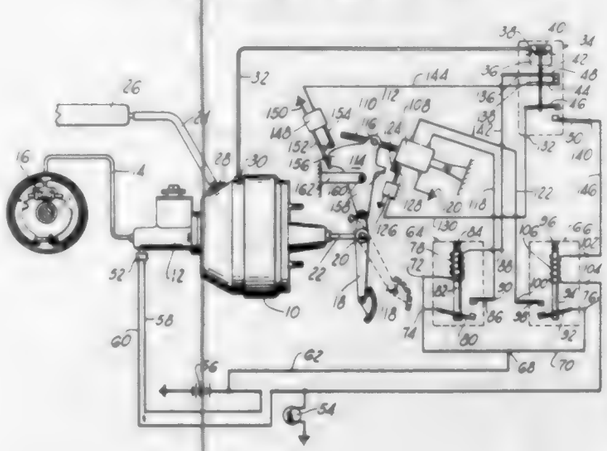
hydraulic pump hydraulically connected to said motor, said pump including a rotatable control stem which may be rotated about a predetermined axis to vary the speed and direction of rotation of said motor; a speed control device including a control lever connected to said stem, first means for selectively rotating said lever through a predetermined angle about said axis in either one direction or the opposite direction about said axis, and second means for rotating said lever through an additional angle in at least one of said directions; and means including switch means operating in response to rotation of said rotatable shaft controlling the operation of said first means and said second means.

3,371,484
PEDAL AND BUTTON ACTUATED BRAKE SYSTEMS
Thomas M. Julow, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 14, 1966, Ser. No. 533,885
5 Claims. (Cl. 60—54.5)



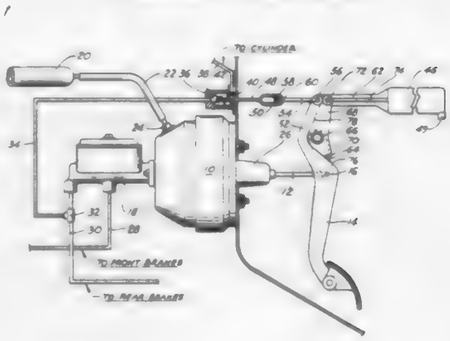
A remotely controlled valve operatively connected to a mechanically operated servomotor having tandem movable walls at least, which valve has means to sense the control chamber pressure for one of the walls as a reference to operation of the other of the walls.

3,371,485
MEANS TO VARY TRAVEL FOR AN OPERATOR-CONTROLLED LEVER OR PEDAL
Robert E. Reichard, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed July 15, 1966, Ser. No. 565,492
8 Claims. (Cl. 60—54.5)



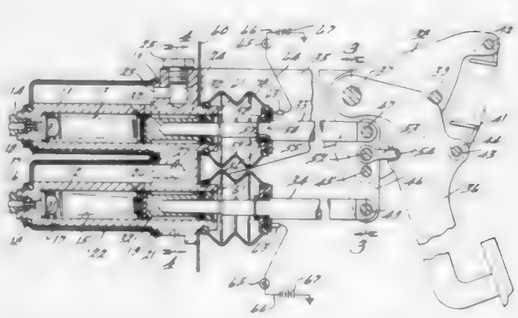
8. A brake mechanism comprising:
a fluid pressure servomotor including a push rod;
a first means pivotally connected to said push rod intermediate the ends of said means, one end of which is provided with an operator control member;
a pivotally mounted second means having an end connected to the other end of said first means;
a reversible motor having a means to change rotary motion to linear motion connected to said second means at another end thereof; and
actuating means for said motor sensitive to actuation of said push rod and pressure within said servo motor.

3,371,486
BRAKE PEDAL MOUNTING MEANS
Robert R. Hager, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 581,996
9 Claims. (Cl. 60—54.5)



1. A mounting means for an operator-operated control member, said means comprising:
a shaft;
a first lever pivotally mounted on said shaft, said first lever having an abutment surface depending from said shaft and an oppositely extending leg;
a second lever fixed on said shaft;
a third lever pivotally connected to said second lever; and
an actuator having a housing and an actuator rod, said housing being connected to said third lever and said rod being connected to said first lever.

3,371,487
DIVIDED MASTER CYLINDER
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware
Filed Aug. 15, 1966, Ser. No. 572,360
12 Claims. (Cl. 60—54.6)

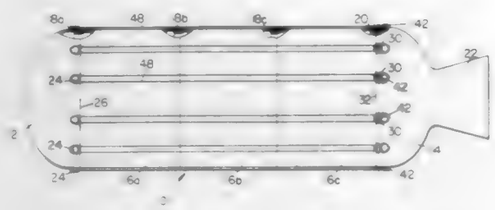


1. In a pressure generating device for a dual master cylinder which is capable of applying differential pressure to the front and rear brake cylinders, a support for a pivot on which a foot pedal is movable, lever means supported on said pivot and engageable with said foot pedal, spring means normally retaining said lever means in engagement with said foot pedal when initial force is applied to the latter, and means actuated when the force applied to the foot pedal is great enough to overcome the spring means for applying a differential pressure to the front and rear brake cylinders.

3,371,488
SEGMENTED ROCKET MOTOR

James R. Turner, Ogden, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Feb. 23, 1966, Ser. No. 529,497
3 Claims. (Cl. 60—200)

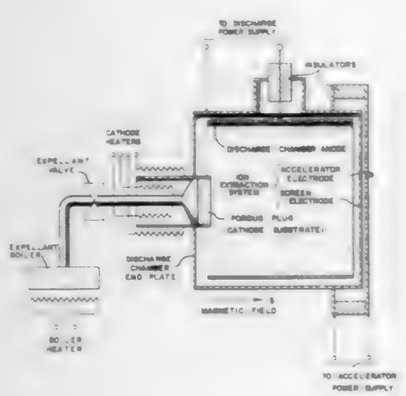


1. A rocket motor comprising a tubular casing, a forward end closure the peripheral edge of which matingly abuts one end of said casing, an aft end closure the peripheral edge of which matingly abuts the other end of said casing, said aft end closure having at least one thrust nozzle mounted thereon, a plurality of first support lugs fixedly mounted on the exterior surface of one of said end closures and spaced circumferentially thereof, a plurality of screws rotatably mounted on the exterior surface of the other of said end closures and spaced circumferentially thereof, a plurality of second support lugs respectively mounted on said screws, and a plurality of cables each attached to one of said first support lugs and to one of said second support lugs, whereby said screws can be turned to move said second support lugs away from said first support lugs to thereby secure said end closures fixedly to said casing.

3,371,489
POROUS-PLUG LOW WORK-FUNCTION FILM CATHODES FOR ELECTRON - BOMBARDMENT ION THRUSTORS

Wilfried O. Eckhardt, Malibu, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 23, 1964, Ser. No. 406,078
7 Claims. (Cl. 60—202)

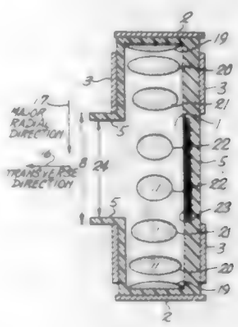


A cathode for use in an electron bombardment ion engine comprising a porous plug of tungsten and means for feeding cesium therethrough to produce a thin film of cesium thereon. The plug is heated sufficiently to thermionically expel electrons therefrom and to evaporate cesium atoms therefrom but not sufficient to expel cesium ions therefrom. This porous plug thus acts both as the source of ionizing electrons and as the supply for neutral propellant atoms.

3,371,490
MAGNETODYNAMIC PLASMA ACCELERATOR DEVICE

Ralph L. Haslund, Mercer Island, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Continuation-in-part of application Ser. No. 283,867, May 28, 1963. This application Nov. 17, 1966, Ser. No. 595,239
3 Claims. (Cl. 60—202)

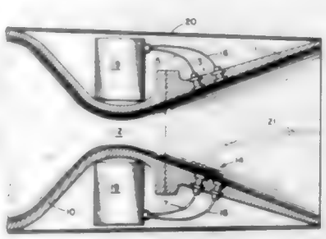


A pulsed induction plasma accelerator is described wherein separate means are used to form the plasma and to impart an accelerating force to it. The structural means defining a gas ionization chamber having an axis of symmetry has a plurality of circular bands through which a time varying primary current is passed. The primary current induces an electric field which causes the ionization of a neutral gas contained within the ionization chamber, changing that gas to a current conducting plasma. Due to the interaction of the plasma current with the primary magnetic field, with its self magnetic field, and with its self-induced electric field, the plasma contracts about the axis of symmetry and is finally accelerated out of the chamber under the influence of a separately energized acceleration coil. The acceleration coil is positioned such that when energized, it generates a planar radial magnetic field in the vicinity of the contracted plasma and extending radially outward from the axis of symmetry of the ionization chamber.

3,371,491
THRUST DIRECTION MODIFICATION MEANS

George R. Pinter, Hicksville, N.Y., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Mar. 9, 1966, Ser. No. 532,981
8 Claims. (Cl. 60—230)



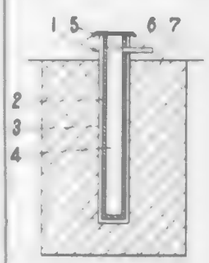
1. A reaction propulsion motor comprising: (a) a combustion chamber for burning fuel and producing combustion gases, (b) a convergent-divergent exhaust nozzle operably associated with said combustion chamber for receiving said combustion gases and to accelerate said combustion gases to supersonic velocities, and (c) means for electrically heating a portion of the inner surface of said exhaust nozzle so as to create a disturbance in the region adjacent to the area heated resulting in a shock wave which produces a controllable deviation from straight line flight.

3,371,492

FOUNDATION UTILIZING OSMOTIC PRESSURE

Tadashi Mise, 1, 1-chome Yatabecho-Nakadori, Yata, Higashisumiyoshi-ku, and Takeo Suzuki, 283–9 Kidocho, Kawachinagano-shi, both of Osaka, Japan

Filed Aug. 31, 1965, Ser. No. 484,001
Claims priority, application Japan, Sept. 5, 1964, 39/50,931; Mar. 2, 1965, 40/12,003; Mar. 15, 1965, 40/15,178
7 Claims. (Cl. 61—10)



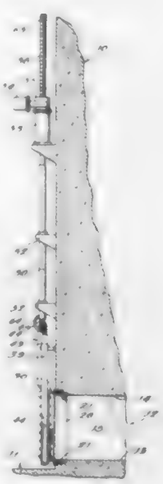
Method and apparatus for soil stabilization comprising inserting a drain chamber into water containing soft clay ground. Water in soil is drained from the soft clay ground through a semi-permeable membrane forming part of the drain chamber into the interior of the drain chamber due to the effect of the difference of osmotic pressure across the membrane. The drain chamber comprises a semi-permeable membrane surrounding a supporter, and has an aqueous solution of a water soluble solute in the interior of the chamber.

3,371,493

SLUICE GATE WITH INFLATABLE RUBBER SEAL

William J. Woolley, Oak Park, Ill., assignor to Henry Pratt Company, a corporation of Illinois

Filed Dec. 14, 1964, Ser. No. 418,052
3 Claims. (Cl. 61—28)



1. A sluice gate structure for attachment to an exposed face of a thimble mounted in a wall, comprising:

a guide and closure unit having a pair of spaced upright guide rails and a closure loosely mounted for movement transversely of the faces of said closure and for linear movement between and along the guide rails, one face of said closure having a flat face immediately inside the guide rails and surrounding the central portion of the closure, said guide rails having stop means engageable with the face of said closure opposite said one face to limit the movement transversely of said flat face when the closure is positioned to seal against fluid flow;

a tubular base structure having an internal flow passage for fluid and outwardly extending structural parts for receiving said guide and closure unit, said guide rails being removably attachable to the base structure with externally operable attachment means, said base structure having a flange with an abutment face surrounding said passage and directly facing said flat face when the closure is positioned to seal the fluid flow;

an inflatable seal member carried on at least one of the closure flat face and the flange abutment face and extending peripherally of the flow passage inside said rails, said seal being inflatable when the closure is positioned over the passage to seal the periphery of the passage between the closure and base structure;

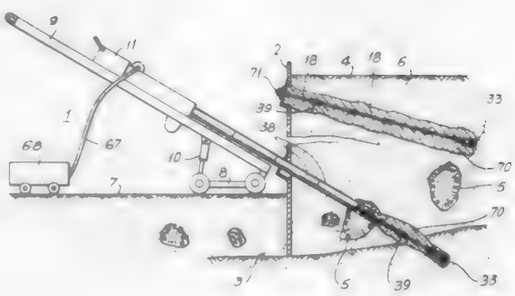
and externally operable attachment means for securing said base structure to said thimble to align said fluid passage with the thimble and position said guide and closure unit in position to open and close said passage.

3,371,494

METHOD AND MEANS OF ANCHORING AN OBJECT IN THE GROUND

Gunnar Lagerström, Ektorp, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden

Filed Feb. 4, 1966, Ser. No. 525,068
12 Claims. (Cl. 61—39)



A method and apparatus which provides for the installation of tie anchoring and/or reinforcing rods in soil adjacent construction areas such as building foundations which includes utilizing a rotative and/or percussive power feed to drive a drill rod string carrying a rod anchor into the soil and capable of penetrating rock therein and a drill tube string enclosing the drill rod string and having an outer diameter less than the rod anchor; with the combined drill rod string and drill tube string providing means for injecting washing fluid to said anchor during drilling and means for injecting grouting into the drilled hole through the tube string and out the lower end thereof around the drill rod string and anchor while simultaneously withdrawing the tube string from the drilled hole.

3,371,495

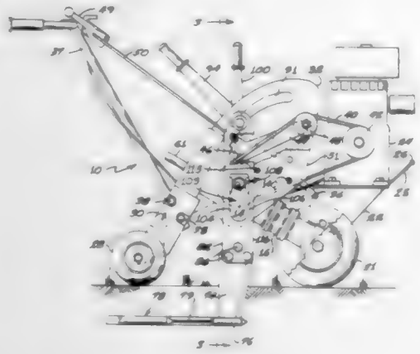
CONDUIT EMBEDDING MACHINE

William C. Kaercher, Jr., Minneapolis, Minn., assignor to Gamma, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed Oct. 22, 1965, Ser. No. 501,103
18 Claims. (Cl. 61—72.7)

A pair of oscillatory arms are suspended from a shaft mounted on a wheeled chassis. An eccentric bearing assembly, one for each arm, is rotated between forwardly and rearwardly spaced cam blocks on the arms so as to impart oscillatory motion to said arms. A thin blade extends vertically downwardly from a transverse stress bar and has integrally affixed to its lower end a tunnel-form-

ing member. A flexible cable extends rearwardly from the tunnel-forming member and connects with the conduit to be embedded in the ground. The arms, together with the vertical blade and the tunnel-forming member, can



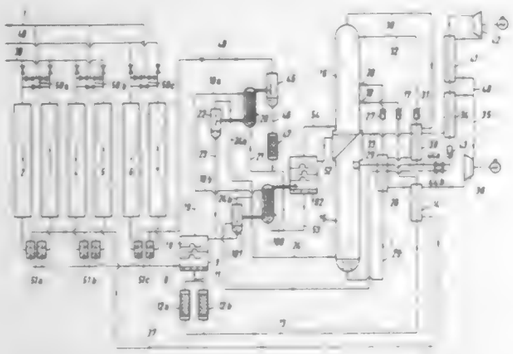
be raised by reason of the vertical movement made possible by the eccentric assembly and the spaced cam surfaces against which the eccentric assembly bears when imparting oscillatory motion to the arms.

3,371,496

WASH LIQUID PRODUCTION BY HEAT EXCHANGE WITH LOW PRESSURE LIQUID OXYGEN

Max Seidel, Munich-Solln, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany

Filed July 27, 1964, Ser. No. 385,426
24 Claims. (Cl. 62—13)



1. A process for producing gas of 70–98% oxygen purity in a double rectifier having a high pressure column and a low pressure column, comprising the steps of:

(a) conducting compressed air to be fractionated through regenerators in indirect heat exchange with fractionation products;

(b) conducting cooled gaseous air to a prewashing column and washing the air with liquid air enriched in oxygen;

(c) withdrawing liquid preliminary product from the sump of the low pressure column to an intermediate partial vaporization zone and partially vaporizing said preliminary product into a first liquid fraction and a first vapor fraction;

(d) recycling said first vapor fraction to the bottom portion of the low pressure column;

(e) conducting said first liquid fraction to a final partial vaporization zone separate and distinct from said intermediate partial vaporization zone to partially vaporize said first liquid fraction to obtain a second liquid fraction and a second vapor fraction;

(f) conducting partial vaporization of at least one of steps (c) and (e) in indirect heat exchange with washed cold gaseous air from step (b) to partially condense same;

(g) recycling resultant liquid from partially condensed air as washing liquid to said prewashing column; and

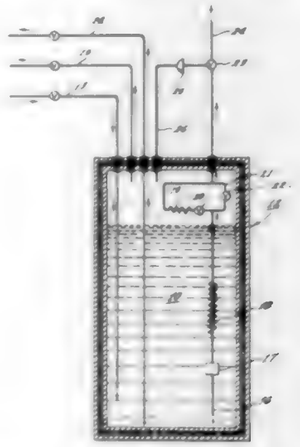
(h) conducting resultant loaded washing liquid to the low pressure column.

3,371,497

MAINTAINING CONSTANT COMPOSITION IN A VOLATILE MULTI-COMPONENT LIQUID

Alan H. Singleton, Emmaus, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

Filed Aug. 5, 1966, Ser. No. 570,626
5 Claims. (Cl. 62—45)



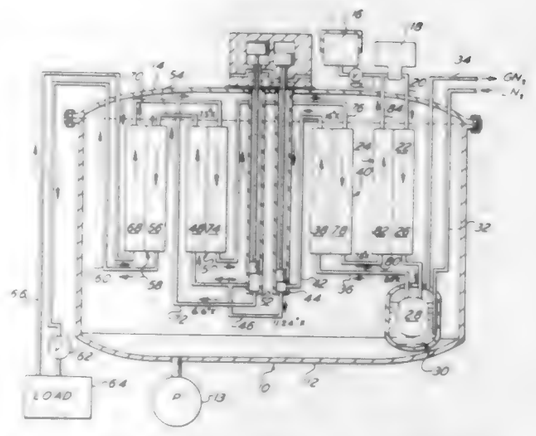
A method and system is described for maintaining a multi-component cryogenic liquid of constant composition during extended periods of storage in a vessel. The system includes a pressure-responsive relief valve through which an expanded and vaporized fraction of the stored liquid is vented thereby precluding preferential vaporization of the lower boiling point component due to unavoidable heat leak into the vessel.

3,371,498

CRYOGENIC REFRIGERATOR

Charles B. Hood, Jr., Columbus, Ohio, assignor to CVI Corporation, a corporation of Ohio

Filed Dec. 12, 1966, Ser. No. 601,070
4 Claims. (Cl. 62—45)



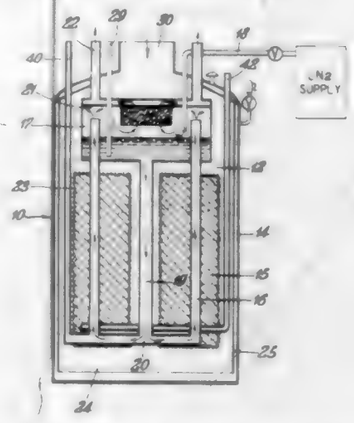
A cryogenic refrigerator capable of generating temperatures in the vicinity of the boiling point of liquid helium (4.2° K.) with efficient power input for a given load (4.7 B.t.u./lb. of helium flow). Cooling is attained by a combination of expansion and heat exchange. A pair of expansion devices is provided with all flow going through the first expansion device and less than half of the flow passing through the second expansion device.

3,371,499

CRYOSORPTION VACUUM PUMPING SYSTEM

Gerard F. Hagenbach, Tonawanda, N.Y., and Domingo Cheng, Los Altos, Calif., assignors to Union Carbide Corporation, a corporation of New York

Filed Nov. 2, 1966, Ser. No. 591,552
8 Claims. (Cl. 62—55.5)



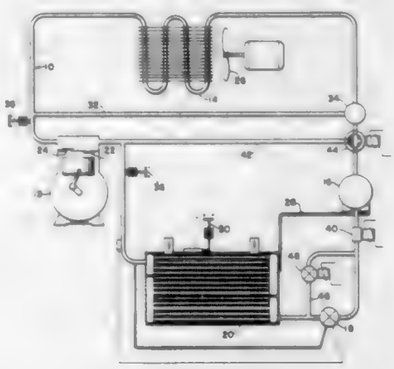
1. A cryosorption vacuum pumping system comprising the combination with a cryosorption vacuum pump including adsorbent material, means having extended heat transfer surfaces embedded therein, said pump also having a fluid refrigerant conduit in thermal contact with said extended surfaces, and a gas leak-tight casing therefor having a pumping port in communication with said adsorbent material; of a reservoir for liquid refrigerant located wholly within said casing, means for supplying liquid refrigerant through the wall of said casing to said reservoir, means providing communication for such refrigerant between the reservoir and said fluid conduit, and means for venting vapor from said conduit through said wall of the casing.

3,371,500

REFRIGERATION SYSTEM STARTING

Roy F. Marcus, Jr., Onalaska, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin

Filed May 13, 1966, Ser. No. 549,839
17 Claims. (Cl. 62—117)



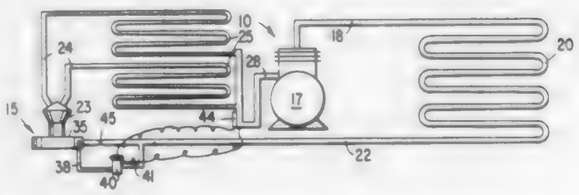
15. In a refrigeration system having a closed refrigerant circuit including a compressor means, condenser means, receiver means, throttling means, and evaporator means connected respectively in series and means for discontinuing operation of said compressor means in response to a predetermined minimum pressure in a portion of the refrigerant circuit, the method of starting said compressor means when the pressure in the condenser means is insufficient to raise the pressure in said portion of said refrigerant circuit to said predetermined minimum pressure including the steps of: interrupting fluid communication between said condenser means and receiver means; passing refrigerant gas from said evaporator means to said receiver means via a route bypassing said compressor means and condenser means; passing liquid refrigerant in said receiver means to said evaporator means by gravity flow; vaporizing said liquid refrigerant in said evaporator means for passage back to said receiver means and for raising the pressure in said portion of said circuit to said predetermined minimum pressure; activating said compressor means in response to said rise in pressure in said portion of said refrigerant circuit to said predetermined minimum pressure; and terminating said interrupting step.

3,371,501

REFRIGERANT SYSTEM EXPANSION MEANS

Hal H. Rhea, North Syracuse, and David S. Wilson, East Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed June 20, 1966, Ser. No. 558,710
8 Claims. (Cl. 62—160)



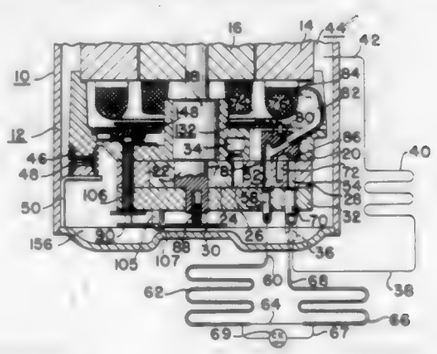
1. In a refrigeration system, the combination of compression means; a first heat exchanger for receiving refrigerant discharged by said compression means; refrigerant metering means connected with said first heat exchanger; and a second heat exchanger arranged between said refrigerant metering means and said compression means, said system being adapted upon actuation of said compression means to cool, said refrigerant metering means including a fluid regulator forming a vortex chamber through which refrigerant passes enroute to said second heat exchanger, said regulator having a control orifice in substantially tangential communication with said vortex chamber for introduction of vortex inducing pressurized control fluid into said regulator chamber, and control means for varying discharge of pressurized control fluid from said regulator orifice in response to system cooling load conditions to vary flow of refrigerant through said regulator to said second heat exchanger in accordance with changes in system cooling load.

3,371,502

REFRIGERANT COMPRESSOR WITH BUILT-IN REVERSE CYCLE VALVING

John H. Heidorn, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

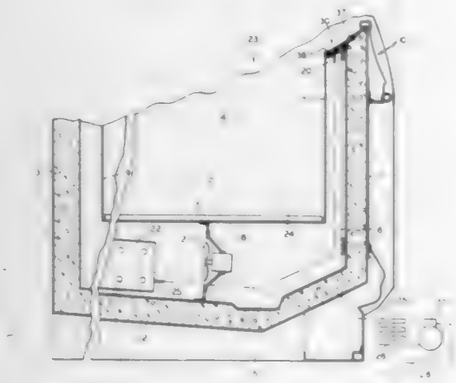
Filed Aug. 26, 1966, Ser. No. 575,409
5 Claims. (Cl. 62—234)



In the preferred form, a refrigerant system having a compressor, an evaporator coil, a condenser coil and means for connecting them in series refrigerant flow

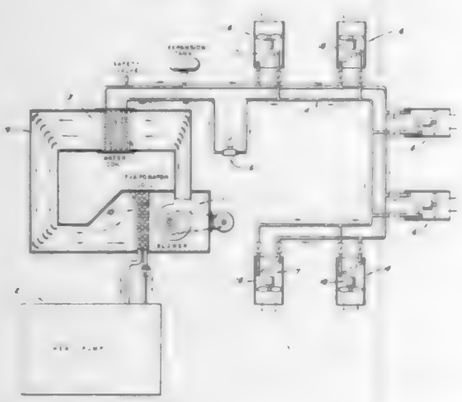
relationship, a two-way valve positioned by operating means driven off a compressor drive shaft ino first and second flow directing positions with respect to first and second director ports in the compressor body thereby to periodically reverse the flow of the refrigerant through the condenser and the evaporator.

3,371,503
REFRIGERANT LINE GRILLE STRUCTURE
Arthur Perez, Niles, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Nov. 23, 1966, Ser. No. 596,584
10 Claims. (Cl. 62—256)



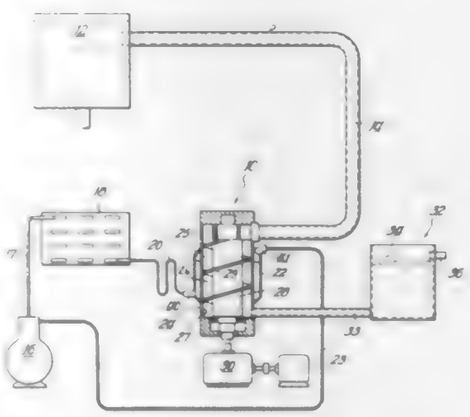
The invention provides a grille structure formed of a portion of a fluid refrigerant supply conduit across which a plurality of rods are secured. The grille is disposed at one side of an opening affording access to the interior of a refrigerated case, along a return aperture of duct means by which refrigerating air is circulated in the case and over the access opening to warm the air sufficiently by means of the warmer refrigerant to avoid frost deposits on the grille and adjacent portions of the case. The grille prevents entry of objects into the duct, yet is sufficiently open to avoid excessive warming of the air with resultant inefficiency due to the need to remove the excess heat. In addition, subcooling of the refrigerant flowing through the grille improves refrigeration efficiency.

3,371,504
HEAT EXCHANGER FOR AIR CONDITIONER
Claude S. Brindley, 254 Freddie Drive, Dallas, Tex. 75217
Filed Oct. 23, 1965, Ser. No. 503,361
1 Claim. (Cl. 62—324)



1. In an air heating and cooling system, in combination with a fluid circulation system having connection with a series of heating and cooling units, a duct system closed to outside air and having a blower fan operating therein to circulate air therethrough, an evaporation-condenser coil in said duct system in the path of air circulated therethrough by said fan, a heat transfer coil in said fluid circulation system enclosed in said duct system in the path of air circulated therethrough, a heat pump arranged externally of said duct system having connection with said evaporator-condenser coil whereby to heat or cool the air circulated through said heat transfer coil and whereby said circulated air is dehydrated.

3,371,505
AUGER ICEMAKER
Francis M. Raver, Yoe, and William F. Markley, York, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 2, 1964, Ser. No. 348,512
6 Claims. (Cl. 62—320)

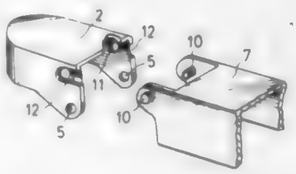


5. Icemaking apparatus comprising:
a casing having a freezing chamber including a generally cylindrical freezing wall and means defining a compacting surface extending in a plane substantially normal to the axis of said freezing chamber;
means defining an aperture in the upper portion of said casing to provide a discharge passage;
means for supplying water to said freezing chamber;
refrigeration means for cooling said freezing chamber to freeze a portion of the water supplied thereto on said freezing wall;
a rotatable auger disposed within said freezing chamber for scraping ice frozen on said freezing wall and forming a generally annularly shaped body of ice in the upper portion of said freezing chamber, said rotatable auger being effective to rotate said body of ice; and
shearing and guiding means in the upper portion of said chamber, said means including a straight, elongated blade element extending entirely across the path of the rotating body of ice, said blade element co-operating with a portion of said freezing wall to define a restricted path for the ice as it is guided through said aperture, said blade element being so spatially related to the freezing wall so as to form a compacted body of ice from which a uniform section is sheared by said blade element.

3,371,506
FRICTION WHEEL CIGARETTE LIGHTER
Hermann Zahn, Gutleutstrasse 131, Frankfurt am Main, Germany
Filed Oct. 1, 1965, Ser. No. 491,988
Claims priority, application Germany, Oct. 2, 1964, Z 11,103
1 Claim. (Cl. 67—7.1)

A hinge structure for a cigarette lighter having an extinguishing cap carrier with walls provided with stud-

receiving holes and guide grooves of decreasing depth for studs on flexible press lever walls. Easy assembly



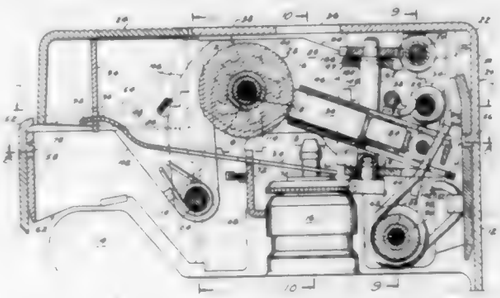
is effected by sliding the studs along the grooves into engagement with the holes.

3,371,507

CIGARETTE LIGHTER

Stanley H. Newman, % Regency Hotel, Park Ave. at 61st St., New York, N.Y. 10021

Filed Oct. 23, 1965, Ser. No. 503,848
Claims priority, application France, Nov. 19, 1964, 995,510
3 Claims. (Cl. 67—7.1)



A cigarette lighter which uses a compressible gas as a fuel, the lighter having a sparkwheel and flint assembly which is rotated by means of a ratchet wheel activated by a pawl member and an activating lever, the activating lever also opening the valve to emit fuel, the mechanism for maintaining a flint in contact with the sparkwheel also serves as a device for holding the head mechanism in engagement with the container.

3,371,508

MOCK CANDLE

Arthur J. Nelson, Santa Barbara, Calif.
(1998 Broadway St., San Francisco, Calif. 94109)

Filed Feb. 7, 1966, Ser. No. 525,764
9 Claims. (Cl. 67—27)

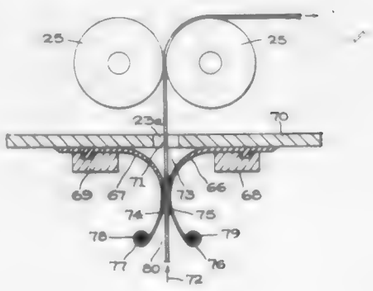
A candle concealed in a receptacle has either selective or automatic regulation of flame size to prolong its burning life, meanwhile an external indicator foretells the residual time of burning. The candle is spring-loaded to provide a required pressure at its upper taper-end to seal off gravitational waste of molten wax and has a candle lower-end vessel to eventually retain the candle mass when it changes from solid to a liquid pool for final consumption.

3,371,509

APPARATUS FOR THE FLUID TREATMENT OF WEB MATERIAL

Julien Dungler, Basel, Switzerland, assignor to Scholl AG., Zofingen, Switzerland, a joint-stock company of Switzerland

Filed July 27, 1965, Ser. No. 475,157
5 Claims. (Cl. 68—5)



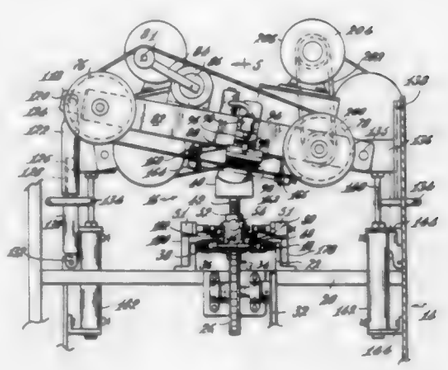
A sealing device allowing the advance of sheet material through an elongated opening in a wall and yet ensuring an air-tight separation of the spaces on either side of said wall; said sealing device comprises a pair of flat, flexible members which at one end are secured to said wall by rail means at either side of said opening and, at the other end, lie flat against opposed faces of said advanced sheet; said rail means include a transverse groove to receive a rib integral with said flexible members.

3,371,510

ROUGHING MACHINE

Robert B. Dunlap, Medway, Mass., assignor to Compo Shoe Machinery Corporation, Waltham, Mass., a corporation of Delaware

Filed June 3, 1966, Ser. No. 555,126
29 Claims. (Cl. 69—6.5)



1. A machine for roughening the bottoms of lasted uppers comprising means for supporting a lasted upper with its bottom in a predetermined plane and for movement along a predetermined path, a pair of flexible end-

less members, each having an outwardly directed working face and supported one at each side of the path of movement of the lasted upper in spaced parallel relation transversely of the path of movement of the lasted upper for movement relative to said path of movement, a yieldable backing member for each of said endless members mounted to back its respective member, each of said endless members being movable linearly on its support relative to said yieldable backing member located in a position to conform that portion of the endless member having engagement with the bottom at any given time to the contour of the portion of the bottom with which it has engagement, and power-operable means for maintaining said endless members in engagement with the marginal portions of the bottom at each side throughout movement of the bottom relative to said endless members.

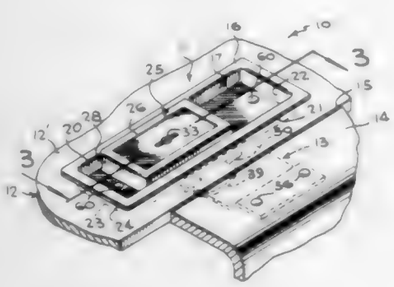
3,371,511

LATCH AND LOCK MECHANISM

Wallace E. Atkinson, Dinwiddie County, Va., assignor to Long Manufacturing Co., Inc., Petersburg, Va., a corporation of Virginia

Filed July 21, 1966, Ser. No. 566,848

9 Claims. (Cl. 70—71)



1. A combined latch and lock adapted to be mounted on first and second wall portions of separable parts of a container adjacent a line of separation therebetween for securing the parts together, comprising a keeper to be affixed to the first wall portion, said second wall portion having an opening therethrough bounded by interior and exterior surfaces of said second wall portion, a latching unit on said second wall portion including a cup member formed of an integral sheet metal stamping having marginal flanges disposed in a common plane to be mounted flush against said exterior surface and having side, end and base panel portions collectively defining an outwardly opening well extending inwardly through said opening in nested relation therein from said common plane and elongated along a major axis paralleling the plane of separation, said base panel portion generally paralleling said common plane and being spaced inwardly therefrom a distance corresponding to the thickness of said second wall portion disposing said base panel portion substantially flush with said interior surface, a movable latch member of narrower length than said well nested in said well, means slidably mounting said latch member in said well for rectilinear movement along the major axis of said well between a latching position and a release position displaced longitudinally from said latching position, and said latch member having catch means projecting into selected alignment with said keeper for interlocking engagement therewith when said latch member is in said latching position and said separable container parts are in closed condition and for releasing said keeper therefrom when said latch member is moved to said release position.

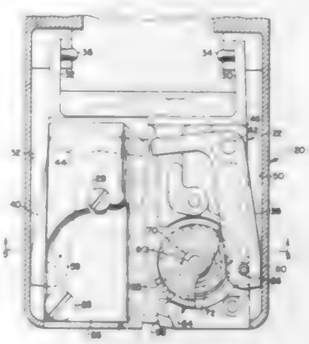
3,371,512

LOCKS

William C. Hutton and Davies Allport, Denton, Tex., and George A. Wood, Jr., Lincoln, Mass., assignors, by direct and mesne assignments, to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 7, 1965, Ser. No. 453,989

3 Claims. (Cl. 70—353)



A lock assembly which is locked and unlocked by purely linear movement of a key.

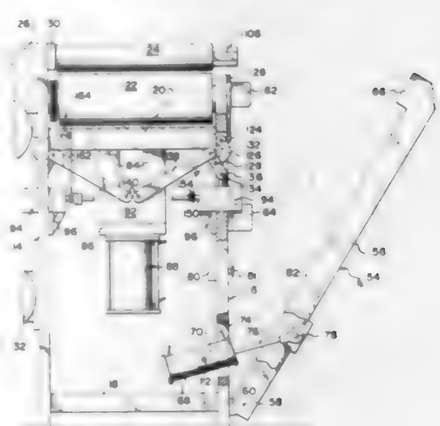
3,371,513

OPEN END ROLLING MACHINE

Howard S. Achler and Harold Kaufmann, Chicago, Ill., assignors to Kaufmann Tool & Engineering Corp., Chicago, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 357,413, Apr. 6, 1964. This application Dec. 9, 1965, Ser. No. 512,710

21 Claims. (Cl. 72—166)

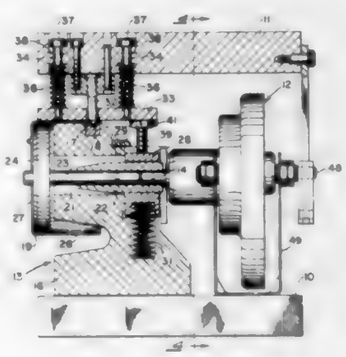


An elongated roller having anti-deflection character so as to avoid bowing when uniformly loaded is provided at relatively low cost by locating the support bearings, for a sleeve defining the pressure-receiving periphery of the roller, at precise distances from frame-supported ends of an elongated coaxial support shaft. Such an anti-deflection roller is useful in any machine where bowing is to be avoided. The portions of the pressure-receiving sleeve and/or support shaft between the bearings is of greater section modulus to inhibit bowing.

In a two-roller machine for rolling sheet metal where a first roller has a rigid periphery, means are provided for defining two relative positions for the rollers, the first position with the rollers forced together and the second position with the rollers spaced apart, and means are provided for sequentially moving one of the two rollers between the two positions. Continuously adjustable means are provided for selectively controlling the precise spacing between the centers of the rollers. The urethane rubber roller is arranged to be slid by force multiplying

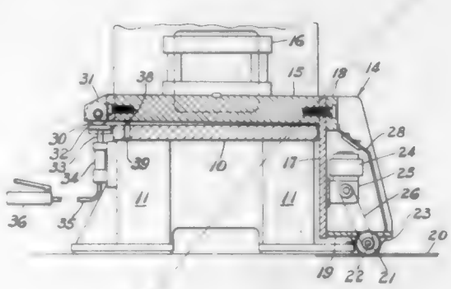
means along track ways between the said two positions. One end of the rigid-periphery roller may be selectively freed sequentially from its support to afford removal of the sheet metal tube formed thereon. One or both of the rollers is preferably provided with anti-deflection character. Means are provided for accommodating flexing of the ends of the support shaft of the rigid-periphery roller. Rolling to different radii is accomplished by use of a tubular former positioned over the rigid-periphery roller.

3,371,514
INDEXING APPARATUS
Herbert J. Venables III, Cleveland, Ohio, assignor to The Venables Machine & Tool Co., Cleveland, Ohio, a partnership
Filed Sept. 1, 1965, Ser. No. 484,382
12 Claims. (Cl. 72—421)



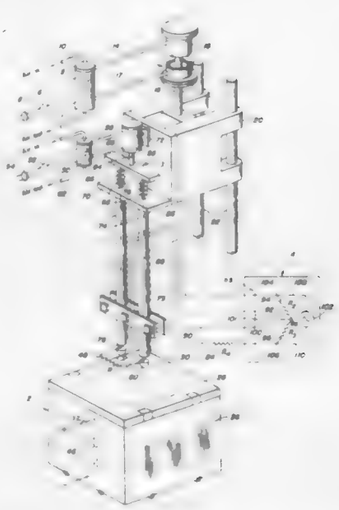
An indexing device for use with machine tools having a reciprocating tool carrier is arranged so that the tool carrier reciprocation provides indexing power. An indexing member adapted to index and support a workpiece is supported for limited movement in the direction of tool carrier movement so that the workpiece can move from a normal position into a work position and then be returned to its normal position clear of the tools before the indexing occurs. A cam mechanism is driven by the reciprocating tool carrier to cause the indexing operation only when the indexing member is in its normal position.

3,371,515
DIE LOADING APPARATUS FOR POWER PRESSES
Edwin A. Munschauer, Jr., Snyder, N.Y., assignor to Niagara Machine & Tool Works, Buffalo, N.Y.
Filed Feb. 7, 1966, Ser. No. 525,560
10 Claims. (Cl. 72—446)



1. Apparatus for moving die sets to and from working position on a power press bed disposed above the adjacent floor, said apparatus comprising a bolster for detachable securement to such press bed and adapted to have a die set secured thereon, support means at an edge of said bolster extending downwardly toward said floor, wheel means at the lower end of said support means to mount the same for rolling movement toward and away from said press bed, and other wheel means at the opposite edge of said bolster and projecting below the lower surface thereof for rolling movement on said press bed as said bolster moves to and from its working position on said press bed, means at the edge of said press bed opposite to said support means having surface portions substantially coplanar with said press bed whereby said other wheel means roll thereonto as the bolster reaches its working position on the press bed, said wheel means supporting said bolster during rolling movement with the lower surface of the bolster inclined upwardly with respect to the press bed in a direction toward said other wheel means, and means for selectively lowering said other wheel means to lower said bolster directly onto said press bed by pivotal movement thereof about the axis of said first mentioned wheel means and raising said last mentioned means to dispose said surface portions coplanar with said press bed for free rolling movement of said other wheel means on said surface portions and said press bed.

3,371,516
APPARATUS FOR ADJUSTING THE TEMPERATURE COEFFICIENT OF WIRE STRAIN GAGES
John D. Russell, Malibu, Calif., assignor to Microdot Inc., South Pasadena, Calif., a corporation of California
Original application June 15, 1960, Ser. No. 36,304, now Patent No. 3,245,016, dated Apr. 5, 1966. Divided and this application Sept. 15, 1965, Ser. No. 505,207
6 Claims. (Cl. 73—1)

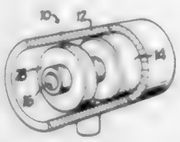


1. Apparatus for producing inherent temperature compensation within an unmounted strain gage composed of a strain responsive filament coupled through an electrical insulating material to a metallic support; said apparatus comprising means for establishing said strain gage at an elevated temperature; means for sensing and indicating the temperature sensitivity of said gage at said elevated temperature, said sensing and indicating means including first lead wires connecting said resistance filament to said indicating and sensing means, and a second lead wire of equal length and parallel to said first lead wires and connected at both ends to said indicating and sensing means, said second lead wire being adapted to cancel changes in resistivity of said first lead wires due to said elevated temperature, and heating means for shifting said temperature sensitivity with reference to its indicated value.

3,371,517
METHOD OF AND APPARATUS FOR PROXIMITY SENSING

Gabriel Roth, 6840 Roby, Union Lake, Mich. 48085

Filed Feb. 1, 1966, Ser. No. 524,020
2 Claims. (Cl. 73—37.5)

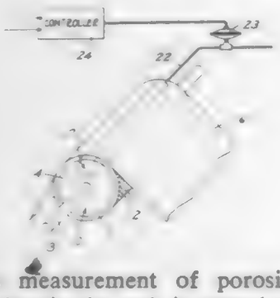


A sensing device for sensing the presence of an object at a given position by reflection of a gas stream directed against the object from a sensing head. The device includes an outlet passage and an inlet passage for reflected gas with the inlet passage being formed by an enlarged portion spaced from the outlet to reduce the turbulence of the gas flowing out of the sensing head.

3,371,518
DEVICE FOR CONTINUOUSLY MEASURING POROSITY

Marion A. Keyes, South Beloit, Ill., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Feb. 12, 1965, Ser. No. 432,328
5 Claims. (Cl. 73—38)



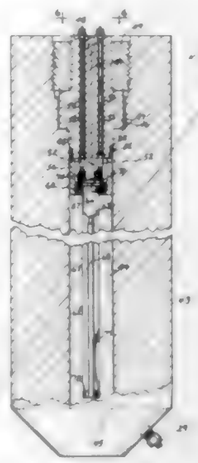
Continuous measurement of porosity of a moving porous web wherein the web is passed over an air chamber thereby subjecting it to a pressure differential, and sensing either the air flow through the web or changes in pressure in the chamber as an indication of variations in porosity, which changes can then be translated into a control signal for controlling process variables which affect the porosity.

3,371,519
POROSIMETER

Thomas J. Slone, Silver Spring, and Leonard J. Orbeck, Hyattsville, Md., assignors to American Instrument Co., Inc., Silver Spring, Md.

Filed Mar. 11, 1966, Ser. No. 533,560
10 Claims. (Cl. 73—38)

A porosimeter consisting of a pressure vessel with a penetrometer mounted therein and a controllable source of pressure fluid connected to the pressure vessel. The penetrometer has a stem provided with a conductive sleeve surrounding the stem. The penetrometer contains mercury, and the mercury in the stem and the sleeve form a condenser whose capacitance changes in accordance with changes in the height of the lower end of the mercury column in the stem. The penetrometer has a removable top cover disc provided with a central electrode exposed to the mercury in the interior of the penetrometer. The changes in height of the bottom of the mercury column are caused by penetration of the mercury into the pores of a sample contained in the penetrometer resulting from the pressure applied by the pressure fluid. The sleeve and electrode are electrically connected into a capacitance bridge so as to form one arm thereof. Changes in capacitance are measured on a meter connected to the output terminals of the bridge. These changes correspond to

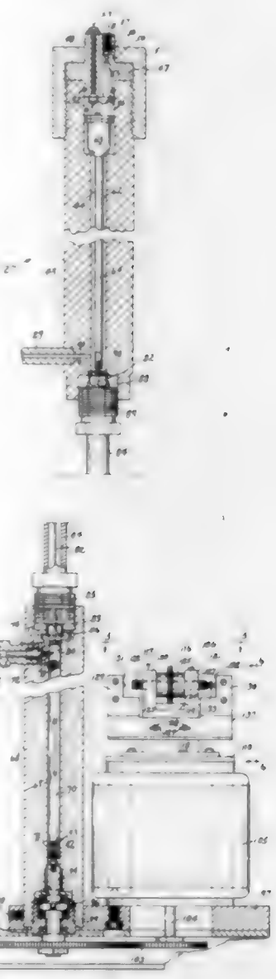


changes in the position of the lower end of the mercury column in the penetrometer stem.

3,371,520
ELECTRICAL POROSIMETER

Thomas J. Slone, Silver Spring, and Leonard J. Orbeck, Hyattsville, Md., assignors to American Instrument Co., Inc., Silver Spring, Md.

Filed Feb. 20, 1967, Ser. No. 617,216
10 Claims. (Cl. 73—38)



A porosimeter consisting of a pressure chamber in which is mounted a penetrometer having a depending stem. A source of pressure fluid is connected to the pres-

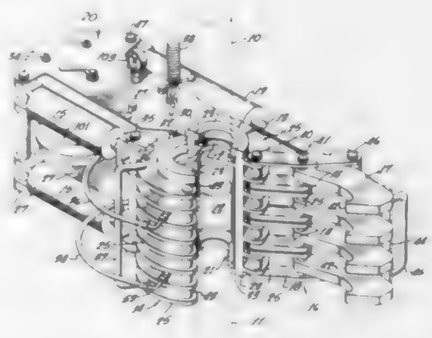
sure chamber and has an indicator to show the applied fluid pressure. The penetrometer contains mercury, which is forced up into the pores of sample material in the penetrometer under the applied fluid pressure. This causes the mercury to rise in the stem. A motor-driven probe rod is engaged in the stem through the bottom end thereof. The motor is energized through a Triac. A relay controls the application of gating potential to the gate electrode of the Triac. The relay is connected in the collector circuit of a normally conducting Darlington pair of transistors, normally maintaining the gating potential of the Triac by holding the relay energized. The probe is grounded and the input base electrode of the Darlington pair is connected to the mercury, so that the base electrode becomes grounded, turning off the Darlington pair, when the probe touches the bottom end of the mercury in the penetrometer stem. This deenergizes the relay, turning off the Triac and stopping the motor. The rotation of the motor shaft magnetically drives a reed switch which pulses a transistor amplifier whose output is connected to a pulse counter. The number of pulses counted from a zero starting position represents volumetric increments of pore penetration of the mercury into the sample material as the probe follows the upward movement of the bottom end of the mercury column in the penetrometer stem.

3,371,521

LEAK-TESTING APPARATUS FOR EITHER FLUSH OR SHOULDERED PIPE JOINTS AND PACKER THEREFOR

Ernest D. Hauk, 1315 E. 23rd St., Signal Hill, Calif. 90806

Filed Apr. 1, 1966, Ser. No. 539,579
31 Claims. (Cl. 73—46)



A high-pressure leak-testing apparatus for pipe joints, including joints wherein collars are present, comprising a split casing containing a rubber packer which is split correspondingly to the casing, both the casing and the packer being adapted to open up so as to receive a pipe joint in a direction lateral to the axis of the pipe. The packer contains mounting and compression means, and extrusion-prevention means, so constructed and located that the casing and packer when closed will contain fluids under pressures of thousands of pounds per square inch.

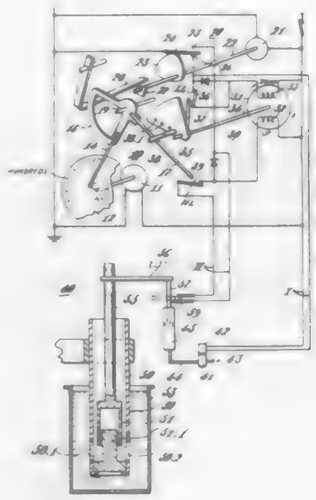
3,371,522

APPARATUS FOR MEASURING VISCOSITY

Austin S. Norcross, Newton, Mass., assignor to Norcross Corporation, Newton, Mass., a corporation of Massachusetts

Filed June 4, 1965, Ser. No. 461,280
7 Claims. (Cl. 73—57)

In a viscometer of the type wherein a cylinder and a piston form a gap and relative movement of cylinder and piston measures viscosity by the shearing of the fluid being tested, cylinder and piston are contained in a vessel for the fluid and the cylinder is moved over the fixed piston. The time needed by the cylinder to traverse a given stroke length is a measure of viscosity during



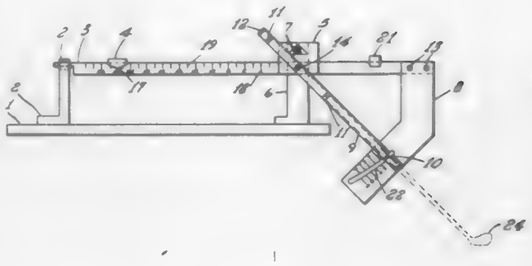
respective strokes. The viscometer is particularly useful for continuous measurement when cyclically actuated within fluid continuously or periodically changed in the vessel.

3,371,523

GOLF CLUB SWING WEIGHT BALANCE

James B. Crouch, 1959 Shirley Drive, and Harold E. Eagle, 2139 Woodland Ave., both of Burlington, N.C. 27215

Filed Sept. 20, 1965, Ser. No. 489,803
3 Claims. (Cl. 73—65)



This invention relates broadly to the field of sports and more specifically to a device for weighting various types of sports equipment, such as golf clubs or other implements which are wielded by hand when in use, to determine the feel exerted on the user at the instant the equipment is started in motion.

The present accepted standard for measuring and matching the swing weight of a set of golf clubs is a simple balance. Each club of a set of golf clubs is pivoted over a point fourteen inches from the shaft end and the head is weighted so that the same force on the shaft will balance each club in a horizontal position. The force applied to balance the club is changed as the desired swing weight changes. One familiar with the game of golf and skilled in the art of weight measuring devices realizes that such a balance is never achieved in the static or dynamic state when the instruments are properly swung. Therefore, the clubs of a set so balanced by the present method do not feel the same when they are

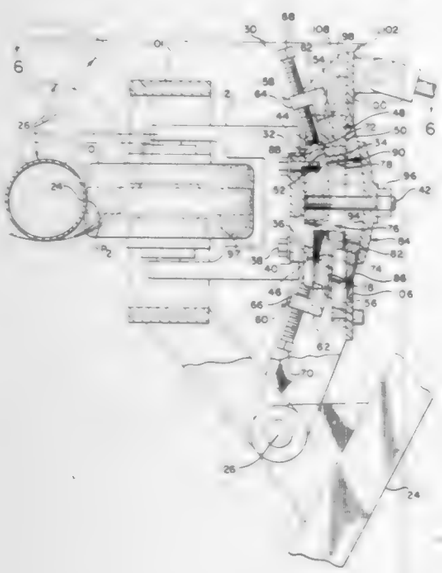
swung. The object of this invention is the provision of a golf club scale adaptable to measuring the feel exerted on the user by each club of a set, whereby, the normal grip and proper angle to the horizontal at the address position for each club of a set is employed. Whereas, to facilitate the modification of length and distribution of weight for each club of a set to such a degree as may be necessary to obtain the same balance for each club of a set to the requirements of the particular individual.

3,371,524

APPARATUS FOR POSITIONING A SEARCH UNIT

Joseph T. Wloszek, Seven Hills, Ohio (% Custom Machine, Inc., 9200 George Ave., Cleveland, Ohio 44105)

Filed Oct. 15, 1964, Ser. No. 404,128
5 Claims. (Cl. 73—67.8)



Apparatus for positioning a nondestructive ultrasonic search unit, such as a liquid filled, flexible wheel containing a sound transducer, with respect to a workpiece. Structure is provided for pivoting the wheel in two mutually perpendicular planes about a pivot point located substantially at the point of contact between the wheel and a workpiece. Structure is also provided for calibrating the search unit against a calibration piece, which is normally located in a retracted position remote from the search unit while the search unit is inspecting a workpiece.

3,371,525

CYLINDER FIRING PRESSURE APPARATUS

Robert W. Mitchell, Houston, Tex., assignor to Stewart & Stevenson Services, Inc., Houston, Tex., a corporation of Texas

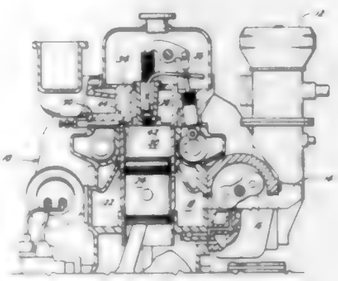
Filed Feb. 4, 1966, Ser. No. 525,225
5 Claims. (Cl. 73—115)

1. In combination with a diesel engine having a cylinder and head, the improvement of a cylinder firing pressure apparatus comprising,

a passageway in the cylinder head in communication with the cylinder and extending through said head,

an elongate tubular adapter body secured in said passageway and including an opening therethrough in communication with said passageway and cylinder, said body including pressure gauge releasable connecting means for receiving a pressure gauge for making firing pressure tests,

a stem adapted to extend through and substantially filling said opening for reducing the volume of the opening in communication with the cylinder when testing is completed and adapted to be removed from said opening when making pressure tests, and



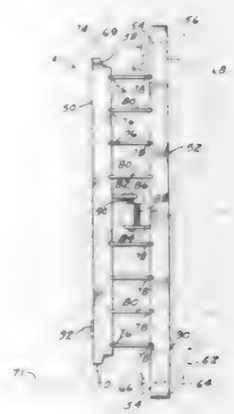
releasable connecting means between the stem and said body for releasably connecting the stem in said body opening.

3,371,526

LOAD CELL

George H. Fathauer, Decatur, Ill., assignor to Radson Engineering Corporation, Macon, Ill., a corporation of Illinois

Filed May 5, 1965, Ser. No. 453,393
9 Claims. (Cl. 73—141)



A load cell formed of a pair of walls in parallel relation, a pair of spring members extending between the walls, and a measuring device secured between the walls to sense parallel deflection of one wall with respect to the other wall without supporting any of the force causing the deflection. A bearing button and a bearing strip can be secured to respective walls to compensate for offset loads.

3,371,527

METHOD FOR IDENTIFYING WELL FLUIDS

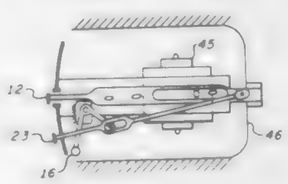
Jacques Fernand Moulin, 72 Rue Lauriston, Paris, France

Continuation of application Ser. No. 315,802, Oct. 14, 1963. This application Dec. 29, 1966, Ser. No. 605,938
Claims priority, application France, Oct. 23, 1962, 913,059
1 Claim. (Cl. 73—155)

The particular embodiment described herein as illustrative of one form of a method and apparatus for performing production logging operations in a well includes in situ measuring the percent of water, the density, and

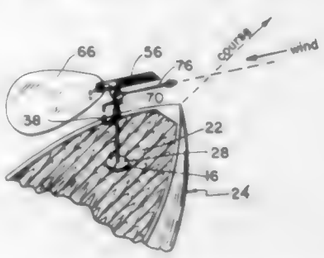
the rate of flow of the mixed producing fluids in the well. Simultaneous indications at the surface of these parameters are used to determine the specific relationship of each phase of the fluids in the mixture as it is produced.

3,371,528
TAKE-OFF DIRECTOR
Neil Sullivan, Sunbury-on-Thames, England, assignor, by mesne assignments, to Sperry Rand Limited, London, England, a company of England
Filed May 17, 1965, Ser. No. 456,223
Claims priority, application Great Britain, May 19, 1964, 20,559/64
2 Claims. (Cl. 73—178)



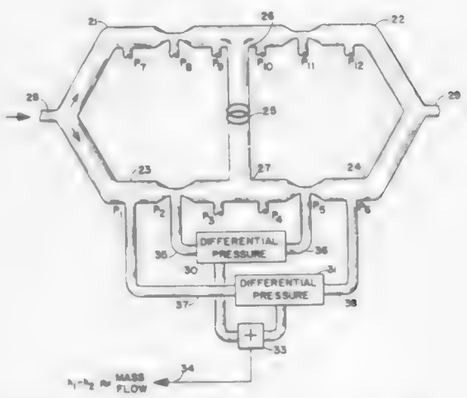
The longitudinal-axis acceleration of an aircraft existing at rotational velocity (V_R) is employed to command a pitch attitude proportional thereto whereby the longitudinal-axis acceleration then obtaining is converted into vertical lift resulting in a pitch attitude that is optimum for the climb-out velocity (V_2).

3,371,529
WIND INDICATOR SAILING AID
Richard L. Tillman, 174 St. Clair Ave., Elkhart, Ind. 46514
Filed Aug. 10, 1966, Ser. No. 571,620
8 Claims. (Cl. 73—188)



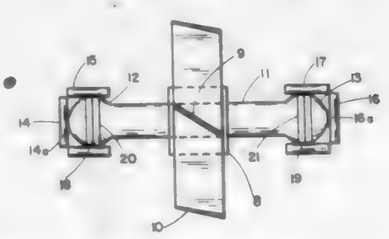
1. A relative wind direction sailing aid for a boat comprising a wind vane, means for mounting the wind vane means for pivotal movement about a predetermined axis on the boat, means for supporting a first indicator a predetermined distance from said axis in fixed relation with respect to the boat, a pair of spaced indicators, means carried by said wind vane means for supporting said spaced indicators at said predetermined distance from said axis for cooperation with said first indicator as the wind vane means turns with respect to the first indicator when located half way between spaced indicators when the center line of the boat and the wind driection coincide.

3,371,530
MASS FLOWMETER
Wilfred H. Howe, Sharon, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Oct. 4, 1965, Ser. No. 492,610
10 Claims. (Cl. 73—205)



A mass flowmeter utilizing a constant volume pump in a bridge configuration in conjunction with at least two flow measuring devices in the bridge with at least one of said flow measuring devices being reversible in that the polarity of output remains the same under flow reversals, the combination performing at flow rates both above and below that of the constant volume pump.

3,371,531
TURBINE METER BEARING
Frederick D. Ezekiel, Lexington, and Joseph F. Bonarrigo, Pembroke, Mass., assignors to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Oct. 22, 1965, Ser. No. 501,418
18 Claims. (Cl. 73—231)

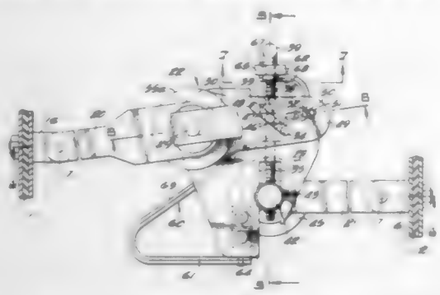


A turbine meter rotor shaft is supported at its end by tungsten carbide ball bearings fastened thereto, each ball bearing running in a cylindrically-shaped concavity in a bearing housing consisting of an aluminum oxide material.

3,371,532
TEMPERATURE-COMPENSATING CRANK ASSEMBLY FOR GAS METERS
Parker S. Anderson, Tempe, Ariz., assignor to Lancaster Meter Company, Tempe, Ariz., a corporation of Arizona
Filed Aug. 17, 1965, Ser. No. 480,399
3 Claims. (Cl. 73—281)

A diaphragm-actuated crank mechanism for a gas meter which mechanism includes a thermally-responsive bimetal

strip associated with the indexing screw of the crank mechanism and operable automatically to vary the throw



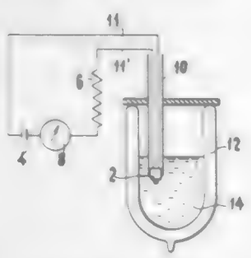
of the crank mechanism in response to variations in ambient temperatures.

3,371,533

APPARATUS FOR MEASURING THE LEVEL OF CRYOGENIC LIQUIDS

Guy H. Dumas, Paris, France, assignor to Société Industrielle de Liaisons Electriques, Paris, France, a company of France

Filed Feb. 15, 1965, Ser. No. 432,627
Claims priority, application France, Feb. 25, 1964, 964,990
2 Claims. (Cl. 73—295)



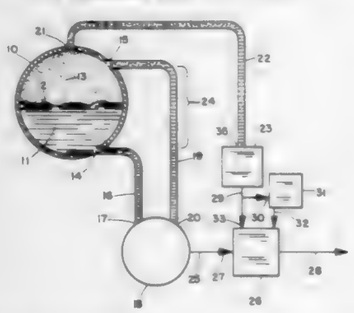
A method and apparatus for indicating a fall or rise in the level of a liquefied gas such as helium or hydrogen utilizing a thermo-sensitive semi-conductor body as the probe. The semi-conductor body is doped with impurities to produce a resistivity between about $\frac{1}{100}$ and some $\frac{1}{1000}$ of an ohm-centimeter at room temperature. The semi-conductor body is then immersed into the liquid and an electric current is passed through the semi-conductor by a constant voltage source to heat same to a temperature below the boiling point of the liquid. As the liquid level falls beneath the position of the semi-conductor body, a sharp increase in current is measured indicating the fall of the liquid, the increase in current being enhanced by a thermo-avalanche effect due to the characteristics of the semi-conductor body.

3,371,534

LEVEL SENSING APPARATUS

Lloyd T. Akeley, Sharon, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts

Filed May 10, 1966, Ser. No. 549,025
2 Claims. (Cl. 73—299)



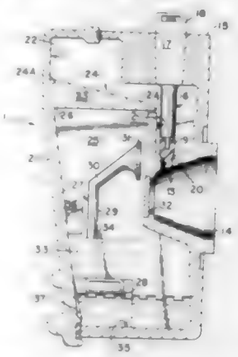
A tank level measuring system combines a static pressure measurement from the tank with a head level measurement in order to compute the level indication; the static pressure measurement is characterized to reduce the inherent error in such a system.

3,371,535

LIQUID LEVEL INDICATOR FOR DISPENSER IN DISHWASHER DOOR

Leonard J. Martiniak, Waukesha, Wis., assignor to General Electric Company, a corporation of New York

Filed Jan. 7, 1966, Ser. No. 519,219
5 Claims. (Cl. 73—306)



1. In a water-using appliance having a wash chamber and a door pivoted about a horizontal axis for movement between open and closed positions relative to said chamber, said door including dispenser means for dispensing liquid into said wash chamber at a desired time, said dispenser including:

(a) a container having a reservoir portion;

(b) a transparent window positioned within a wall of said container adjacent said reservoir portion for viewing into said reservoir when said door is in an open position;

(c) indicating means disposed within said reservoir for indicating the amount of liquid present therein;

(d) said indicating means comprising an elongated member having flag means at one end thereof and float means at the opposite end thereof, said indicating means thereby being adapted to float on the surface of liquid within said reservoir;

(e) said indicating means floating on the surface of liquid within said reservoir between a first position in which said reservoir is full and said flag means is not aligned with said window and is not viewable therethrough, through a series of intermediate positions in which the level of liquid within said reservoir decreases and said flag means begins to appear behind said window, and a final position wherein said indicating means rests on a wall of said container when said reservoir is empty, with said flag means being positioned directly behind said window and viewable from outside said container; and

(f) guide means disposed within said reservoir for retaining said indicating means and said flag means in substantially the same position relative to said window while said door is in either the open or closed position.

3,371,536

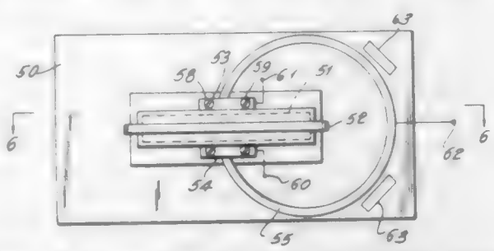
SONIC DISPLACEMENT TRANSDUCER

Jacob Tellerman, Bayside, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York

Filed July 20, 1966, Ser. No. 566,618
8 Claims. (Cl. 73—386)

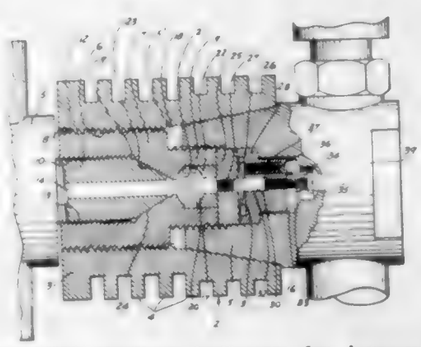
1. A displacement transducer comprising a self-supporting resilient curved rod having a first and second end; a first and second sonic reflecting mass connected to said

first and second ends, respectively; means for moving said first and second sonic reflecting masses with respect to one another to alter the curvature of said curved rod;



and means for measuring the speed of sound in said rod connected to said rod; the relative displacement between said first and second sonic reflecting masses being functionally related to the speed of sound in said rod.

3,371,537
PRESSURE INDICATOR
William J. Kiene, 6455 SW. 122nd St., Miami, Fla. 33156
Filed Sept. 16, 1965, Ser. No. 487,686
6 Claims. (Cl. 73—395)

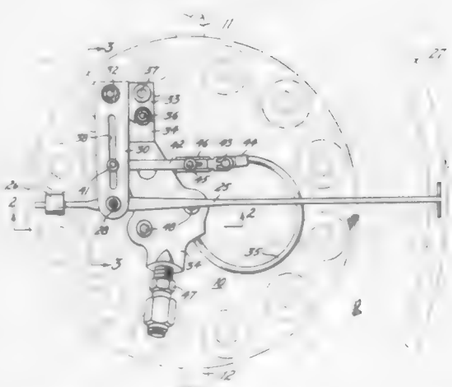


A maximum pressure indicator for internal combustion engines, etc. having a check valve for holding the maximum pressure applied. A filter is positioned in the passageway between the test engine and the gauge.

3,371,538
SAMPLER GAUGE
Orville W. Bagby, Rte. 2, Box 37, Pinson, Ala. 35126
Filed Apr. 1, 1966, Ser. No. 539,434
2 Claims. (Cl. 73—425.4)

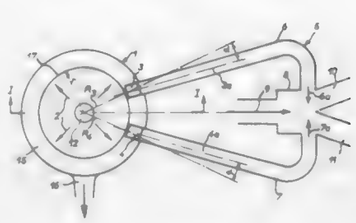
A liquid sampler gauge having an elongated vertical member and tube slidably connected for longitudinal movement relative to each other with the upper ends thereof terminating adjacent each other. A stopper carried by the elongated member closes the lower end of the tube upon relative movement in one direction and opens the lower end of the tube upon relative movement in the opposite direction.

3,371,539
COMPENSATING MECHANISM FOR INDICATOR
Robert D. Neyer, Oreland, Pa., assignor to Yarway Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 27, 1965, Ser. No. 516,546
5 Claims. (Cl. 73—432)



1. In an indicator including a variable compensating means, a rotatable primary indicator shaft, a crank arm mounted on the primary shaft, an indicating pointer arm pivoting about an axis remote from the axis of the indicator shaft, a slidable pin in slot connection between said crank arm and the pointer arm, said slot being curved and having a radius of curvature equal to the radius of an arc traversed by displacement of the pointer arm pivot in response to the compensating means, whereby displacement of the pointer arm pivot varies the range of travel of the pointer arm relative to the range of travel of the primary indicator shaft.

3,371,540
FLUID GYROMETER
Don Pierre Louis Jean Colombani, Latresne, Adolphe Otton Gontier Ernst, Petit Piqnet, and Janos Rona, Bordeaux, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Dec. 2, 1965, Ser. No. 511,109
Claims priority, application France, Dec. 4, 1964, 997,479
5 Claims. (Cl. 73—505)



1. A gyrometer for measuring angular velocity, comprising a conduit element having an axial inlet orifice and walls extending circumferentially of the axis of the inlet orifice; outlet means at the periphery of the conduit element, including two tubes fast with the said walls and inclined in opposite directions with respect to two respective radii of the conduit element; means for supplying fluid to the inlet orifice so as to create radial flow be-

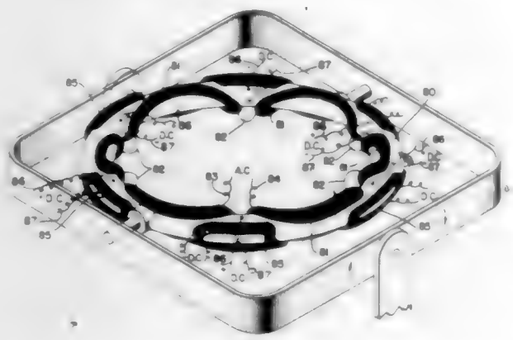
tween the walls, from the inlet orifice towards the peripheral outlet means; and means for measuring the difference between the rates of fluid-flow into the respective tubes, whereby measurement of the said differential flow-rate enables the angular velocity of the conduit element about the axis to be determined.

3,371,541

METHOD AND APPARATUS FOR MOVEMENT OF LIQUIDS BY ELECTROMAGNETIC MEANS

Harry H. Herman, Jr., Denver, Colo., assignor of fifteen percent to Louis Broido and Joseph A. Broido, both of New York, N.Y.

Filed Nov. 28, 1958, Ser. No. 776,884
12 Claims. (Cl. 74—5)



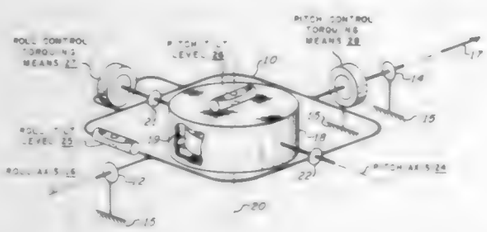
1. In a gyroscope, means defining a closed circuit path of substantially circular configuration for a body of electrically conductive fluid and rotary magnetic field developing means for electromagnetically inducing directional movement of said body of fluid within said path defining means constituting the inertia mass of the gyroscope.

3,371,542

GYRO VERTICAL ERECTING MEANS

Richard E. Swarts, Northport, and Bert V. Tiblin, Huntington, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of New York

Filed Feb. 11, 1965, Ser. No. 431,811
12 Claims. (Cl. 74—5.47)



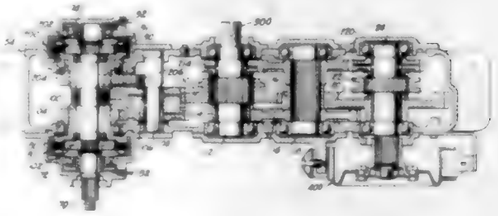
1. In a gyro vertical having a rotor frame mounted with freedom about mutually perpendicular, normally horizontal axes; means for controlling the erection of the frame including a torque motor with a control winding for one of the axes, a torque motor with a control winding for the other of the axes; a first level movable about one of the axes having an electrolytic conductor, a gravity responsive bubble, a pair of control electrodes wetted differentially by the conductor through a determined range of angular tilt, a continuously wetted electrode, and a normally non-wetted electrode wetted by the conductor and cooperating with the continuously wetted electrode to bypass the control electrodes at a determined angle of tilt of the first level greater than that of the operating range of the control electrodes; a second level movable about the other of the axes having an electrolytic conductor, a gravity responsive bubble, a pair of control electrodes wetted differentially by the conductor through a determined range of angular tilt, a continuously wetted electrode, and a normally non-wetted electrode wetted by the conductor and cooperating with the continuously wetted electrode to bypass the control electrodes at a determined angle of tilt of the second level greater than that of the operating range of the control electrodes; a source of electrical energy, and a circuit connecting the first and second levels in parallel relation to the source including a lead between the source and the respective continuously wetted electrodes of both levels, a lead connecting the normally non-wetted electrodes of both levels and the windings of both motors to the source, a lead between the related motor winding and one of the control electrodes of the first level, a lead between the related motor winding and the other of the control electrodes of the first level, a lead between the related motor winding and one of the control electrodes of the second level, and a lead between the related motor winding and the other of the control electrodes of the second level.

3,371,543

ENGINE POWER TAKEOFF DRIVE

Robert E. Jackson, 1210 Sussex Lane, and Evan S. Prichard, 1212 Essex Lane, both of Newport Beach, Calif. 92660

Continuation-in-part of application Ser. No. 391,712, Aug. 24, 1964. This application Oct. 21, 1966, Ser. No. 596,372
14 Claims. (Cl. 74—15.4)



A power takeoff transfer-transmission for mounting on the front of a vehicle and being driven from the front of the vehicle engine, where an internal gear train serves both to accomplish multiple speed changes and to displace the drive axis laterally from in front of the engine to a rearwardly extending drive shaft along one side of the vehicle. The apparatus includes pneumatically operated clutches and gear shifting means for remote engagement and control of the direction and speed of the power output drive to the laterally positioned drive shaft.

3,371,544

APPARATUS AND METHOD FOR PERFORATING BEVERAGE CASES OR THE LIKE

Arthur H. McElroy, 2789 E. 45th Place, Tulsa, Okla. 74105

Filed Nov. 23, 1964, Ser. No. 413,241
1 Claim. (Cl. 74—86)

1. Apparatus for selectively causing a desired orbital movement of a plate comprising

a support base;

a plurality of eccentric members rotatably supported to said base, each of said eccentrics including:

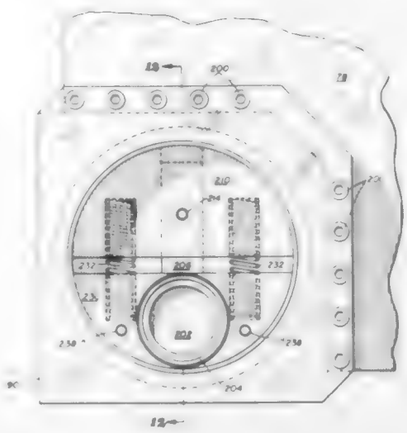
(1) an eccentric sleeve rotatably supported on said base,

(2) a first cam shoe attachable and rotatable with said eccentric sleeve,

(3) a second cam shoe radially movable relative to said eccentric sleeve, rotatably with said first cam shoe and spaced therefrom, and

(4) spring means normally biasing said second cam shoe radially outward from said first cam shoe;

said plate supported by said eccentrics for relative movement therewith;



at least one tracing cam removably attached to said support base and having an opening therein representative of said desired path;

a follower attached to said orbital plate juxtapositioned in said tracing cam opening; and

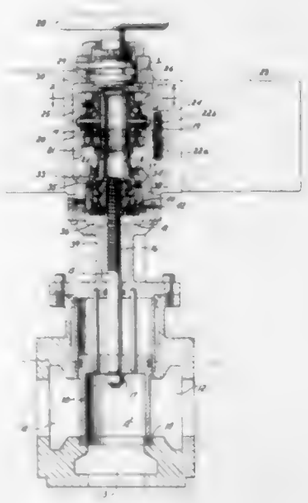
means to simultaneously rotate said eccentric members.

3,371,545

VALVE OPERATING EQUIPMENT

Daniel R. McNeal, Jr., Lansdale, and Lorenzo Boscaino, Norristown, Pa., assignors to Andale Company, Lansdale, Pa., a corporation of Pennsylvania

Filed Aug. 10, 1966, Ser. No. 571,464
7 Claims. (Cl. 74—89.15)



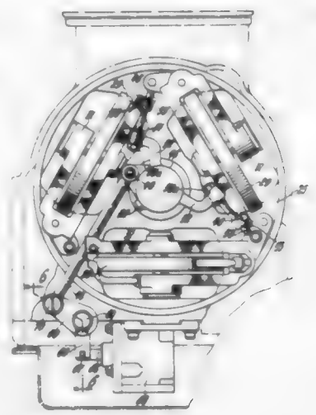
1. Valve operating equipment comprising cooperating sphere and socket members one of which is adapted to be associated with a valve stem for operation of the valve and the other of which is adapted to be rotatively driven by a valve operating device, the socket member having a plurality of internal arcuate grooves separated circumferentially of the socket by spaced abutments, the sphere member having circumferentially spaced recesses, and balls received partially in said recesses and partially in said grooves and serving as driving elements in cooperation with said abutments.

3,371,546

TORIC FRICTION TRANSMISSION WITH CROSS PIN RATIO CHANGING CONTROL

Elson B. Spangler, Bloomfield Hills, and Milton H. Scheiter, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 9, 1966, Ser. No. 548,510
9 Claims. (Cl. 74—200)



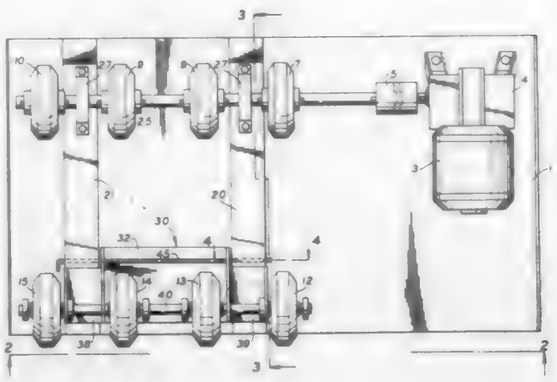
1. In a toroidal transmission having spaced toroidal discs with a roller for transmitting torque between said discs, a roller carrier, means rotatably supporting said roller in said carrier, means adjacent one end of said carrier forming a swivel joint support for said carrier, a carrier pin extending outwardly from said carrier, a rotatable control collar, a control pin extending outwardly from said control collar, means connecting said control pin to said carrier pin, and means for rotating said control collar to change the transmission drive ratio.

3,371,547

DRUM ROLLER

John S. Eckert, Silver Lake, and Glenn J. Haught, Cuyahoga Falls, Ohio, assignors, by mesne assignments, to U.S. Stoneware, Inc., a corporation of Massachusetts

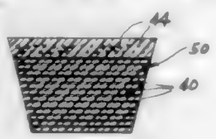
Filed Sept. 13, 1965, Ser. No. 486,684
6 Claims. (Cl. 74—206)



A drum roller is supported on each side by a series of rotatable wheels, the different series being parallel to one another. One or more wheels on one side of the drum are driven and those on the other side of the drum are idlers. The idlers are supported on a carriage which is movable toward and away from the driven wheels, and the carriage is capable of being fastened at different dis-

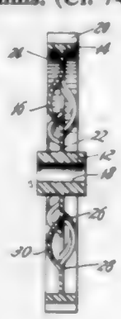
tances therefrom so as to accommodate drums of different sizes. The preferred fastening means includes a pin that passes through openings in the carriage and through openings selected from a series thereof in cross rails which support the driven wheel or wheels.

3,371,548
BELTS AND OTHER GLASS FIBER-ELASTOMERIC STRUCTURES AND METHOD OF MANUFACTURE
Alfred Marzocchi, Cumberland, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Original application Dec. 26, 1962, Ser. No. 247,244, now Patent No. 3,296,050, dated Jan. 3, 1967. Divided and this application July 14, 1966, Ser. No. 582,770
3 Claims. (Cl. 74—234)



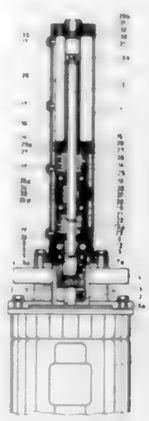
1. A drive belt comprising the combination of a cured elastomeric material and a plurality of adjacent rows of glass fiber bundles each of which is formed of a plurality of glass fibers characterized by high strength and dimensional stability under the temperature and pressure conditions of use and wherein a strong tie-in exists between the fibers and the cured elastomeric material, said fibers being confined within the elastomeric material and arranged therein to extend substantially unidirectionally crosswise of the belt and in which the bundles of glass fibers are concentrated in the inner radial portion of the belt.

3,371,549
RESILIENT ROTARY DRIVING ELEMENTS AND SYSTEM THEREOF
Ernst Schrempp, Norwalk, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Sept. 8, 1966, Ser. No. 577,851
9 Claims. (Cl. 74—411)



1. A rotary motion transmitting element comprising
(A) a hub adapted to be mounted on a shaft;
(B) a rim having spaced circumferential teeth thereon, and
(C) a plurality of radially extending elongate ribs interconnecting said hub and said rim, said ribs being bowed to have an axial length slightly greater than the radial distance between said hub and said rim,
(D) said rotary element being formed entirely of a single homogeneous mass of thermoplastic material as an integral one-piece born to shape molding whereby said ribs may deform to permit said rim to become eccentric relative to said hub upon the application of an external radial force to said rim.

3,371,550
TRANSMISSIONS FOR CONVERTING ROTARY INTO LINEAR MOTION
Richard Haller, Brauerstrasse 51, Zurich, Switzerland
Filed Dec. 17, 1965, Ser. No. 514,510
Claims priority, application Switzerland, Dec. 18, 1964, 16,391/64
8 Claims. (Cl. 74—424.8)

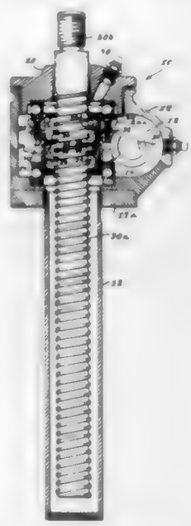


A drive incorporating an overrunning device for converting rotary motion into linear motion, wherein power is transmitted between a nut screwing along a threaded spindle or lead screw driven by the driving member and a non-rotatable axially displaceable tubular piston coaxially embracing the nut and connected with the driven member, through the medium of a locking spring, the ends of which, by means of a longitudinally slotted bush fixed in the tubular piston, are so influenced that for the transmission of power the locking spring bears tightly upon the nut and prevents it from rotating with the lead screw, whereas in the overrunning position the spring is relaxed to release the nut, so that it can rotate with the lead screw. The nut is held in a mid position in the tubular piston between two compression springs, and, when the piston is locked, is axially displaced in the latter. The locking ring, which is mounted upon the not on the lead screw, is located between two entraining rings loosely embracing the nut, these entraining rings being each held between two expanding split spreader rings, each inserted in an annular grove in the nut. Each entraining ring as at least one projection, which engages in a recess in the adjacent end face of the locking spring, and also has a projection extending radially outwards, upon which latter projection a control member located in the longitudinal slot of the bush and embracing the nut together with the locking spring, is provided with recesses for slidably guiding the said projections in an axial direction.

3,371,551
NUT AND SCREW MECHANISM
Anthony G. Profet, Charlotte, N.C., assignor to Duff-Norton Company, Charlotte, N.C., a corporation of North Carolina
Filed Sept. 1, 1966, Ser. No. 576,695
11 Claims. (Cl. 74—424.8)

8. A ball screw jack mechanism comprising a housing, an annular drive member seated in said housing for rotation therein, means for driving said annular drive member, a nut member seated in said annular drive member for rotation therewith, said nut member having a helically threaded interior surface, a screw member extending through said housing and nut member and having a helically threaded exterior surface mating with said nut member threaded surface, a plurality of ball bearing elements disposed for circulation in the threads of said mating

surfaces for drivingly connecting the screw member to said nut member, said nut member having a plurality of longitudinally extending, thread interrupting, recesses formed in said threaded surface thereof, said recesses being longitudinally coextensive for interruption of a plurality of common revolutions of the threads of the nut



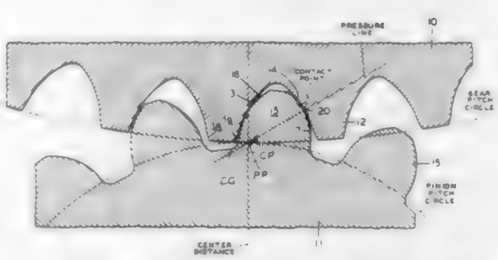
member surface, and an insert member seated in each of said plurality of recesses and having a plurality of return grooves formed thereacross with each groove connecting adjacent interruptions of said thread revolutions to form a return path for said ball bearing elements across the thread crest of said screw member surface for closed circuit recirculation of said ball bearing elements.

3,371,552

ROLLING CONTACT GEAR

Guy E. Soper, Williamsport, Md., assignor to Mack Trucks, Inc., Montvale, N.J., a corporation of New York

Filed Aug. 30, 1965, Ser. No. 483,547
4 Claims. (Cl. 74—462)



Rolling contact helical gears are provided which are insensitive to normal manufacturing errors and to changes in the center distances between the gears arising from variation of the load on the gears and are characterized by gear teeth having tooth profiles formed as circular arcs, the centers of which are located on the line passing through the pitch point and contact point of the gear teeth and in which the spacing of the centers of the tooth profile arcs from the pitch point are in proportion to the number of teeth on the gears.

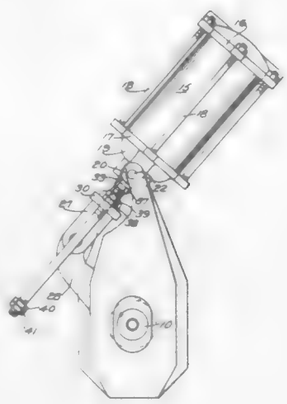
3,371,553

STOP FOR VALVE OPERATOR

Irving O. Miner, Warwick, R.I., assignor to The New York Air Brake Company, a corporation of New Jersey

Filed June 15, 1966, Ser. No. 557,754
5 Claims. (Cl. 74—526)

A power operated piston has a yoke mounted on the piston rod and a pair of guide rods received into the cylinder head. The yoke slidably reciprocates along the guide rods. A link pivotally attached to the yoke and



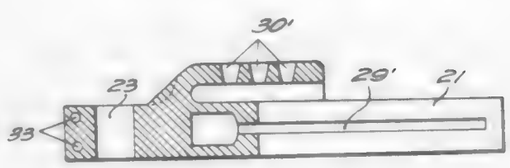
an arm rotatably operates a valve shaft. Stop means are provided on the guide rods to limit movement of the valve shaft.

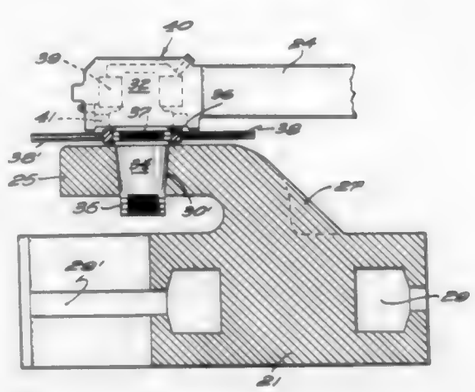
3,371,554

INTEGRAL CRANK AND PHASED COUNTERWEIGHT ARM

Harold E. McCray and Rue S. Hestand, Pampa, Tex., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

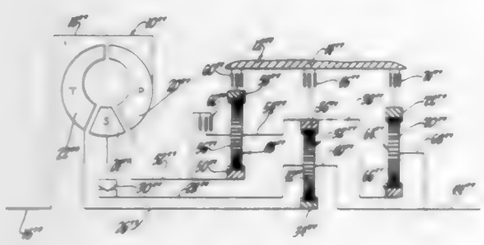
Filed Oct. 18, 1965, Ser. No. 497,084
4 Claims. (Cl. 74—600)





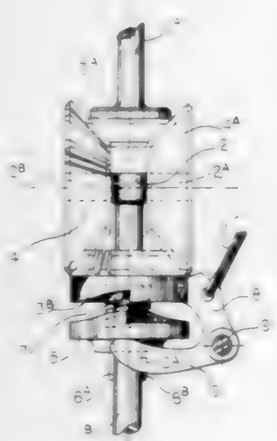
1. An integral crank and counterweight arm comprising a main elongated body portion having a crank shaft fitting near one end and a groove in either longitudinal edge for mounting counterweights thereon in slidably adjustable positions therealong and, rigidly joined to and firmly rooted in one side face of said main body portion near the crankshaft end thereof, a raised, rigid, skirt-like projection which rises from its firmly rooted connection with said body portion and translates into a major flat section which is spaced apart from said body portion and has fittings therein for attaching wrist pin assemblies thereto at a substantial acute angular crank position relative to the effective torque arm of said counterweights.

3,371,555
TRANSMISSION
Robert M. Tuck and Kenneth B. Harmon, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,181
3 Claims. (Cl. 74—677)



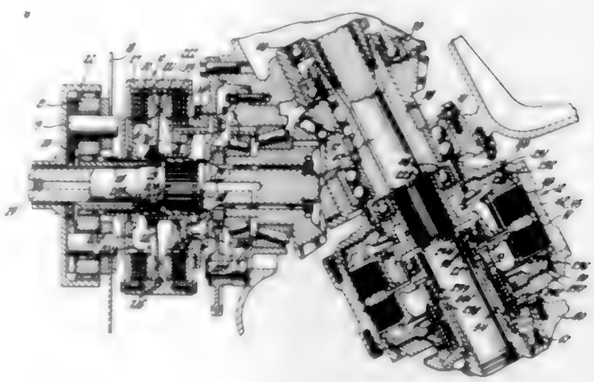
A transmission having a torque converter combined with a multiratio gear unit to provide torque converter and reduction gear ratio series drive in the lowest drive range and split torque drive in the higher drive ranges. The converter's stator is connected by a one-way clutch to the transmission output so that during converter operation in all of the forward drive ranges the stator reaction is directly substracted from the output and the stator is permitted to run faster than the transmission output for increased efficiency in the coupling stage. The stator connection also provides for input power to be fed from the gear unit back to the torque converter for increased converter performance in the higher drive ranges.

3,371,556
TRANSMISSION MECHANISM
Normand Duchesne, 335 Tessier St., La Tuque, Quebec, Canada
Continuation-in-part of application Ser. No. 402,502, Oct. 8, 1964. This application Dec. 6, 1966, Ser. No. 599,464
7 Claims. (Cl. 74—777)



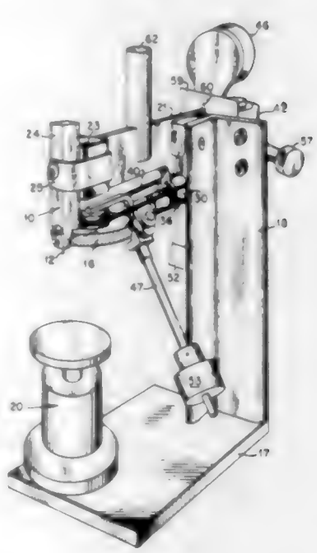
A transmission mechanism comprising two pairs of gears mounted to rotate on mutually transverse interconnected shafts with both gears of one pair of gears meshing with both gears of the other pair of gears, a second shaft coaxial with one of said mutually transverse shafts, and a clutch to selectively prevent rotation of one gear on one of said coaxial shafts and the other gear being fixed to one of said coaxial shafts and means to selectively connect said one gear to one of said coaxial shafts for rotation therewith thereby to vary the output of the transmission.

3,371,557
TRANSMISSION
Charles R. Lammert, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 13, 1965, Ser. No. 495,499
15 Claims. (Cl. 74—781)



A rotatable bearing support for a friction drive establishing device is herein disclosed in which the support is centrally located within a rotary housing so that the bearing load is substantially radial. Either the rotary housing or hub member enclosed within the housing can be supported by the rotatable bearing support.

3,371,558
ROTARY DRILLING DEVICE
Charles Asmanes, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 15, 1966, Ser. No. 529,179
10 Claims. (Cl. 77—29)



1. A high-speed rotary drilling device of the character described, comprising a housing, bearing means carried by said housing for supporting a drill bit having an axis of rotation, rotatable means having a plane of rotation disposed generally perpendicular to said axis and spaced from said bearing means, said rotatable means being engageable with said drill bit when the latter is in said bearing means for maintaining said drill bit in an abutting relationship with said bearing means and for imparting a rotational force to said drill bit to effect rotation of the

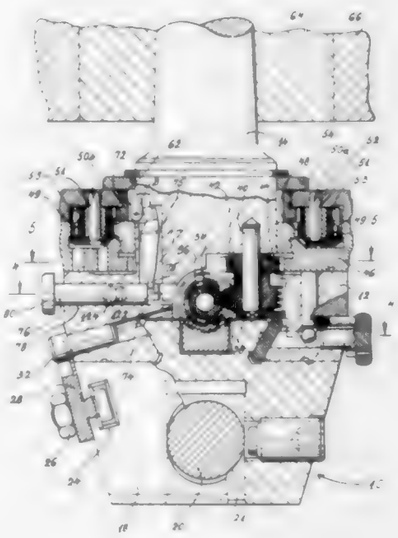
latter about said axis, and means coupled to said rotatable means for selectively positioning the plane of rotation of the rotatable means for redirecting a portion of the rotational force from a plane normal to said axis toward a plane parallel with said axis to effect relative movement of said drill bit with respect to said bearing means in a direction parallel to said axis.

3,371,559

MEANS FOR AUTOMATIC TOOL FEED AND RETRACTION CONTROL OF BORING AND FACING HEADS

Jule A. Scholl, 41—31 51st St., Woodside, N.Y., 11377

Filed July 15, 1966, Ser. No. 565,422
9 Claims. (Cl. 77—58)



1. A clutch control device for a clutch mechanism in a boring and facing head having a body rotatable on an axis, a tool supporting carriage mounted on said body and movable thereon in a straight path transversely of said axis, a stationary member slidingly engaged with said body while the body rotates, and a gear train operatively interconnecting said stationary member and carriage to drive the same transversely of said body, said clutch mechanism being interposed between said gear train and stationary member; said device comprising clutch means yieldably holding said gear train in operative engagement with stationary member so that the clutch means yields when said carriage encounters an obstruction to lateral movement on said body while the body continues to rotate in one direction, and so that the clutch means automatically operatively reengages said gear train and stationary member when the body is rotated in an opposite direction while the carriage moves away from said obstruction.

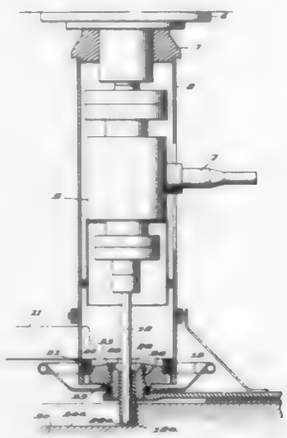
3,371,560

DEVICE FOR ACCURATE GUIDING OF DRILLING TOOLS IN DRILLING MACHINES

Alfred Käser, Rieden, near Baden, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Sept. 23, 1965, Ser. No. 489,628
Claims priority, application Switzerland, Oct. 23, 1964, 13,780/64
4 Claims. (Cl. 77—62)

A device for accurate guiding drilling tools in drilling machines comprises a guide bushing surrounding the drill shaft adjacent the surface of the workpiece to be drilled. The lower end of the guide bushing terminates in an



edge and this edge is forced downwardly into a penetrating contact with the surface of the workpiece as a downward force is applied to the bushing.

3,371,561

SAFETY PIN-APPLYING TOOLS

Norman A. Fabricant, 290 Birch St., Emerson, N.J. 07630

Filed Dec. 30, 1966, Ser. No. 606,171
9 Claims. (Cl. 81—3)

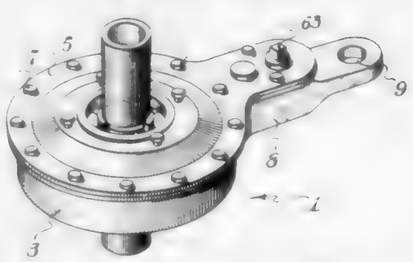
A safety or diaper pin insertion device, shaped like a thimble or ring and worn on a finger. It contains a projection which fits inside the coil of the pin, and other projections which orient the legs of the pin. The pin is thus held under explicit control during insertion and the finger is protected from the painful pressure normally required to push the pin through several layers of diapers.

3,371,562

GRAPPLE

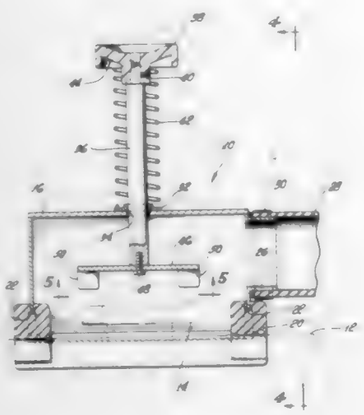
Benjamin F. Kelley, 2711 E. 13th Place, Tulsa, Okla. 74104

Filed Oct. 23, 1965, Ser. No. 503,712
2 Claims. (Cl. 81—54)



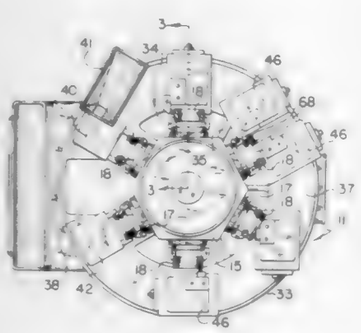
A grapple comprises a plurality of radially reciprocable jaws spring-urged outwardly, and movable inwardly by the rotation of a ring that has cam surfaces that bear against the radially outer ends of the jaws. A special brake and a special bumper are provided, as well as a special configuration of the jaw mountings.

3,371,563
SAFETY RADIATOR CAP REMOVAL TOOL
Matthew J. Lallo, 1041 Windsor Drive,
Thousand Oaks, Calif. 91360
Filed Aug. 11, 1966, Ser. No. 571,800
4 Claims. (Cl. 81—90)



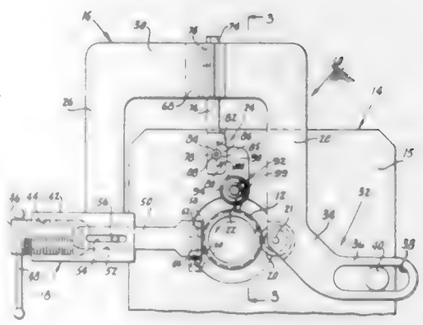
A removal tool for safely removing a radiator cap comprising steam retaining chamber which is positionable over a radiator cap and a radiator. A shaft is slideably and rotatably received in the retainer and has a device interior of the chamber for gripping the cap at one end and a handle exterior of the chamber at the other end. A spring is positioned about the shaft between the handle and the steam retaining chamber so that, when the shaft is depressed and the gripping device engages the cap, the spring will exert a force on the retainer which force is greater than any steam pressure which may emanate from the radiator.

3,371,564
STAR AUTOMATIC MACHINE
Karl P. Schubert, Cleveland Heights, John L. Molner, Cleveland, Ohio, assignors to The National Acme Company, a corporation of Ohio
Filed Oct. 4, 1965, Ser. No. 492,807
15 Claims. (Cl. 82—3)



The disclosure relates to a machine tool which has a turret carrying workholding spindles rotatable on horizontal axes extending radially from the vertical turret axis. The turret is indexable into positions equal to the number of spindles. A ring shaped table surrounds the turret and tool holder slide units are mounted on bases on the table. One or more of these slide units may cooperate at each spindle position and the slide units are driven by a cam which permits the slide units to be disposed at any angle in a horizontal plane for making facing, angular or lengthwise cuts on the workpieces in the turret spindles.

3,371,565
PIPE CUTTING AND BEVELING DEVICE
Johnny W. Mayfield, 617 Main Ave.,
Sacramento, Calif. 95838
Filed Feb. 2, 1966, Ser. No. 514,446
8 Claims. (Cl. 82—4)

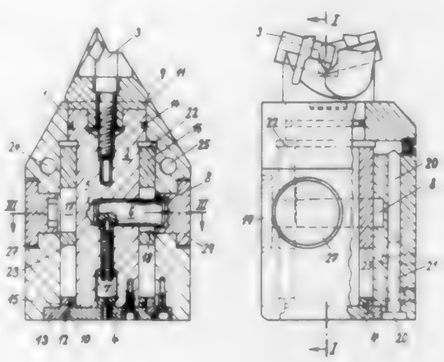


A hand operated tool including an open frame having portions thereof disposed in confronting spaced relation relative to an elongated conduit mounted for rotation about its longitudinal axis, a conduit cutting blade mounted on the frame, means on the frame engaging the conduit and being operable to move and force the cutting blade through the conduit in a direction substantially perpendicular to the longitudinal axis thereof, a beveling knife on the frame, said beveling knife being mounted on the frame in lagging relationship relative to the cutting wheel and being coplanar therewith, the beveling knife being engageable with the conduit within the cut formed by the cutting blade, and means on the frame cooperating with the beveling knife to move, selectively, the beveling knife in directions substantially perpendicular and parallel to the longitudinal axis of the conduit to effect a bevel at the severed ends of the conduit and without forming an internal burr of appreciable size as the beveling tool follows the cutting wheel inwardly relative to the longitudinal axis of the conduit.

3,371,566
TOOLHOLDER
Herbert Gramespacher, Schaffhausen, Switzerland, assignor to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland
Filed Dec. 16, 1965, Ser. No. 514,235
Claims priority, application Switzerland, Dec. 30, 1964, 16,827/64
2 Claims. (Cl. 82—36)

The present invention relates to a hydraulically operable turnable toolholder, by means of which the machining tool is turnable about an axis and is held in its respective adjusted working position. The toolholder according to the present invention is characterized primarily in that a rotary piston fixedly connected to the toolholder has rotatably and axially displaceably mounted thereon a sliding member the circumferential portion of which is provided with two inclined slots having shortly ahead of their ends a sharp bend. From these bends the said slots extend to the ends thereof slightly inclined with regard to the axis of rotation of the rotary piston. The toolholder according to the present invention is furthermore characterized in that a bolt fixedly connected to a rotary piston, and a pivot fixedly connected to the housing are

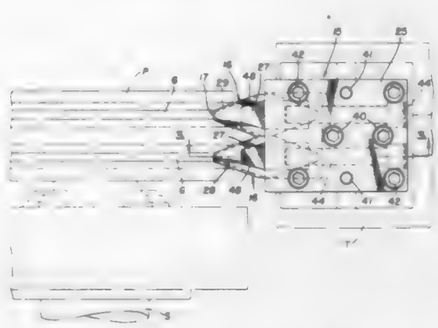
guided for reciprocatory movement in said two slots while said bolt is additionally guided in a semicircular groove in a housing. The said two slots are arranged in the sliding member with regard to the engaging surface of two abutments in such a way that the bolt connected to a rotary piston will, when the toolholder has been turned into the range of its working operation, engage the wall of a slot and the contacting surface of one abutment, said bolt being arrested or clamped fast by hydraulic pressure acting upon the sliding member.



3,371,567
CUTTING TOOL INSERT AND HOLDER ASSEMBLY

Paul Wayne Davis, Columbus, Ohio, assignor to The Capitol Machine Company, Columbus, Ohio, a corporation of Ohio

Filed June 2, 1966, Ser. No. 554,823
5 Claims. (Cl. 82—36)

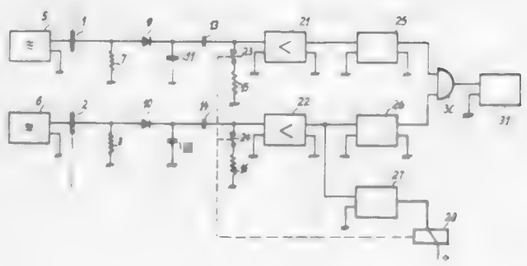


1. A tool insert and holder assembly comprising a pair of superimposed clamping blocks having an outwardly opening socket therebetween for receiving a plurality of inserts disposed in side-by-side edge contacting relationship, and a wedge clamp mounted in said socket for movement into and out of wedging relationship with said inserts, said socket having a pocket for the inserts for receiving them and supporting them with one face exposed, the opposed wall of the socket being angled and converging inwardly toward the first wall, said wedge clamp having a surface for engaging the face of the insert and an opposed angled surface for cooperating with said angled wall, and means for moving said wall clamp in and out of the socket to vary the wedging action on said tool inserts, said pocket being divided into chambers complemental to the shape of the inserts, said wedge clamp including individual wedge members for independently engaging the faces of the respective inserts, said inserts having opposed triangular ends, said chambers being triangular for receiving one end and being formed in one of said blocks, said block having outwardly extending triangular shelves which underlie the opposed outer triangular ends of said inserts.

3,371,568
METHOD AND APPARATUS FOR CHECKING KNOTS

Ernst Felix, Uster, Switzerland, assignor to Zellweger Ltd., Uster, Switzerland, a corporation of Switzerland

Filed Mar. 28, 1966, Ser. No. 537,884
Claims priority, application Switzerland, Mar. 31, 1965, 4,468/65
10 Claims. (Cl. 83—13)

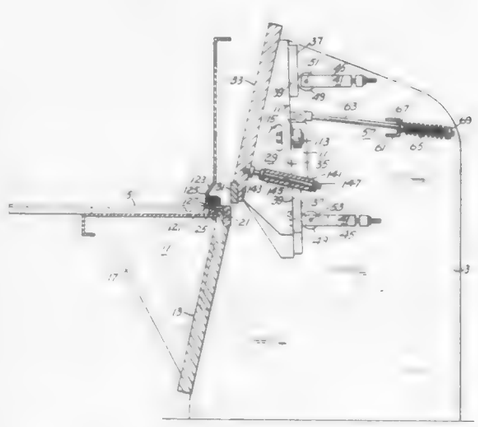


The present invention relates to methods and apparatus for checking knots in threads processed in the textile industry and for removing defective knots. In this invention a plurality of sensors are used to detect both the presence of a knot and the cross section of the thread in the vicinity of the detected knot. A thread cutter is actuated upon detection of the simultaneous presence of both a first signal indicative of the sensing of a knot and a second signal indicative of the sensing of a thread cross section in excess of a predetermined size.

3,371,569
SHEAR MACHINE OR THE LIKE

Eugene W. Pearson, Orinda, and Rolland A. Richardson, Alameda, Calif., assignors to Pacific Press & Shear Corp., a corporation of Illinois

Filed June 28, 1965, Ser. No. 467,210
18 Claims. (Cl. 83—582)



1. A shear machine comprising
a pair of side housings,
a work support spanning said side housings,
means for supporting a lower blade adjacent the rear edge of said work support,
a ram assembly for carrying an upper blade at a rake angle for cooperation with such lower blade in the shearing of material, said ram assembly including a ram having rearward extensions terminating in sub-

stantially vertical bearing surfaces, with said ram disposed at an angle to said surfaces and in a plane substantially intersecting the line of cut during shearing,

means carried by said side housings for bearing engagement with said substantially vertical bearing surfaces,

means for applying a rearward horizontal component of force to said ram assembly to normally hold said ram assembly in sliding engagement with said bearing engagement means,

and means for applying a vertical component of force to said ram assembly of sufficient magnitude to produce shearing, and a simultaneous forward horizontal component of force in response to the spreading forces developed between blades during shearing

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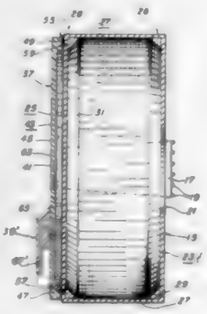
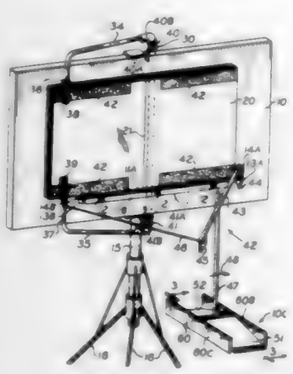
3,371,570
STRAPLESS SUPPORT MEANS FOR A GUITAR
Luther D. Lester, Madison Hotel, 223 Madison Ave., Memphis, Tenn. 38103
Filed Mar. 10, 1967, Ser. No. 622,288
5 Claims. (Cl. 84—327)



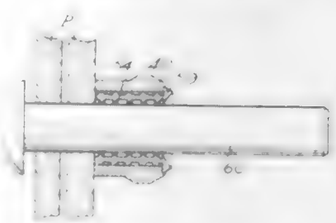
An assembly adapted for securement on the back of a guitar body for supporting the guitar in a playing position. The assembly includes at least one downwardly projecting hook fixed at the back of the guitar body and adapted to be hooked over the belt or waist-encircling garment of the musician or player.

3,371,571
PAGE-TURNING ASSEMBLY
Edmund C. Barbera, 55 Hillandale Road, Rye, N.Y. 10580
Filed Dec. 30, 1964, Ser. No. 422,310
7 Claims. (Cl. 84—502)



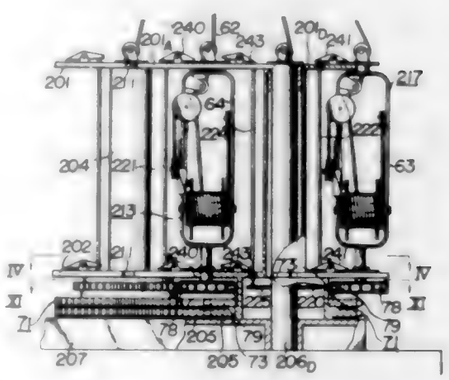
A page-turning apparatus for a book which includes an easel for supporting a book in an upright, open position. A shaft extends transversely with the easel and is mounted for turning movement about an axis parallel and offset from the spine of a book supported on the easel. Arms extend laterally from opposite ends of the shaft and include page-gripping fingers which normally overlie and engage the page adjacent the upper and lower edges of the book. The invention further includes means for biasing the shaft in one direction and means for rotating the shaft in the opposite direction to move the arms through a page-turning sweep of substantial circumference so that the uppermost page at one side of the book is turned by the gripping fingers to the other side of the book as the fingers move laterally out of gripping contact with the page.

3,371,572
LOCKING BOLT AND LOCKING MEANS THEREFOR
John O. King, Jr., 110 Lake Forrest Lane, Atlanta, Ga. 30305
Filed Nov. 1, 1965, Ser. No. 505,825
10 Claims. (Cl. 85—7)



A fastener for attaching material together having aligned openings therethrough comprising a locking bolt having a head, shank portion, and a swageable collar receivable around the shank portion and effective to be swaged around the locking bolt by a swaging tool which forces the collar toward the head of the locking bolt; and further includes a scoring means being retained by the collar adjacent that end of the collar engaged by the swaging tool. The scoring means may be separate or may be an integral part of the insert placed inside of the collar. The scoring means is removed from the collar by forcing the material of the collar retaining the scoring means away from the scoring means to force the scoring means from the collar as an incident of the swaging operation and, if the scoring means is an integral part of the insert, the scoring means is also sheared from the insert as it is removed from the collar as an incident of the swaging operation.

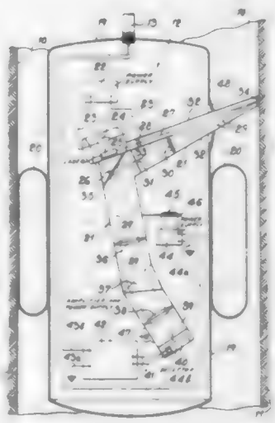
3,371,573
BRAIDING MACHINES
Yoshiaki Koreki, 6–225 Asagaya, Suginami-ku, Tokyo, Japan, and Ryosuke Kondo, 27–3 Higashinakahatu, Katahara-machi, Gamagohri-shi, Aichi-ken, Japan
Continuation-in-part of application Ser. No. 402,720, Oct. 9, 1964. This application Sept. 26, 1966, Ser. No. 581,867
3 Claims. (Cl. 87—37)



A braiding machine with rotating disc assemblies and bobbin carriers mounted thereon. The bobbin carriers

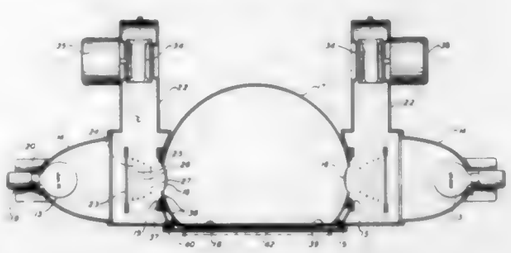
are rotated at the same angular velocity as the disc assemblies but in a reverse direction of rotation to that of the disc assemblies.

3,371,574
OIL DETECTION DEVICE UTILIZING RAMAN RADIATION
Robert J. Dwyer, 46A Seth Court, Staten Island, N.Y. 10301
Filed July 31, 1963, Ser. No. 298,975
4 Claims. (Cl. 88—14)



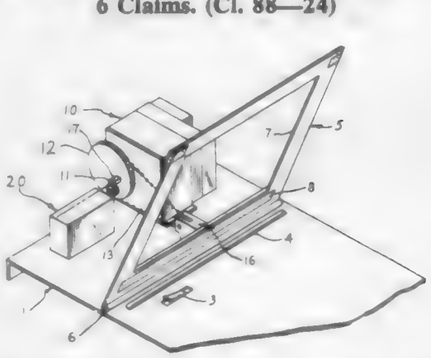
Unitary means for lowering into a bore hole to find oil including a monochromatic radiation source which is a laser, a spectrometer filter, a detector for Raman radiation and a transmitter which takes the scattered Raman radiation filtered on each side of the 3000 reciprocal wave number characteristic of the detected C–H vibration resonance frequency and transmits it in the form of a pulse to the surface of the ground to demonstrate traces of oil in said hole.

3,371,575
ILLUMINATING APPARATUS FOR PHOTOGRAPHIC ENLARGERS PROVIDED WITH INTERCHANGEABLE INTEGRATING BODIES
Alfred Simmon, New York, N.Y., assignor to Simmon Brothers, Inc., Woodside, N.Y., a corporation of New York
Filed Apr. 12, 1965, Ser. No. 447,326
8 Claims. (Cl. 88—24)



1. An illuminating apparatus for photographic enlargers comprising a light source, a light collector, a number of light integrating bodies of different dimensions, and an apertured stage adapted to support a negative or transparency, said light collector including a reflector formed by a substantially elliptical surface of revolution having a specularly reflecting interior surface, said elliptical surface of revolution having two focal points, said light source positioned substantially at one of said focal points, each of said integrating bodies being hollow of substantially spherical shape with a matte diffusely reflecting substantially white interior surface, each integrating body including means defining a relatively large aperture and a relatively small aperture, means positioning any one of said integrating bodies in close proximity to said negative stage with said large aperture in juxtaposition and in alignment with the aperture of said negative stage, and means to adjust the position of said light collector with respect to the position of said integrating body whereby the second focal point of said elliptical surface of revolution is substantially within the area of said relatively small aperture.

3,371,576
ENLARGER EASEL
Charles W. Miller, Cedar Lane Trailer Court, Radcliff, Ky. 40160
Filed July 14, 1965, Ser. No. 471,976
6 Claims. (Cl. 88—24)



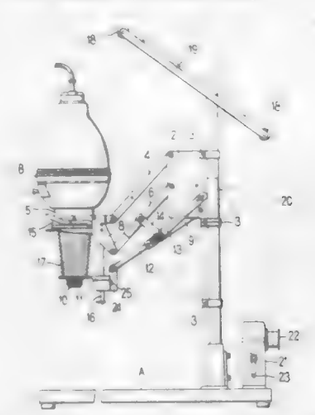
1. An enlarger easel for receiving and "framing" a sheet of sensitized photographic paper while an enlarged image is formed theron, comprising:

(A) a base member providing a receiving surface on which a sensitized sheet is to be operatively centered;

(B) a framing platen mounted for movement relative to said surface into and out of an operative position in which it frames a centered sheet on said sheet-receiving surface; and

(C) platen-moving means operative, in response to the placement of a sheet on said surface, to move said platen into and out of said operative sheet-framing position.

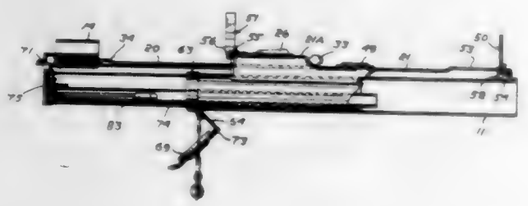
3,371,577
AUTOFOCUS ENLARGER
Shinzaburo Yatera, 3076 Kisabe, Katano-cho, Kitakawachi, Osaka, Japan
Filed Mar. 15, 1965, Ser. No. 439,723
5 Claims. (Cl. 88—24)



An automatic focus adjusting enlarger apparatus, comprising a supporting member, a standing column along which said supporting member is movable in a vertical direction and to which said member can be fixed, an enlarger head, an enlarging lens holder for holding an enlarging lens and mounted on the lower part of the en-

larger head and movable relative thereto along the enlarger axis, a parallel motion means connected between said supporting member and said enlarger head for moving said enlarger head along an axis parallel to the standing column, and a lens holder adjusting linkage connected between said supporting member and said lens holder and also connected to said parallel motion means for moving said lens holder relative to said enlarger head when said parallel motion means moves said enlarger head.

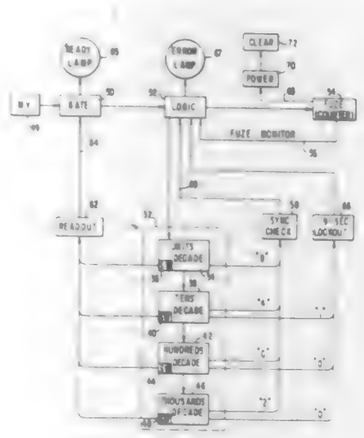
3,371,578
ROCKET LAUNCHERS
Paul V. Choate, Milton, and Frank A. Spinale, Beverly, Mass., assignors to Norris Industries, Inc., Los Angeles, Calif., a corporation of California
Filed June 20, 1966, Ser. No. 558,656
14 Claims. (Cl. 89—1.813)



1. In a rocket launcher, first and second tubular sections telescopingly connected to enable said launcher to be extended from a shortened, inoperative position into an elongated, operative position, one end of said first section being the breech end of the launcher, said first section fitting within said second section, said first section including a first rigid member overlying said second section, said second section and said first member including portions releasably interengaged in said operative position, and means to fire a rocket positioned in said first launcher section, said means including a second rigid member which is the firing member and is movable relative to said first section between a rearward firing position and a forward cocked position, a firing spring tensioned by movement of said firing member into said cocked position, said members including means interengaged to cause their movement together relative to said second launcher section as said launcher is extended and trigger means releasably connecting said firing member to said second section when only a predetermined short further relative movement of said sections is required to establish said operative position, said interengaged means providing for corresponding short movement of the firing member relative to the first member whereby said spring becomes tensioned during said short relative movement, and a safety operable to disengage said interengaged means.

3,371,579
FAILSAFE FUZE-SETTING SYSTEM
Gerald W. Kinzelman, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 12, 1966, Ser. No. 601,240
8 Claims. (Cl. 89—6)

1. A failsafe fuze-setting system comprising:
(a) a fuze setter comprising:
(1) a setter-counter,
(2) means to read out said counter when a predetermined count is stored therein, and
(3) a count comparison means connected to said setter-counter,
(b) a fuze comprising:
(1) a fuze counter, and
(2) means connecting said fuze counter to said count comparison means, and
(c) means for applying count pulses simultaneously to said fuze setter and to said fuze, whereby said count



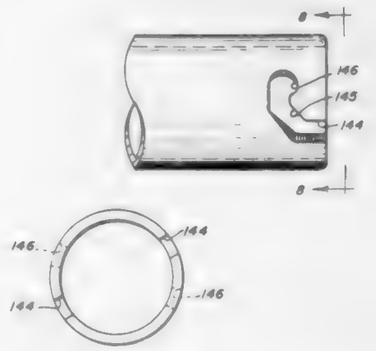
comparison means is operative to produce an error signal when said counters are not in synchronism.

3,371,580
MULTIPLE AXIS MILLING MACHINE AND FIXTURE
Clair E. Barnes and Clint T. Hays, Long Beach, and Richard A. Myers, Rolling Hills, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Jan. 21, 1966, Ser. No. 522,079
10 Claims. (Cl. 90—11)

5. A multiple position work holding fixture for cooperative use with a multiple spindle milling machine having multiple axes of movement, comprising: an upright frame generally defining a vertical plane; support brackets on said frame extending forwardly of its plane; a plurality of horizontally elongate work holding tables pivotally mounted on said brackets for rotation about horizontal axes; said tables being vertically spaced from each other with their axes of rotation all lying in a common vertical plane and having front faces for the reception of substantially identical work pieces; said tables having a neutral position in which said front faces lie in a common vertical reference plane; and means to tilt said tables out of said reference plane in unison about their axes of rotation to exactly the same angular extent for cooperation with a set of identical milling cutters; said

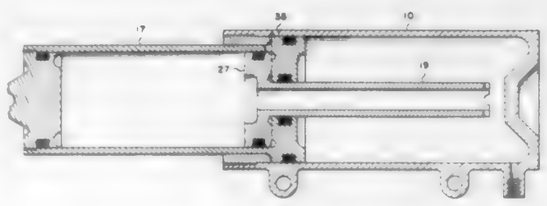
means comprising at least one gear segment secured to each table and lying in a common vertical plane normal to said reference plane; a vertically extending rack vertically movably carried by said frame and having teeth in driving engagement with each of said gear segments; and drive means to reciprocate said rack vertically to rotate each of said gear segments and their associated tables through identical vertical angles.

3,371,581
MILLING APPARATUS
Elmer O. White, Euclid, Ohio, assignor to The National Acme Company, a corporation of Ohio
Filed Feb. 9, 1966, Ser. No. 526,204
11 Claims. (Cl. 90—15)



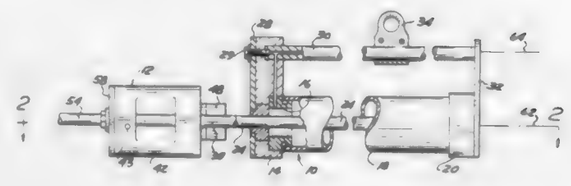
9. The method of making matching bayonet slots located circumferentially 180 degrees from each other in the end portion of an annular workpiece having a bore therein comprising the steps of moving an annular workpiece and a milling cutter which rotates about an axis generally normal to the axis of the workpiece, relatively toward each other in the direction of the workpiece axis to produce longitudinal axial slots in the workpiece of a given length and 180 degrees apart, arcuately moving the milling cutter and workpiece relative to each other about an axis generally parallel to the workpiece axis to produce circumferential slots of a given length and 180 degrees apart, and thereafter retracing the aforementioned movements to remove the milling cutter from the axial extent of the workpiece.

3,371,582
FLUID POWER ACTUATOR
Jacob Schmidt, Van Nuys, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 16, 1965, Ser. No. 487,664
3 Claims. (Cl. 92—52)



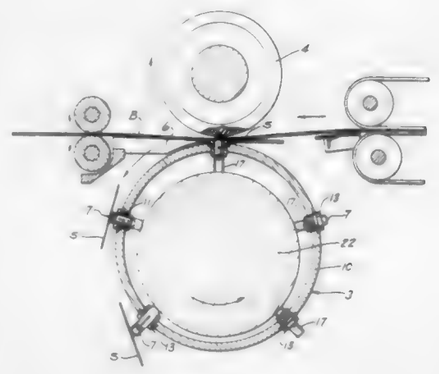
A short, compact double cylinder is provided which consists of a piston within a piston and its cylinder. The inner piston is moved by the main piston at one end of its stroke to reduce the effective force of the main piston. This results in a stepped output force and by predesigning the relative lengths of the piston, the location of the step is established.

3,371,583
MATERIAL-HANDLING DEVICE ACTUATOR
Leland F. Blatt, Grosse Pointe, Mich. (24121 Mound Road, Warren, Mich. 48091)
Filed Mar. 11, 1966, Ser. No. 533,590
1 Claim. (Cl. 92—61)



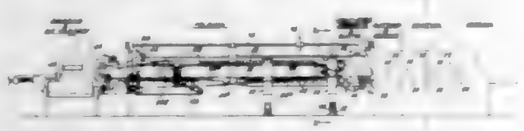
An actuating mechanism for a reciprocating workpiece gripper comprises a pair of parallel fluid actuated power cylinders mounted in tandem so that the gripper actuating cylinder is mounted for reciprocation with the travel cylinder piston rod. Guide rods for the actuating cylinder structure double as conduits for supplying actuating pressure to the actuating cylinder chamber. A support rod for the entire mechanism doubles as a conduit for supplying actuating pressure to the travel cylinder chamber.

3,371,584
SELF-COMBING PIN TYPE STRIPPER FOR BLANK-FORMING APPARATUS
Peter Zernov, Milwaukee, Wis., assignor to Zerand Corporation, Menomonee Falls, Wis., a corporation of Wisconsin
Filed July 8, 1966, Ser. No. 563,797
5 Claims. (Cl. 93—36)



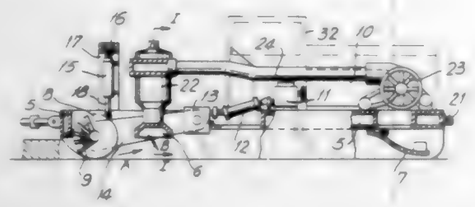
1. Self-combing, pin type stripper mechanism for blank forming apparatus comprising, a rotatable hollow cylinder having a plurality of openings therein, a bushing fixed in said openings and having a radially outer end, said bushing also having a bore extending therethrough and in a generally radial direction, a radially fixed pin mounted in said bore in said bushing and having a sharpened head which extends radially beyond the radially outer end of said bushing for impaling a blank scrap portion, a sleeve slidable in said bore and around said pin for sliding between a position in which it is retracted completely within said bushing and a position in which it extends radially beyond said sharpened head of the pin so as to force a blank scrap portion therefrom, and means within said hollow cylinder for causing said sliding movement of said sleeves in timed relationship with rotation of said cylinder.

3,371,585
GLUED FLAP BOX FOLDING MACHINE
Henry W. Moser, Haddonfield, N.J., and William Grobman, Philadelphia, Pa., assignors, by mesne assignments, to The Langston Company, Camden, N.J., a corporation of New Jersey
Filed Oct. 14, 1963, Ser. No. 316,495
9 Claims. (Cl. 93—52)



1. In a glued flap box folding machine, a folder section, folding belts on each side of said section, said belts being so driven as to fold panels of a box blank inwardly from the top and upwardly into juxtaposition with the remainder of the blank, an upper traction belt, pressure rolls above said upper traction belt, and means resiliently mounting said pressure rolls for automatic adjustment for board thickness throw-out means mounting some of said pressure rolls in proximity to the discharge end of the machine and operable to facilitate jam removal.

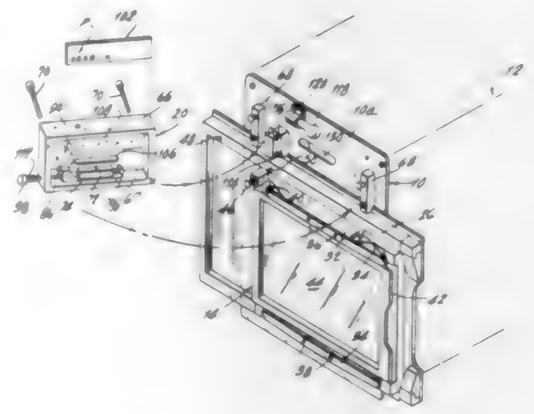
3,371,586
APPARATUS FOR PACKING SNOW TO OBTAIN A SNOW AND ICE COVER SURFACE
Arkady Fedorovich Nikolaev, Ulitsa Gorkogo, 147A, Apt. 8; Evgeny Iljich Malekhanov, Prioksky region, 11 proezd 6, Apt. 3; Stanislav Sergeevich Solovjev, Ulitsa Suetinskaja, 19, Apt. 10; Alexei Stepanovich Khrjapchenkov, Studenchesky pereulok 5, Apt. 12; Vitaly Ionovich Vologdin, "Vuzstroi," 19, Apt. 4; Mikhail Jurjevich Banige, Ulitsa Belinskogo, 122A, Apt. 9; Antonin Ivanovich Smirnov, Ulitsa Estonskaja, 53, Apt. 1; and Davud Rasoolovich Bootaev, Arzamasskoe chausee, 1; all of Gorky, U.S.S.R.
Filed July 30, 1965, Ser. No. 476,088
6 Claims. (Cl. 94—39)



Apparatus comprising an assembly of three detachably coupled units in which the first unit serves to displace the assembly over a snow surface, the second unit comminutes snow and lays down a melted layer on the snow surface and the third unit compacts the layer and snow surface.

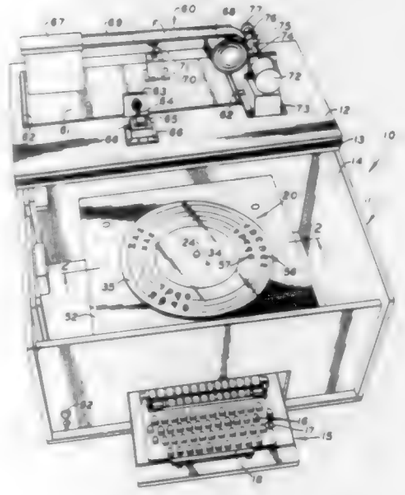
3,371,587
CAMERA POSE COUNTER
Josef Galletta, Brooklyn, N.Y., assignor to Kemex Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York
Filed Aug. 27, 1965, Ser. No. 483,188
2 Claims. (Cl. 95—1.1)

1. The combination with a camera including plural walls and having means mounting film within said camera adjacent the rear wall thereof of a pose counter comprising a number-displaying device presenting numbers in display and including means mounting said device externally on said camera rear wall, a periscope supported on said camera in position for transmitting reflected light from said externally mounted number-displaying device to said internally mounted film, said periscope having one end in alignment with said numbers in display and its opposite end in alignment with an opening to said film in said camera rear wall, wherein reflected light transmitted through said periscope is effective to expose an area on said film with said numbers in display on said number-displaying device including a rotatable wheel displaying circumferentially spaced numbers and means mounting said wheel such that a number thereon forms one of said numbers in display, and means to advance said wheel in rotation for the successive numbering of



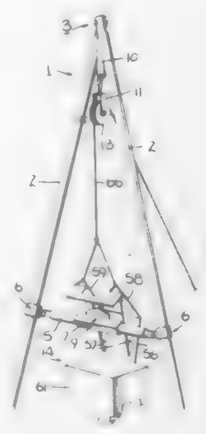
film for identification purposes, and a shutter mechanism and stop means movable between a clearance position relative to said shutter mechanism and an operative position preventing the operation of said shutter mechanism, said stop means being normally in said operative position and operatively connected to said wheel advancing means of said number-displaying device wherein actuation of said wheel advancing means is effective to actuate said stop means into said clearance position permitting the operation of said shutter mechanism.

3,371,588
PHOTOCOMPOSING MACHINE
Frederick C. Tambling, 1921 Burlington Road, Akron, Ohio 44313
Filed Oct. 21, 1965, Ser. No. 499,271
4 Claims. (Cl. 95—4.5)



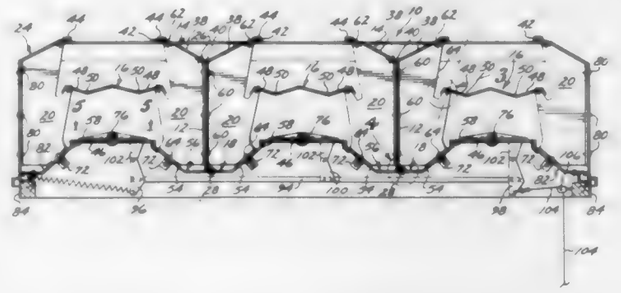
A unitary automatic type composer, having a rotary font disc indexed to an exposure or printing station by selective actuation of a character key on a matrix or keyboard, and having mechanically and electrically interlocked index registry and film or paper transfer devices.

3,371,589
BIPOD CAMERA SUPPORT
Julian Hill Whittlesey, 122 E. 65th St., New York, N.Y. 10021
Filed June 21, 1965, Ser. No. 465,505
8 Claims. (Cl. 95—86)



The camera support consists of an A-shaped frame mounted for pivotal movement at the base of the legs. The camera is mounted on a pulley system from the apex of the A-shaped frame. Pairs of photographs are obtained by pivoting the frame between two spaced points of equal distance from a vertical plane through the base of the frame.

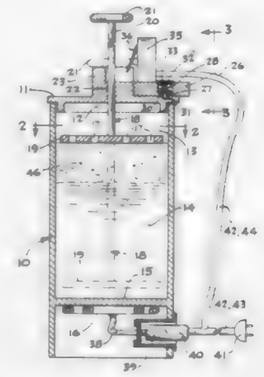
3,371,590
VENTILATOR
Wolfram G. Korff, Granada Hills, Calif., assignor to Western Engineering & Mfg. Co., Los Angeles, Calif., a corporation of California
Filed Jan. 24, 1966, Ser. No. 522,622
2 Claims. (Cl. 98—42)



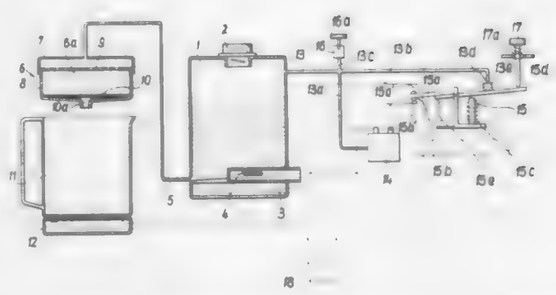
A ventilator having an arrangement of baffles and rain gutters adapted to vent air through a building roof while preventing rain from entering the building, the ventilator being assembled in a manner affording structural rigidity for long spans and affording damper actuation without torsional bending of the damper.

3,371,591
COFFEEMAKER
Edward C. Vandenburgh III, 31 Elizabeth Lane, Barrington, Ill. 60010
Filed Oct. 20, 1966, Ser. No. 588,056
6 Claims. (Cl. 99—281)

1. A coffeemaker for use in brewing coffee from ground coffee beans and adapted to be connected to a source of electricity, said coffeemaker comprising: pot means; a support movable vertically in said pot; an electrical heater for said pot for boiling the water in the pot; circuit means including a switch, said circuit means being connected to said heater and adapted to connect the heater to said source of electricity; and operating means operatively connecting said support and the switch for the switch to have one setting at an elevated position of the support and the switch to have a second setting at a lowered position of the support; said switch being connected to the heater so that the heat supplied to the pot at said one setting is sufficient to boil water therein while the heat supplied at the second setting is not sufficient to boil water therein; whereby said pot may be filled with water and said ground beans floated thereon with the floating beans carrying said support with said switch being at said first setting, said support having sufficient weight that when said beans fail to carry said support as a result of said boiling, said support will sink and change said switch to said second setting.



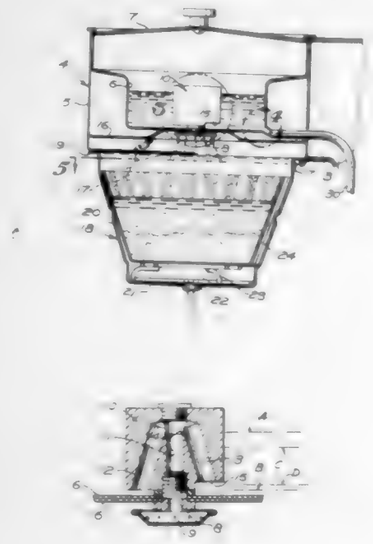
3,371,592
ELECTRIC COFFEEMAKER FOR DOMESTIC USE
Hermann Remy, Dietzenbach-Steinberg, near Offenbach am Main, and Kurt Wohlfart, Offenbach am Main, Germany, assignors to Rowenta Metallwarenfabrik G.m.b.H., Offenbach am Main, Germany
Filed Nov. 9, 1966, Ser. No. 593,013
Claims priority, application Germany, Nov. 20, 1965, R 42,031
12 Claims. (Cl. 99—282)



1. An electric coffeemaker comprising in combination:
(a) a pressure tight closed water boiler;
(b) a pressure tight receptacle for coffee ground connected to said boiler;
(c) an electrically operated air pump connected to said boiler for pressure feeding of water from the boiler to said receptacle by a build-up of air pressure in the boiler;
(d) electric heating means for heating water in said boiler;

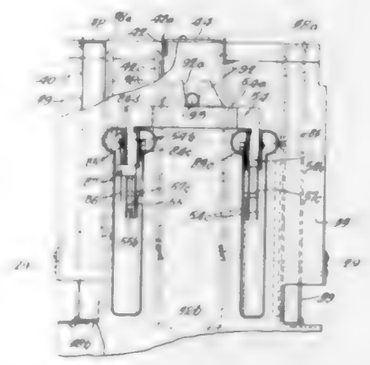
(e) an open air venting pipe connected to said boiler;
(f) a movable closure means for closing said venting pipe;
(g) an electromagnetic relay means controlling said boiler heating means, said pump and said closure means, said relay means in a first state of energization energizing the heating means and opening the venting pipe; and
(h) a temperature sensitive control means controlling said relay means to change the state of energization thereof from the first state to a second state and controlled by said boiler reaching a predetermined temperature;
(i) said change in the state of energization of said relay means causing movement of said closure means into the venting pipe closing position, disconnection of the heating means and starting of the pump.

3,371,593
COFFEE BREWING APPARATUS
Gail A. Price, Inglewood, Calif., assignor to Farmer Bros. Co., Torrance, Calif., a corporation of California
Continuation-in-part of application Ser. No. 373,240, June 8, 1964. This application June 10, 1966, Ser. No. 556,667
9 Claims. (Cl. 99—283)



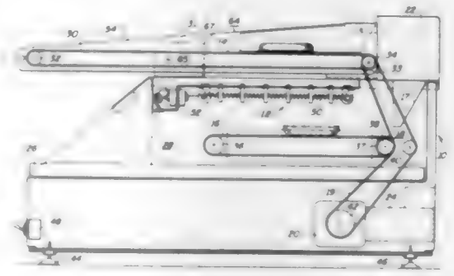
1. A coffee brewing apparatus, comprising:
(a) a hot water supply means including a tank, means for supplying a predetermined quantity of water to said tank for discharge of a like quantity of water therefrom, and a heating element to heat the water therein to brewing temperature;
(b) a brewing water receiver in communication with said tank;
(c) a spray nozzle for discharge of brewing water from said receiver;
(d) a siphon interposed between said spray nozzle and said receiver for delaying flow of brewing water from said spray nozzle until the water level in said receiver has reached a predetermined upper level and to terminate the flow of brewing water when the water has reached a predetermined lower level;
(e) the communication between said receiver and said tank being so arranged that, any water, due to expansion or presence of occluded gases, as said water is heated, which is in excess of the water supplied to said tank, is collected in said receiver, and is permitted to return to said tank as the temperature of the water reaches equilibrium;
(f) and a brewing vessel adapted to receive a filter and coffee, and adapted to be positioned under said spray nozzle for discharge of brewed coffee into a decanter.

3,371,594
BREAD TOASTER
Douglas F. Illian, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 26, 1966, Ser. No. 568,051
19 Claims. (Cl. 99—329)



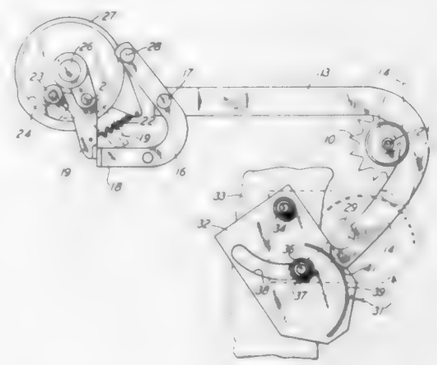
1. An automatic self-lowering toaster comprising a housing, spaced heating elements within said housing, a bread carriage movable between a raised position in which a piece of bread on the carriage protrudes from said housing and a lowered position in which said piece of bread is positioned between said heating elements, a thermal motor, linkage means interconnecting said carriage and said thermal motor to move said carriage to the lowered position on energization of said thermal motor, and means actuated by a slice of bread placed on said carriage to energize said thermal motor, said linkage including a resilient element which permits said carriage to be operated manually from said raised position to said lowered position independently of said thermal motor.

3,371,595
ENGLISH MUFFIN TOASTER
Peter S. Peters, Milton, Mass., assignor to Interstate Fabrications, Inc., Dorchester, Mass., a corporation of Massachusetts
Filed May 27, 1966, Ser. No. 553,563
10 Claims. (Cl. 99—352)



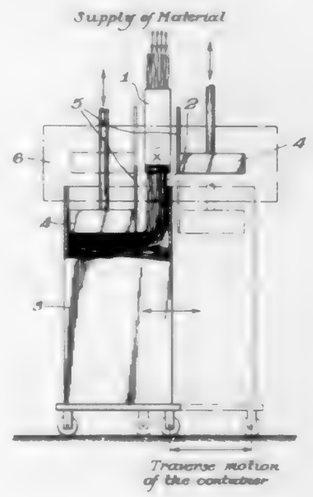
A continuous toaster for the severed sides of English muffin halves having a variable preheat cycle and a toasting cycle. Transfer means are provided to deliver the English muffin halves from the variable preheat cycle in the proper attitude to expose the severed sides of the English muffin halves to the toasting cycle.

3,371,596
BALE LENGTH CONTROL DEVICE
Carl D. Nelson, De Witt, Iowa, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Oct. 12, 1966, Ser. No. 586,109
3 Claims. (Cl. 100—4)



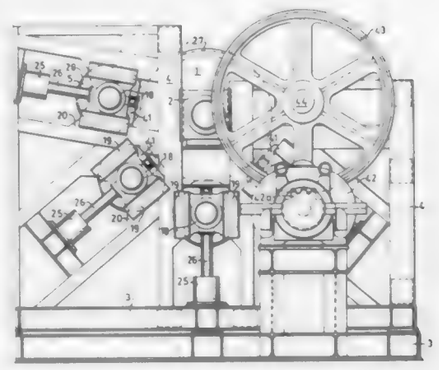
1. In a bale length control device for use on a hay baler of the type having bale tying means, the improvement comprising a movable trip arm for controlling said tying means, a stop having an abutment surface disposed transverse to and in the path of movement of said trip arm, a pivot mounting for said stop, combined pivotal limiting and securing means connected to said stop for holding the latter in selected pivotal positions, said abutment surface being sufficiently extended and the pivot axis of said stop being located with respect to the path of movement of said trip arm to have said abutment surface abut said trip arm in all pivotal positions of adjustment of said stop.

3,371,597
PROCESS AND DEVICE FOR LAYING DOWN CONTINUOUS SPINNING CABLES
Artur Buchalla, Bobingen, near Augsburg, and Martin Uschkoreit, Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
Filed Feb. 17, 1965, Ser. No. 433,316
Claims priority, application Germany, Feb. 20, 1964, F 42,060
3 Claims. (Cl. 100—80)



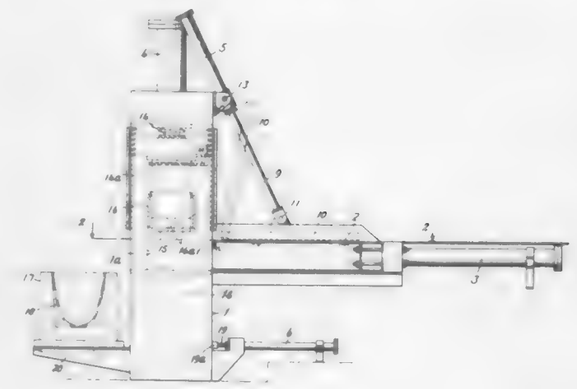
Laying down continuous spinning cable material in a container by means of a mechanism performing traverse motions and compressing the material in one-half of the movable container each time after a double layer of the spinning cable material is laid down.

3,371,598
BARK PRESS
Thure Waplan, Saltsjo-Duvnas, Sweden, assignor to Waplans Mekaniska Verkstads a.-b., Vaplan, Sweden, a corporation of Sweden
Filed Sept. 21, 1965, Ser. No. 488,967
Claims priority, application Sweden, Sept. 24, 1964, 11,613/64
6 Claims. (Cl. 100—166)



A bark press comprising a central roller, at least four squeeze rollers mounted in movable bearings and elastically pressed toward the central roller, and scrape and guide members intermedate the squeeze rollers for removing bark from one squeeze roller and guiding the bark to the gap between the following squeeze roller and the central roller. The central roller and squeeze rollers have longitudinal indentations for breaking up and advancing the bark and complementary peripheral ridges which facilitate the squeezing of liquid from the bark.

3,371,599
SCRAP COMPRESSING APPARATUS FOR ELECTRIC FURNACES
Kunitoshi Tezuka, 34 7 Minami Sunamachi, Koto-ku, Tokyo-to, Japan
Filed Oct. 22, 1965, Ser. No. 500,819
Claims priority, application Japan, Sept. 28, 1965, 40/58,933
1 Claim. (Cl. 100—215)



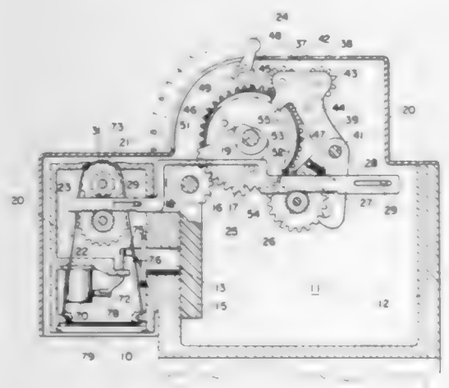
A horizontal pressing cylinder with a semi-circular portion first compresses scrap material against a correspond-

ing portion. A vertical compressing cylinder then compresses the scrap into a cylindrical and somewhat concave casing. The vertical compressing cylinder is equipped with a plunger having cross plates at the undersurface thereof and a pressing plate mounted towards the bottom thereof. The cross plates can pass through channels in the pressing plate. Rotation of the vertical compressing cylinder further compresses the scrap into the casing.

3,371,600
POSTAGE METER AND STAMPING MACHINE COMBINATION

Teresa L. Hill, 3225 Berkley Road 16506, and Charles L. Lovercheck, 632 W. 7th St. 16502, both of Erie, Pa.

Filed Mar. 21, 1966, Ser. No. 535,890
2 Claims. (Cl. 101—45)



The postage meter and stamping machine disclosed herein is provided with a printing mechanism incorporating printing indicia made of ink impregnated rubber. This eliminates the necessity of having an inking mechanism to apply ink to the indicia after each stamp has been printed. Therefore, the inking mechanism is eliminated, yet the function of the inking mechanism is retained by providing the ink impregnated rubber.

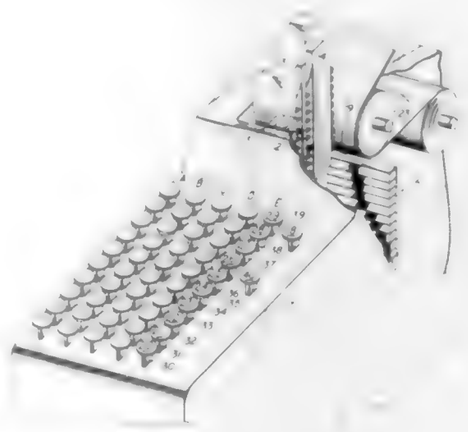
3,371,601
SELECTIVE TYPE BAR AND INK PAD ARRANGEMENT

Leslie C. Lane, Jr., Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Feb. 9, 1966, Ser. No. 526,194
5 Claims. (Cl. 101—93)

Type bars each having all the symbols of a coded system, the type bars being movable to bring a particular symbol into alignment with a printing surface such as paper on a platen, preferably the bars being raisable as in an old fashioned hand operated printing adding machine. In the rest position, the bars are all aligned the same way and are in contact with a zoned inking pad, each symbol on each bar being in contact with the only one zone on the pad which is inked with a coding ink having present one or more coding components which photoluminesce under ultraviolet light in different colors, the particular coding component or combination of coding components constituting the code for the particular symbol. The inks may contain only the photoluminescent coding components which are ordinarily uncolored and so permit a code which is secret and which does not require that the symbols be shaped. Preferably the symbols are shaped and if desired pigment may be present in each zone of the inking pad so that symbols may be recognized visually as well as by examination under ultraviolet light.

The symbols are selected by keys, which in the preferred case raise each bar to the height corresponding to the particular symbol. Moving the bar up first moves it out of contact with the inking pad and then raises it. When all of the bars have been raised to their particular

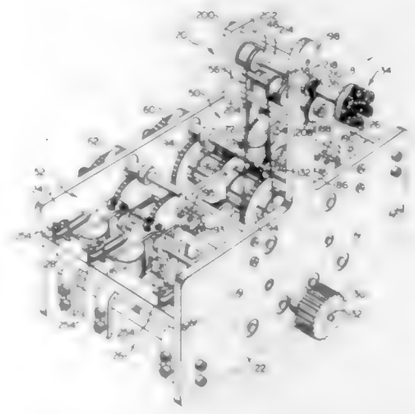


selected heights, printing is effected by bringing in contact the aligned symbols, either by moving the bar as a whole or preferably with bars having each symbol on an individual hammer, by moving the hammer only. The keyboard is then cleared for another series of symbols.

3,371,602
SERIAL TYPE PRINTER WITH DISC-TYPE CARRIER

Joseph F. Cattorini, Xenia, Donald E. Landis, Bellbrook, and Larry L. Leiter, Centerville, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Apr. 18, 1966, Ser. No. 543,429
7 Claims. (Cl. 101—93)

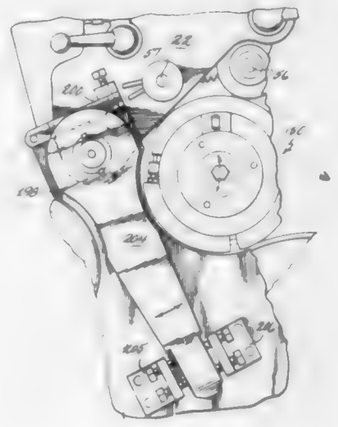


A printing apparatus which utilizes a disc-type carrier having a plurality of type wheels rotatably mounted thereon and operatively connected to a sun gear which can simultaneously rotate all the type wheels. On-off spring-type clutch members are used to actuate cam members which cooperate with constant length belts to rotate the carrier and the sun gear so as to position a preselected type wheel and printing character thereon in printing relation with a platen in the apparatus. The clutch members are actuated in response to the Hollerith code.

3,371,603
INTERCHANGEABLE INKING UNIT FOR MULTI-COLOR PRESSES

Ward E. Brigham, Rutherford, N.J., assignor to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware

Original application June 3, 1963, Ser. No. 284,868, now Patent No. 3,223,028, dated Dec. 14, 1965. Divided and this application Aug. 19, 1965, Ser. No. 479,456
5 Claims. (Cl. 101—175)

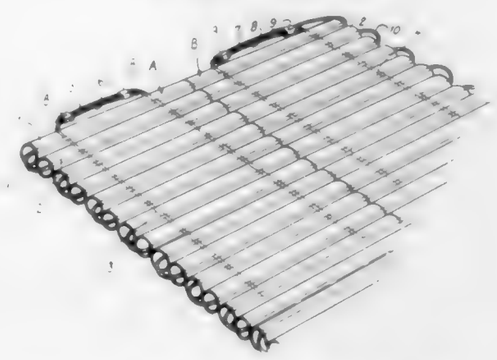


A printing press is provided with adjustable supports for removably mounting interchangeable complete inker units thereon.

3,371,604
BLASTING MAT

Per Folke Wikner and Knut Lundgren, Lidingo, Sweden, assignors to Curt Fredrik Lundin and Johannes Hans-Udo Elbert Speer, Stockholm, Sweden

Filed May 26, 1966, Ser. No. 553,213
Claims priority, application Sweden, May 31, 1965, 7,059/65
6 Claims. (Cl. 102—22)



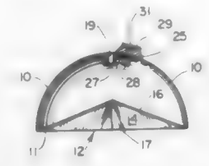
A blasting mat having at least one row of connected adjacent tubes disposed parallel to one another and so arranged that at least at the instance of detonation a longitudinal vent is defined by the curved surfaces of adjacent tubes. At least one rope is provided which passes longitudinally through the tubes in a tortuous path and transversely through the walls of the tubes to form a reinforcing and binding rope network lock. The ends of the ropes are joined together by means of a clamp, or the like.

3,371,605
SHAPED EXPLOSIVE CHARGE

Robert E. Eckels, 2101 Youngfield, Golden, Colo. 80401

Filed July 5, 1966, Ser. No. 562,543
7 Claims. (Cl. 102—24)

A shaped explosive charge having a cup-shaped body is provided with a shaped recess therein produced by four intersecting V-shaped depressions, each such depression being formed of two intersecting planar surfaces, and the recess extending over about two-thirds of the diameter

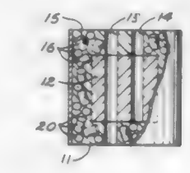


of the charge. The resultant jet pattern from detonation is a central maximum jet with four radially extending linear jets.

3,371,606
EXPLOSIVE BOOSTER FOR RELATIVELY INSENSITIVE EXPLOSIVES

Melvin A. Cook, 631 16th Ave., Salt Lake, Utah 84103, and Robert H. Clay, 728 West 3800 South, Bountiful, Utah 84010

Filed July 18, 1966, Ser. No. 565,774
9 Claims. (Cl. 102—24)



A powerful booster for use with highly insensitive explosives is made up by placing a small, consistently cap-sensitive core of pentolite, pentaerythritol tetranitrate or equivalent, in the center of a suitable mold, packing grains of smokeless powder around the core, and pouring molten TNT or equivalent to cover the grains and thus to form a powerful cast composite sheath of cap-insensitive explosive having high brisance around the core. The grains expedite cooling and make a denser, cavity-free product. The sheath and core are provided with one or two openings so that a cap or detonating fuse may be inserted into the core. The mold may be cylindrical, frusto-conical, etc., for convenient production.

3,371,607
ARRANGEMENT FOR INCREASING THE SAFETY AGAINST UNINTENTIONAL INITIATION OF SO-CALLED LOW ENERGY DETONATING CORD ASSEMBLIES

Per O. I. Olsson, Gyttorp, Sweden, assignor to Nitro Nobel AB, Gyttorp, Sweden, a company of Sweden

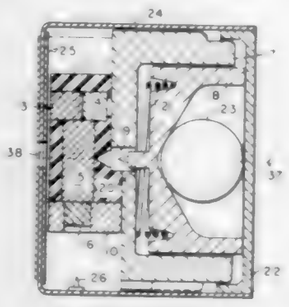
Continuation-in-part of application Ser. No. 428,660, Jan. 28, 1965. This application Aug. 16, 1966, Ser. No. 580,844
3 Claims. (Cl. 102—27)

1. A low energy detonating cord assembly comprising a detonating cord, including, a central, elongated core of high velocity, detonating explosive, a metallic annular tube immediately surrounding said core, at least one annular layer of insulating material immediately surrounding said metallic tube; a booster cap, including, a cap-type, metal exterior shell having one end closed and its opposite end at least partially surrounding and in contact with said insulating layer at one end of said detonating cord; a blasting cap, including, a cap-type metal exterior shell having one end closed and its opposite end at least partially surrounding and in contact with said insulating layer at the other end of said detonating cord; a wire-like electrical conducting means, electrically connecting the outer lateral wall of said anular tube to the inner lateral wall of at least one of said blasting cap shell and

said booster cap shell and passing through a substantial portion of said insulation, whereby detonation of said

assemble by stray electrical current is substantially reduced.

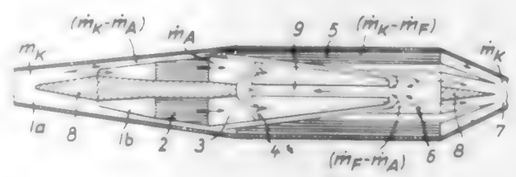
3,371,608
FUZE WITH DELAY FIRING AND IMPACT FIRING FEATURES
George Webb, Richmond, Ind., assignor to Avco Corporation, Richmond, Ind., a corporation of Delaware
Filed June 1, 1967, Ser. No. 642,931
5 Claims. (Cl. 102—72)



This fuze is adapted to be installed in a spinning missile or bomblet. It provides for either delayed firing or impact firing. A weighted slider carries a first ignition train for delayed firing and a second ignition train for impact firing. In response to spin, the slider moves the first ignition train into contact with a first firing pin and sets up conditions for delayed firing. Additionally, it aligns the second ignition train with a second firing pin so that impact firing occurs in response to displacement of or relative to the second firing pin. Adjacent the second firing pin is a ball bearing. Transverse impact forces cause firing by moving the ball against the second firing pin. A spring is interposed between the second firing pin and the housing frame which secures the slider so that the second firing pin and ball move to cause firing on impact with the slider end of the fuze. The housing frame moves to cause firing in the event of axial impaut forces with the ball end of the fuze.

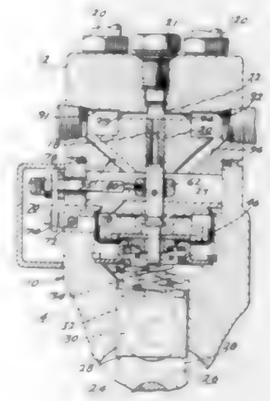
3,371,609
CONVERTER APPARATUS
Reinhart Radebold and Hermann Lang, Grosswelzheim, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Theodor-Stern-Kai, Frankfurt am Main, Germany
Filed Apr. 26, 1965, Ser. No. 450,750
Claims priority, application Germany, Apr. 25, 1964, L 47,744
4 Claims. (Cl. 103—1)

A magneto-hydrodynamic energy converter operating on the ram jet tube principle in which the working medium is a liquid and the stream of the working liquid before it enters into the heat source is separated into two stream components of which the first is cooled and the second is regeneratively heated. After this they are at different places injected into the stream component which



has passed through the heat source and has had its pressure reduced in a plurality of steps between which liquid working medium is admixed with the partly pressure-relieved vapor.

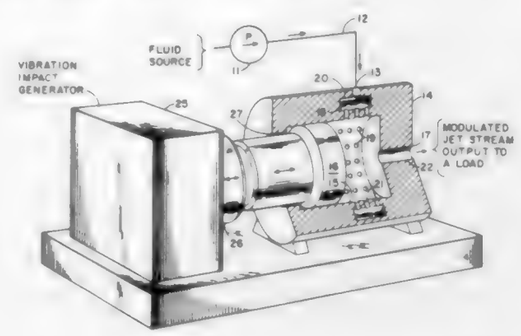
3,371,610
AUXILIARY FILLING MEANS FOR FUEL INJECTION PUMPS
Frank De Luca, Thompsonville, Conn., and Theodore S. Chmura, Chicopee, Mass., assignors to American Bosch Arma Corporation, Springfield, Mass., a corporation of New York
Filed Feb. 16, 1966, Ser. No. 527,885
11 Claims. (Cl. 103—2)



Auxiliary filling means for single plunger distributor type fuel injection pumps comprising in a preferred form one or more axial grooves in the bore of the control sleeve adapted to provide communication between the sump and a spill port of the plunger and hence the fuel distribution chamber during the suction stroke of the plunger. In another form, the auxiliary filling means comprises at least one fill port in the plunger connected with the plunger bore and axially spaced above the spill ports, the fill port being adapted to communicate with the sump during a portion of the plunger suction stroke.

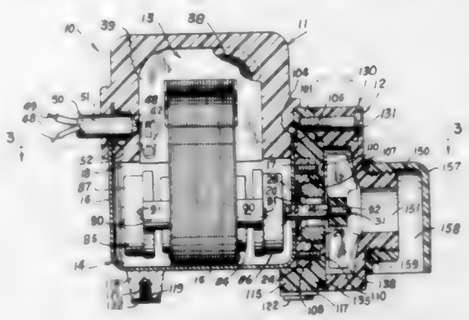
3,371,611
HYDRAULIC APPARATUS
Larry M. Ogden and Boyd A. Wise, Penfield, N.Y., assignors to General Dynamics Corporation, a corporation of Delaware
Filed Aug. 31, 1965, Ser. No. 483,942
3 Claims. (Cl. 103—53)

An apparatus for developing a modulated jet stream output which comprises a chamber which is filled by a fluid source, inlet means disposed between the fluid source and the chamber which have a high impedance to modulated fluid flow, but a low impedance to steady state flow, so that when a piston in the chamber operates to develop



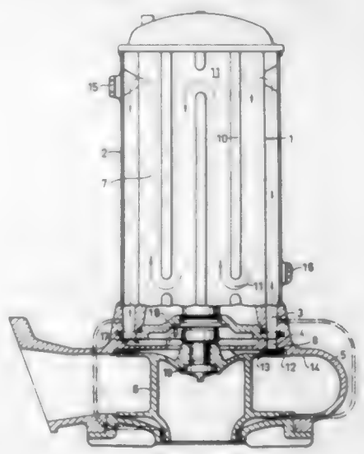
a modulated jet stream, the fluid source is effectively decoupled from the chamber.

3,371,612
DRIVER UNIT
T. Dwight Aller, 4201 Stanford, Dallas, Tex. 75225
Filed Dec. 28, 1965, Ser. No. 517,008
7 Claims. (Cl. 103—87)



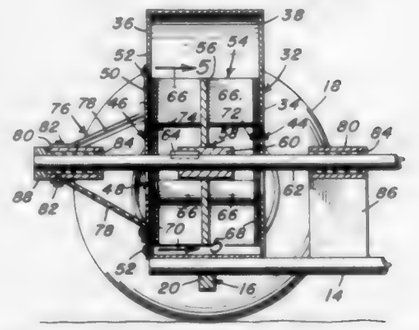
An immersible pump whose driver means is sealed in a housing.

3,371,613
SEWAGE PUMP OR THE LIKE
Jens Karl Adolf Dahlgren, Stockholm, and Carl Evert Sjöstrand, Solna, Sweden, assignors to Stenberg-Flygt AB, Solna, Sweden, a corporation of Sweden
Filed Apr. 21, 1966, Ser. No. 544,160
Claims priority, application Sweden, Apr. 30, 1965, 5,741/65
5 Claims. (Cl. 103—87)



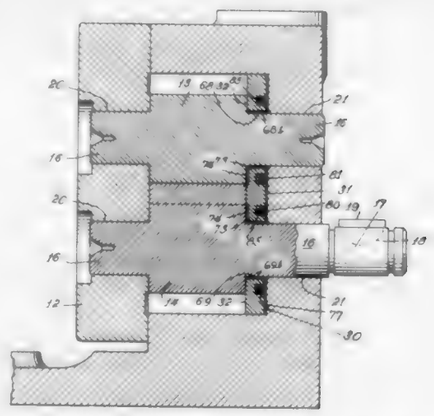
A water cooled sewage pump having a cooling chamber surrounding the pump motor which receives cooling water by forced circulation from the pumped sewage. The pump impeller is provided with vanes which draw water from the pumped sewage while separating the sludge therefrom and causes it to circulate through the cooling chamber.

3,371,614
CENTRIFUGAL PUMP
Angelo J. Crisafulli, P.O. Box 1051, Glendive, Mont. 59330
Filed Apr. 18, 1966, Ser. No. 543,146
12 Claims. (Cl. 103—104)



A wheeled carrier mounted centrifugal pump to be wheeled into a body of water to effect the pumping of water therefrom without requiring the setting up of an intake conduit for the pump. The pump includes a volute housing having axially opposed intake ports, an impeller means within the volute housing carried by a through shaft extending externally of the intake ports and supported by shaft bearing means disposed outwardly of the intake ports. The centrifugal pump is provided with a drive shaft means, comprising an extension of the impeller support shaft, which is adapted to be power driven from the power take-off of an operatively associated device such as a tractor, for example. The impeller shaft bearing support means also provide a vortex reducing or eliminating means should the intake ports of the pump not be completely submerged. The pump impeller preferably includes dual suction impeller means carried on opposed sides of a generally imperforate central disk.

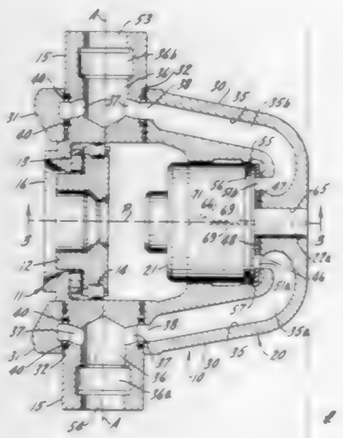
3,371,615
PRESSURE LOADED PUMP
Austin E. Pettyjohn, Auburn, Ind., Ralph J. Riblett, Wooster, and Robert R. Davidson, Elyria, Ohio, and James R. Cox, Fort Wayne, Ind., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 572,494, Aug. 15, 1966. This application Jan. 16, 1967, Ser. No. 609,686
12 Claims. (Cl. 103—126)



An improved pressure loaded pump having a one-piece wear plate mounted between the pump gears and the housing. The wear plate has a groove on the face ad-

jacent the pump end wall which is of a "spectacle" shape and in which is assembled a sealing member and a resilient member. Fluid pressure in the groove urges the sealing member into contact with the end wall to define pressure loading zones on the wear plate.

3,371,616
FLUID DEVICE
Gunnar A. Wahlmark, 211 S. Rockford Ave., Rockford, Ill. 61108
Filed June 18, 1965, Ser. No. 465,120
7 Claims. (Cl. 103—162)



A swash plate type fluid device in which the cylinder barrel rotates in bearing relationship against a bearing surface on a port plate. The bearing surface includes two 180 degree sections disposed at a slight angle to each other, and a barrel rotates in parallel, bearing relationship against only one of these sections on its pressure side to assure a uniform bearing relationship. The angularly related surface sections are achieved by splitting the trunnion-cylinder head of the device on the axis of rotation of the barrel and reassembling the two split sections about three positioning pins, one of which permits the head segments to incline slightly toward each other, causing the plate support surface to comprise two 180 degree canted sections and the tightly fastened plate to bend and acquire the same angular configuration.

3,371,617
PUMP HAVING COMBINATION CHECK VALVE AND SHUTOFF VALVE
Norman W. Klootwyk, Marshall, Mich., assignor to S. H. Leggitt Company, Marshall, Mich., a corporation of Michigan
Filed Aug. 9, 1965, Ser. No. 478,374
7 Claims. (Cl. 103—178)

1. In a combined pump and flow control valve construction, the combination comprising:

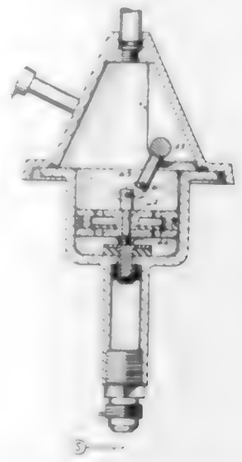
a cylinder having inlet and outlet openings and a wall reciprocable within said cylinder for pumping liquid in a direction from said inlet to said outlet;

actuating means for reciprocating said wall, said actuating means including an arm pivotably mounted relative to said cylinder for angular oscillation relative thereto;

a valve seat associated with said cylinder;

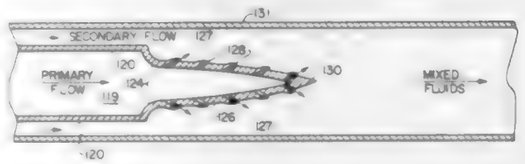
a movable flow control valve member engageable with said seat, said wall being actuatable to a terminal position to engage and urge said movable valve member against said seat so that flow through the pump is prevented when the wall is in said terminal position; and

nonresilient lock means engageable with said arm for positively mechanically locking said wall in said terminal position in which it bears firmly against said



movable valve member positively to maintain said valve closed despite relative high fluid pressure in said inlet.

3,371,618
PUMP
John Chambers, Rte. 1, Box M41, Del Mar, Calif. 92014
Filed Feb. 18, 1966, Ser. No. 528,464
11 Claims. (Cl. 103—258)

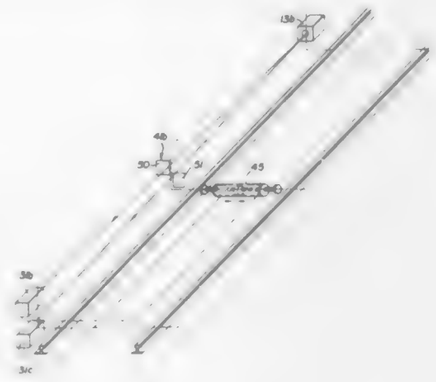


Jet pumps including a mixing chamber throughout the length of which a substantially constant static pressure is maintained, an arrangement for accelerating a primary fluid and introducing it into the upstream end of the mixing chamber to induce a flow of secondary fluid into the chamber in a direction generally parallel to that of the primary fluid, and an arrangement for taking off the primary and secondary fluids at the downstream end of the mixing chamber.

3,371,619
MEANS FOR DETERMINING TRACK ALIGNMENT
John Kenneth Stewart, Dorval, Quebec, Canada, assignor, by mesne assignments, to Tamper Inc., Columbia, S.C.
Continuation of application Ser. No. 526,946, Jan. 20, 1966, which is a continuation of application Ser. No. 315,239, Oct. 10, 1963. This application Jan. 24, 1967, Ser. No. 611,470
Claims priority, application Canada, Oct. 15, 1962, 860,141
21 Claims. (Cl. 104—8)

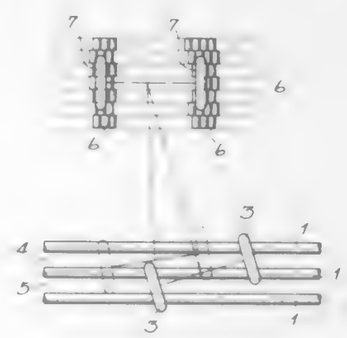
1. Apparatus for determining the horizontal misalignment of a railway track comprising a system adapted to run on the track; means for biasing the system against a reference rail; high frequency beam transmitter means mounted on the system to transmit longitudinally of the track; a pair of beam receivers on the system spaced from the transmitter and aligned to receive the transmission

from said transmitter means; and beam interference means on the system and associated with each of said beam receivers and adapted to be responsive to discrepancies in horizontal track alignment; said beam interference means being located between said transmitter means and said



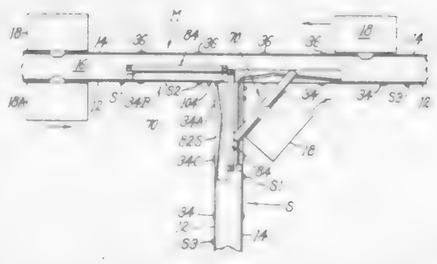
receivers; one of said receivers being operative to produce a signal when the track is out of horizontal alignment in one direction and the other of said receivers being operable to produce a signal when the track is out of horizontal alignment in the opposite direction.

3,371,620
APPARATUS FOR DISPLACING A CAR
Eiji Furukawa, Chiba-shi, Japan, assignor to Daido Yusoki Kabushiki Kaisha, Tokyo, Japan, and Hitachi Zosen Kabushiki Kaisha, Osaka, Japan, both corporations of Japan
Filed Dec. 13, 1965, Ser. No. 513,294
Claims priority, application Japan, Dec. 17, 1964, 39/71,522
2 Claims. (Cl. 104—35)



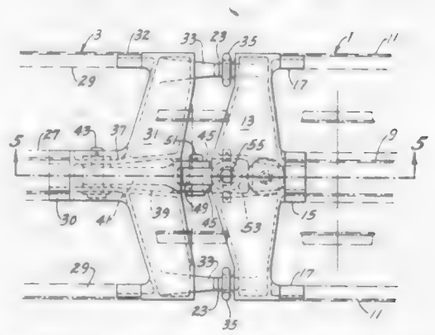
1. Means for the lateral displacement of a car having a pair of driving wheels at one end and at least one additional wheel at the opposite end of said car comprising three parallel rotatably mounted rollers secured to a horizontal supporting surface and spaced apart a fixed distance and including two outer rollers and an intermediate roller, the spacing of each said outer roller from said intermediate roller being less than the diameter of said driving wheels and sufficiently close together to maintain the lowermost portion of each driving wheel, when disposed on a corresponding pair of rollers, spaced from said supporting surface, one of said outer and intermediate rollers supporting one of said car driving wheels and the other of said outer and said intermediate rollers supporting the other of said car driving wheels, said car driving wheels, when driven, rotate said three rollers, and a plurality of relatively small rotatably mounted rollers in said supporting surface positioned for supporting said additional wheel with the axis of said small rollers extending laterally of the axis of said additional wheel, and to the axes of said three parallel rollers, the spacing between adjacent ones of said small rollers, in a direction normal to the axes of said last mentioned rollers, being less than the width of the said additional wheel, and the length of the supporting surface in which said small rollers are mounted being substantially coextensive with the length of the supporting surface in which said first named rollers are mounted when measured in the direction of the axes of said first mentioned rollers.

3,371,621
RACK TRANSFER DEVICES
Edward S. Babson, Ipswich, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed June 8, 1966, Ser. No. 556,125
6 Claims. (Cl. 104—172)



1. In a system for conveying article carrying units, at least two stationary track portions arranged in a configuration including an inside corner, driving wheels along each stationary track portion for propelling the units, an elongated stationary shoulder on each of said track portions for maintaining the units in engagement with the driving wheels, a transfer mechanism for moving the units past the inside corner from one stationary track portion to the other comprising a movable shoulder, and means first to locate said movable shoulder in a position in alignment with one of said stationary shoulders to receive an article carrying unit and then while the unit is in engagement with the transfer mechanism to locate the movable shoulder in a delivery position in alignment with the second stationary shoulder.

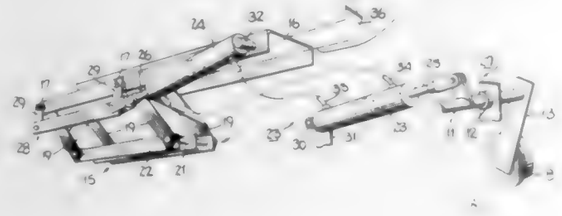
3,371,622
ARTICULATED CAR
Richard L. Lich, St. Louis, Mo., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 497,157
3 Claims. (Cl. 105—4)



An articulated railway car in which one underframe is supported near one of its ends on a truck and has transversely spaced upwardly facing hooks on that end, ver-

tical links suspended from said hooks, and a second underframe having downwardly facing hooks on its end adjacent the first underframe, the downwardly facing hooks being supported from said links and forming therewith the sole support of the adjacent end of the second underframe, and draft means comprising a drawbar pivoted to the second underframe on a horizontal axis and universally pivoted to the first underframe.

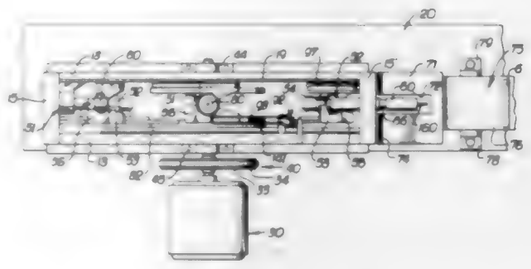
3,371,623
CONVERTIBLE RAIL-HIGHWAY VEHICLE WITH RETRACTABLE STEP
Francis W. Therrien, Whitehall, N.Y., assignor of forty-five percent to Raymond L. Therrien, Whitehall, and Carl A. Covell, Glens Falls, N.Y., in equal shares
Filed Oct. 21, 1965, Ser. No. 499,842
3 Claims. (Cl. 105—215)



Retractable step for a convertible rail and highway vehicle having means for riding on paved roadways and retractable means for riding on railway tracks, the latter including an arm on a rotatable shaft with a flanged guide wheel mounted thereon and movable between rail engagement and disengagement positions, the retractable step comprising a channel-shaped base secured to the underside of the vehicle and foldable within itself in the longitudinal direction of the vehicle, struts rotatably mounted on the channel-shaped base and linkage means interconnecting the retractable step and said arm including a pair of hydraulic cylinders each having a piston reciprocally movable therein, pivot means operatively connecting the piston of a first of said cylinders to the rotatable shaft for effecting reciprocal movement of said piston in said first of said cylinders, the piston of said second of said cylinders being connected by a pivot linkage to the struts for rotating the latter on said base, and a pair of flexible tubes interconnecting respective opposite ends of the hydraulic cylinders for transmitting hydraulic fluid therethrough from one cylinder to the other whereby movement of said first piston relative to said first cylinder causes an opposite movement of the other piston relative to the second hydraulic cylinder and causes positive retraction or extension of said step in consonance with movement of said flanged guide wheel.

3,371,624
APPARATUS FOR MAKING A TOROID
Daniel T. Thompson, 10584 Bradbury Road, Los Angeles, Calif. 90064
Filed Feb. 10, 1966, Ser. No. 526,474
15 Claims. (Cl. 107—8)

An apparatus for converting strips of pliant material, such as dough, into toroids by forming the strips between axially movable sleeve and mandrel assemblies mounted for concurrent rotation about a common axis wherein means are provided for feeding and positioning stationary strips of pliant material perpendicularly to and transversely across the path of travel of the rotating mandrels to cause successive strips to be picked up and carried along on successive mandrels, each strip picked up and carried by a mandrel being preformed into a generally U-shape about its associated mandrel due to the relative movement between the rotating mandrel and the positioned strip. Curling means are provided for curling the free ends of each preformed generally U-shaped strip of pliant material about the associated mandrel into overlapping curled contact, the strip ends overlapping rather than abutting, with each other prior to the strip being formed into a homogeneous toroid between the relatively movable associated mandrel and sleeve portions of the assemblies. The sleeve and mandrel assemblies are mounted for concurrent rotation about a generally horizontal axis in a generally vertical plane with a feeding station located adjacent one edge of the plane defined by the extremeties of the assemblies and at approximately the level of the axis of rotation thereof. A strip of material picked up at the feeding station in the zone generally level with the axis of rotation of the sleeve and mandrel assemblies is then carried by the mandrel successively into a curling zone, a forming zone and a discharge zone.

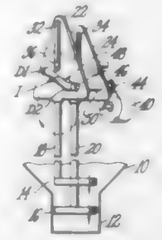


In the forming of the pliant strip of material into a toroid, means are provided for partially retracting each mandrel relative to its associated sleeve on picking up of a strip of material to pinch the bight portion of the preformed generally U-shaped strip between the mandrel and sleeve while the strip free ends are curled about the mandrel in overlapping relation in the curling zone. The curling assemblies may be mounted on each of the rotating sleeve or mandrel assemblies or may be mounted to the apparatus frame for operating upon mandrel assemblies as they pass thereby. In curling the ends of the pliant material into overlapping relation about the mandrel prior to its being formed into a toroid, a first withdrawal of the mandrel into the sleeve pinches the bight portion of the strip between the mandrel and sleeve to hold it in fixed position on the mandrel; after a first end is curled about the mandrel, a further withdrawal of the mandrel into the sleeve lowers the first curled end and allows curling of the second free end into an overlapping relation to allow forming of the thus overlapped free strip ends into a toroid configuration.

3,371,625
DOUGHNUT DROPPER WITH ADJUSTABLE SIZING MEANS
Stanley B. Jones, Torrance, Calif., assignor to Hol 'N One Donut & Supply Co., Los Angeles, Calif., a corporation of California
Filed July 15, 1966, Ser. No. 565,554
4 Claims. (Cl. 107—14)

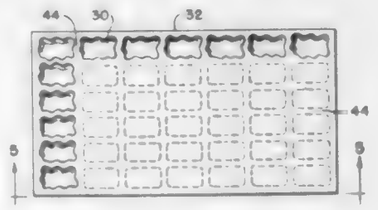
The invention provides a dough ring former (e.g. "doughnut dropper") having respective dough-ejector and dough ring-cutoff pistons and having dual piston-actuator cams driven by a rotating crank having a single eccentric pin extending through slots in the respective cams, the slots being of such relative configurations as to transmit a relatively short stroke to the ejector piston and a relatively long stroke to the cutoff piston so as to provide opening and closing relative movements between the pistons for drawing dough between them and for extruding such dough into a ring respectively. The configurations

of the cam slots are a straight transverse slot for the ejector piston actuator cam and a Z-shape slot for the cutoff piston actuator cam, such Z-slot having an intermediate incline which speeds up the movement of the cutoff piston ahead of that of the ejector piston during second and fourth quarters of the operational cycle, thus attaining the closing and opening relative movements of the pistons through the driving action of a single eccentric pin.



The invention further provides for stroke adjustment of the ejector piston actuator cam so as to vary the stroke of the ejector piston, thus to vary the size of the dough ring that is formed. This is accomplished by modifying the Z-shape of the slot in the ejector piston actuator cam.

3,371,626
CONFECTION MANUFACTURE
Samuel J. Hachtman, River Forest, Ill., assignor to Sugarless Candy Corporation of America, Chicago, Ill., a corporation of Illinois
Filed Sept. 14, 1965, Ser. No. 487,232
12 Claims. (Cl. 107—19)



Method of making sugarless candy from an aqueous solution of sorbitol by first heating to evaporate the water therefrom and after the water content has been reduced, allowing the waterfree candy mixture to cool at a temperature which is below its melting point but above the temperature at which it starts to set. The process is then continued by depositing measured quantities of the heated sorbitol into thin-wall cavities of a plastic mold, the housing and nozzles of the depositor having thermostatically controlled heating elements which maintain the temperature of the sorbitol above the temperature at which it sets but below a temperature at which the plastic mold cavities would heat-deform. The thin walls of the cavities in the plastic mold are of irregular contour and arranged in spaced complementing relation to the walls of adjacent cavities to provide surrounding channels which permit free circulation of air between the cavities and accommodate rapid cooling and setting of the sorbitol candy.

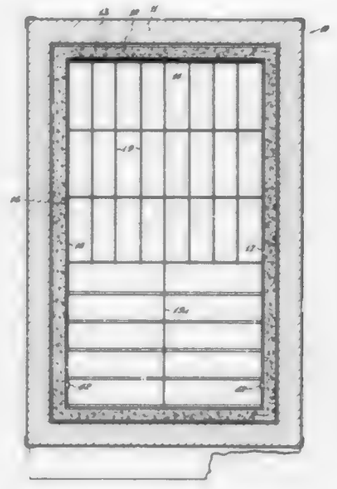
3,371,627
MODULAR INTERIOR STORAGE SAFE
Leland W. Belew, Hamilton, Ohio, assignor to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed Aug. 26, 1966, Ser. No. 575,412
6 Claims. (Cl. 109—53)

1. For use in combination with a record safe of the type having fireproof walls and interior, a modular safe interior assembly adapted to be mounted inside said safe and suspended from adjacent the ceiling thereof, said interior assembly comprising

a pair of vertically extending side panels,

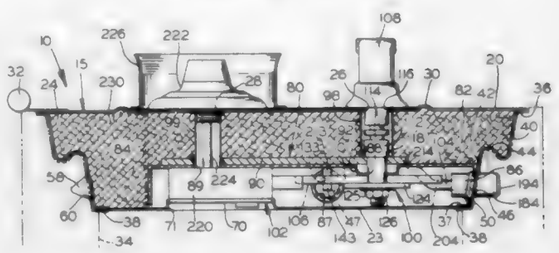
at least one vertical partition panel extending parallel to and between said side panels,

suspension members connected to the top of each of said partition and side panels and adapted to be secured in place adjacent the interior ceiling of said safe such that said side and partition panels hang downwardly from said suspension members, the bottom edges of said side and partition panels being spaced from the interior floor of said safe such that said panels are supported solely by said suspension members, and



transverse support bars extending between and supported solely by said side and partition panels, each support bar being adapted to support objects stored within the interior of said safe.

3,371,628
INSULATED CLOSURE CONSTRUCTIONS AND METHODS OF ASSEMBLY THEREOF
Ralph E. McClellan, Toledo, Ohio, assignor to Meilink Steel Safe Company, Toledo, Ohio, a corporation of Ohio
Filed June 6, 1966, Ser. No. 555,356
11 Claims. (Cl. 109—59)



1. An insulated closure comprising:

(A) an outer plate,

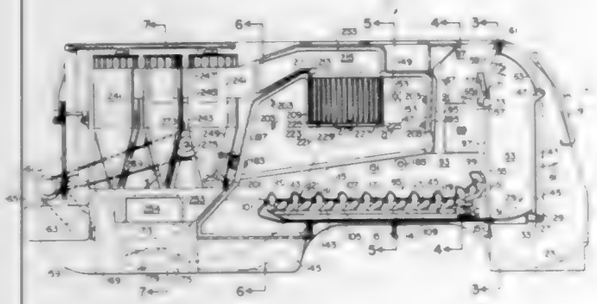
(B) a frame around the edge of said plate giving thickness to said closure having a first hole therein,

(C) a bolt work box having an open side flush with the inner edge of said frame, said box being spaced from said outer plate within the thickness of said closure and having a second hole therein aligned with said first hole,

(D) a tube extending between the peripheral edges of said first and second holes, and

(E) insulation means filling the space between said plate and said edge of said frame throughout the thickness of said closure including surrounding said tube and filling the space between said plate and said box.

3,371,629
MOBILE INCINERATOR
Richard B. Engdahl, Herbert R. Hazard, and Glen M. Hein, Columbus, Ohio, assignors to Battelle Memorial Institute, Columbus, Ohio, a corporation of Ohio
Filed Nov. 18, 1964, Ser. No. 412,211
3 Claims. (Cl. 110—8)



3. A mobile apparatus for the collection and incineration of refuse, comprising:

(a) a frame;

(b) a combustion chamber mounted on said frame;

(c) a grate positioned in said combustion chamber said grate being constructed to move refuse through said combustion chamber;

(d) means mounted on said frame for receiving refuse and transferring said refuse onto said grate;

(e) means for supplying sufficient heat to cause combustion of said refuse within said combustion chamber;

(f) a plenum chamber surrounding said combustion chamber;

(g) a plurality of louvers in the walls of said combustion chamber, said louvers providing communication from said plenum chamber to said combustion chamber;

(h) means for supplying air at superatmospheric pressure to said plenum chamber through said louvers and directionally along the inner surface of said combustion chamber whereby said air cools the combustion chamber wall and subsequently provides oxygen to burn the refuse;

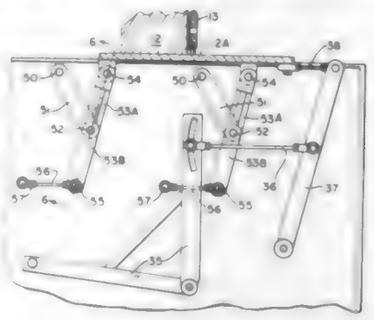
(i) a flue passage communicating with said combustion chamber;

(j) means including heat exchanger means for preventing unburned refuse from escaping into said flue; and

(k) separating means positioned in said flue passage for separating entrained ash particles from the flue gases.

3,371,630
BORDER PANEL MANUFACTURING MACHINE
James A. Cash, Jr., Louisville, Ky., assignor to DRC Corporation, Louisville, Ky., a corporation of Kentucky
Filed Feb. 25, 1966, Ser. No. 530,076
6 Claims. (Cl. 112—2)

An improved means for supporting a sewing machine head on an apparatus for manufacturing mattress border panels wherein a border panel fabric assembly is moved longitudinally through the manufacturing apparatus while the sewing machine is moved transversely back and forth over the longitudinal path of the border panel fabric assembly. The sewing machine head frame support comprises a pair of horizontally spaced linkage units coop-



eratively mounting the head frame on the apparatus base frame for back and forth translational movement along a flat substantially planar path.

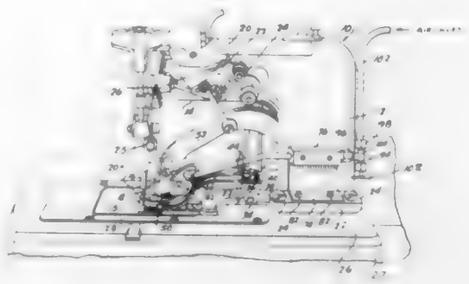
3,371,631
WORK-STACKING MECHANISM
John L. Rockerath, Utica, N.Y., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 28, 1966, Ser. No. 546,026
15 Claims. (Cl. 112—2)

1. Apparatus for stacking relatively flat pieces of flexible material which comprises, means providing a supporting surface along which said pieces may be advanced, said means having an edge toward which said pieces are advanced, means for advancing successive pieces of said material toward said edge and into overhanging relationship to said edge, a stacking bar swingable in an arc below said supporting surface partly in a region beneath the latter and partly outwardly from said edge thereof, said bar being maintained in substantially parallel relation to said edge and carried through the region in which the overhanging portions of successive workpieces are disposed, clamping means at opposite sides of said bar and spring urged toward the latter, means for detaining said clamping means against any substantial movement beyond the path of the overhanging portions of the pieces opposite to the side on which they cooperate with said bar, and means for swinging said bar to engage and pick-up successive pieces of the material.

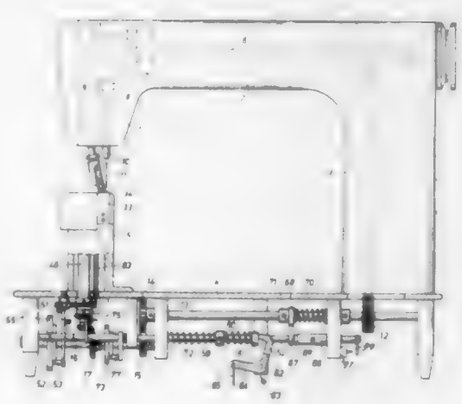
3,371,632
THREAD CONTROL ATTACHMENT FOR SEWING MACHINES
C. James Snyder, Camp Hill, Pa., and Gunther A. Hess, Camp Hill, Pa. (2245 Rudy Road, Harrisburg, Pa. 17104); said Snyder assignor to said Hess
Filed Dec. 17, 1965, Ser. No. 514,726
8 Claims. (Cl. 112—218)

A sewing machine attachment wherein air is employed to keep the starting end of the thread out of the path of

clamping arms or the like. The air is provided by a conduit connected at one end to a source of air under pressure and terminating at the other end in nozzle means positioned adjacent the sewing needle opening to direct air on opposite sides thereof.



3,371,633
THREAD CUTTING DEVICE FOR SEWING MACHINES
Kristen Hedegaard, Gentofte, Denmark, assignor to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany, a corporation of Germany
Filed Apr. 5, 1966, Ser. No. 540,252
Claims priority, application Germany, Apr. 7, 1965, P 36,471
9 Claims. (Cl. 112—252)



1. The combination with a sewing machine including a reciprocatory needle carrying a needle thread passing through an opening of said needle, a looptaker having an operative element carrying a looptaker thread passing through an opening of said element, said element having a predetermined operative position during the operation of said machine in producing a stitch in the work being operated on by cooperation of said needle with said looptaker, of thread-cutting apparatus comprising in combination:

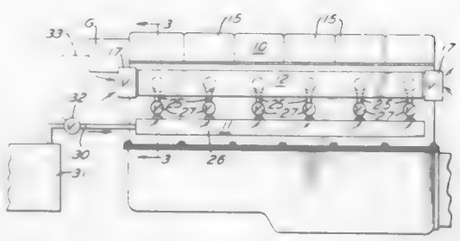
(1) a thread cutter including a pair of cutting elements and positioned normally in an inoperative retracted position,

(2) first operating mechanism to consecutively operate said cutter from said inoperative position to an operative thread-cutting position and to actuate said cutting elements upon arrival in said operative position,

(3) second operating mechanism including control means therefor to operate said looptaker element from said predetermined position to a retracted position, to extract a predetermined length of looptaker thread, and

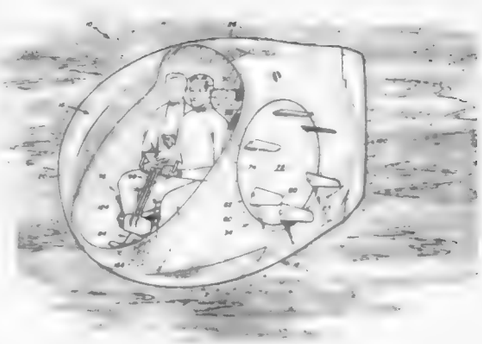
(4) coupling mechanism between said first and said second operating mechanism, to operate said cutter towards the thread being extracted and to seize and cut the extracted thread by said elements of said cutter upon the actuation of said control means.

3,371,634
APPARATUS FOR COMBUSTION CONTROL IN DIESEL ENGINES
John Clark Lalande, 173 W. 8th St., Oswego, N.Y. 13126
Filed Oct. 19, 1966, Ser. No. 587,720
4 Claims. (Cl. 123—198)



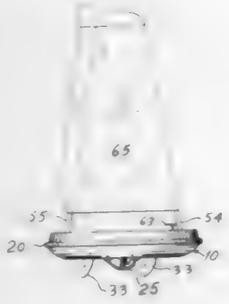
Combustion control apparatus for diesel engines which includes individual shut-off valves in each air intake manifold connection to each cylinder and may include a source of combustion inhibiting fluid connected to each air intake manifold connention and controlled by normally closed shut-off valves.

3,371,635
SUBMERSIBLE VESSEL
Leonard W. Seeley, China Lake, Calif., assignor of fifty percent to Nancy Lee Seeley, China, Lake, Calif.
Filed Sept. 7, 1966, Ser. No. 577,644
16 Claims. (Cl. 114—16)



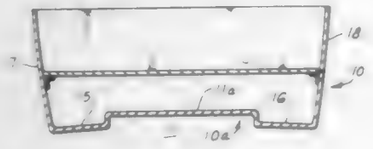
1. A submersible vessel, comprising, hull structure defining an ellipsoidal shape having its major transverse axis arranged vertically, pressure bulkhead means dividing said hull structure into a cockpit area and a flooded area for power, air ballast and environmental systems, a mid-hull twin cycloidal propeller propulsion system mounted on the starboard and port sides of said vessel for propulsion thereof, and means for controlling the operation of said propulsion system so as to control the maneuvering characteristics of said submersible vessel.

3,371,636
WATERBORNE VESSELS
David H. Sharp, 6 Linnet Crescent, Strathmore, Quebec, Canada
Filed July 12, 1965, Ser. No. 471,117
28 Claims. (Cl. 114—39)



A circularly hulled vessel in which triangularly arranged control-board means depend beneath the hull and substantially surround the center of the hull, and in which the control-board means can be simultaneously or independently operated during various conditions, and in which the vessel can be power or sail operated.

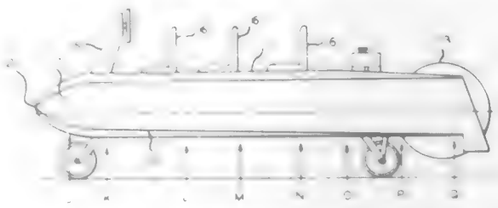
3,371,637
PADDLE WHEEL BOAT
James W. Woodall, Rte. 2, Box 235A–1, Angleton, Tex. 77515
Filed June 6, 1966, Ser. No. 555,416
5 Claims. (Cl. 114—58)



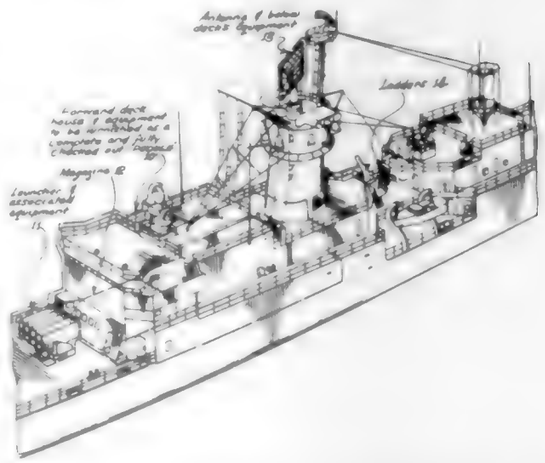
A boat is disclosed that is particularly adapted for use in shallow water. The boat is propelled by a paddle wheel mounted at the back of the boat. The paddles on the paddle wheel do not extend below the bottom of the boat so the depth of water in which the boat can operate is limited only by the amount of water the boat draws. To supply the paddle wheel with sufficient water for it to operate efficiently, a water tunnel extends longitudinally of the bottom of the boat to permit water to flow through the tunnel from the front of the boat to the paddle wheel. To further increase the water flowing through the tunnel to the paddle wheel, the bottom of the boat is inclined upwardly from the outboard edge of the hull to the water tunnel. This causes the water displaced by the hull, as the boat travels through the water, to tend to flow into the water tunnel rather than away from the boat.

3,371,638
HYDROFOILS
Anton A. Beringer, S. 7238 Lochcrest Blvd., Muskego, Wis. 53150
Filed Nov. 7, 1966, Ser. No. 592,377
4 Claims. (Cl. 114—66.5)

1. A hydrofoil for boats and the like including an elongated buoyant body having a tapered nose portion and shaped to provide a lifting action when traversing water, said body having recesses on each side thereof extending from a point near the nose portion of the body to a point at the end of said body, said recesses being inclined to the longitudinal axis of the body and extending in a downward direction from the forward portion of the body to the rearward portion thereof.

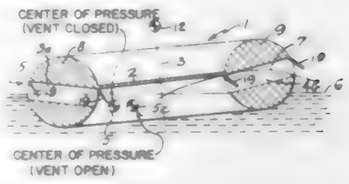


3,371,639
PODULE ASSEMBLY METHOD FOR SHIPS
George H. Schillreff, Glendora, Calif., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Nov. 29, 1966, Ser. No. 604,108
10 Claims. (Cl. 114—77)



A method of construction or modification of a ship wherein preassembled or prefabricated superstructure, such as that containing electronic gear for a missile weapon system, is bodily positioned on the deck. The preassembled superstructure is so constructed that the equipment therein is compatible for ready interconnection with electrical, hydraulic, water and other systems of the ship. The superstructure is then secured to the deck, and the ship is ready for operation.

3,371,640
MEANS AND METHOD OF DAMPING PITCHING AND ROLLING OF FLOATING STRUCTURES UNDER WAVE AND SWELL ACTION
Leo J. Tsokalas, 20 Gardner St., Manchester, Conn. 06040
Filed Oct. 6, 1966, Ser. No. 600,295
13 Claims. (Cl. 114—121)



1. A floating body having volume and weight, displacing water on which it is floating, said body provided with one or more vents each in the form of a straight longitudinal passage open at its opposite ends, both ends of all of said vents being disposed on the external surface

of said body above the normal water level and one of said ends of each vent disposed adjacent said water level when the water is calm, each of said vents located so as to extend longitudinally of the body solely in an outward direction away from its center of gravity and adapted to receive and permit passage of a portion of a wave moving from fore to aft and thus reduce the water displacement and buoyancy of the portion of the body provided with the vent or vents from what they would be with the full volume of the body without the vent or vents.

3,371,641
FOOT OPERABLE STEERING APPARATUS FOR BOATS AND MOTORS

Willis F. Rohman and Edwin R. Fredrick, both of P.O. Box 8192, Dawson Station, Tulsa, Okla. 74151

Continuation-in-part of application Ser. No. 416,276, Dec. 7, 1964. This application May 11, 1966, Ser. No. 549,201
9 Claims. (Cl. 114—153)

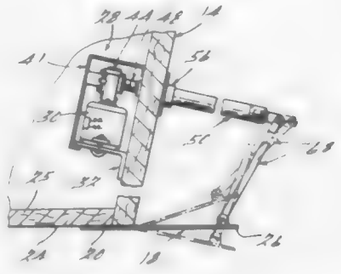
1. A foot operable steering attachment for an outboard motor comprising:
   - a bracket detachably securable to a guiding component of an outboard motor;
   - a normally horizontal extensible arm detachably secured at one end to said bracket;
   - a normally downwardly depending extensible arm pivotally mounted at one end thereof adjacent a second end of said horizontal arm; and
   - a stirrup detachably mounted to the lower end of said downwardly depending arm wherein movement in a horizontal direction of said stirrup imparts arcuate movement to said guiding component.

3,371,642
TRIM CONTROL DEVICE FOR BOATS

William M. Joy, 1615 N. River Road, St. Clair, Mich. 48079

Filed Oct. 15, 1965, Ser. No. 496,553
8 Claims. (Cl. 114—66.5)

1. In an apparatus for stabilizing a boat having a hull which terminates at its stern end in an upwardly extending transom section,
   - a pair of flat rectangular shaped trim tab elements constructed of a relatively flexible material and having a first portion secured to the underside of the hull at the opposite ends of the transom section and a second portion extending rearwardly of the transom section and disposed in substantially coplanar relation with the underside of the hull,
   - a pair of actuating motors mounted on said transom section,
   - a pair of shafts aligned with said trim tab elements and extending through laterally spaced openings in said transom section,
   - drive means connected to said motors and adapted to move said shafts along the longitudinal axes thereof, and

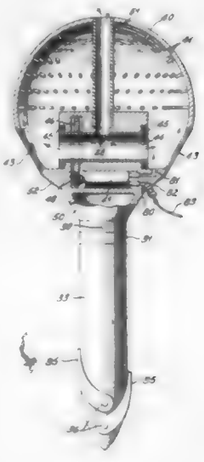


   - a pair of actuating rods pivotably connected at their upper ends to said shafts and at their lower ends to the upper sides of said second portions of said trim tab elements,
   - energization of said motors being adapted to move said shafts longitudinally thereof whereby to vary the inclination of said second portions of said trim tab elements relative to the plane of the underside of the hull.

3,371,643
HYDRAULICALLY ACTUATED DRIVER

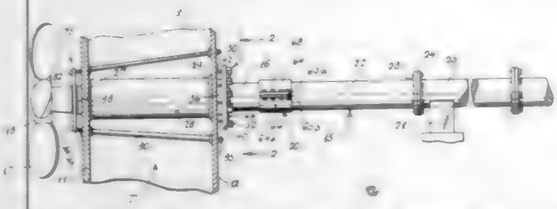
William Howard Dunham, 9911 Parkwood Drive, Bethesda, Md. 20014

Filed Aug. 6, 1962, Ser. No. 215,212
5 Claims. (Cl. 114—206)



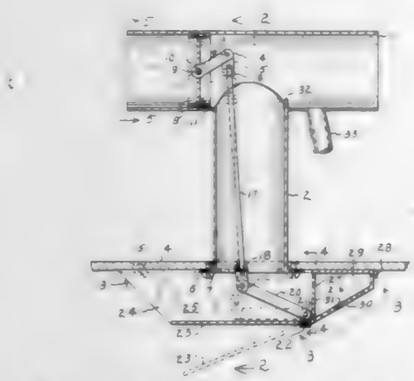
1. A marine anchor embedding apparatus comprising a fluid reservoir, having an inner surface and an outer surface, a plurality of protuberances mounted on said inner surface for creating turbulence in fluid flowing therein, a conduit extending into said reservoir, a rotatably mounted valve positioned in said conduit within said reservoir and intercommunicating said reservoir and said conduit, said valve comprising a hollow cylindrical body for changing the direction of flow of fluid through said conduit through an angle of substantially 90° and the inner surface of said reservoir changing the flow of fluid through substantially another 90°, means adapted to selectively rotate said valve from a position closing said conduit to a position permitting fluid to pass through said conduit, and a device mounted to the lower end of said reservoir.

3,371,644
PROPELLER DRIVE SHAFT AND BEARING ASSEMBLY
Oscar A. Yost, 302 W. 22nd St., New York, N.Y. 10011
Filed Oct. 13, 1966, Ser. No. 586,398
10 Claims. (Cl. 115—.5)



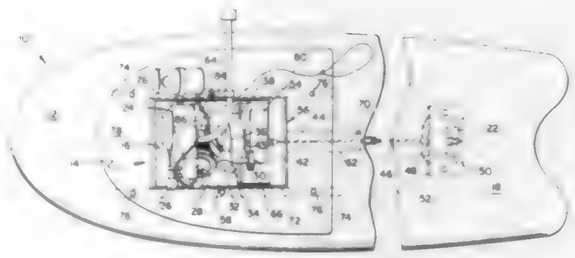
1. A propeller drive assembly for a ship having a hull, a bulkhead spaced from said hull and defining a tank therewith, and a rigid axially horizontal tube extending in a fore and aft direction and secured at opposite ends to said hull and bulkhead with openings in the hull and bulkhead respectively registering with opposite ends of the tube; said assembly comprising a cylindrical drive shaft section rotatably disposed in said tube and extending its rear end through the hull to support a propeller and extending at its forward end through the bulkhead for driving connection to an engine, a plurality of semi-cylindrical bearing plates disposed in said tube between the drive shaft section and said tube, said bearing plates being removable through a forward end of the tube and the opening in the bulkhead, and a gland assembly at the bulkhead adjustably secured thereto for sealing the shaft at said forward end of the tube, said gland assembly comprising a flat ring having circumferentially spaced holes, a plurality of studs mounted in said bulkhead and extending through said holes in the ring, first gear nuts mounted on the studs, and idler gear nuts rotatably supported by the ring and alternating with first named gear nuts, whereby turning any one gear nut rotates all gear nuts for advancing the ring axially to seal the shaft section to the opening in the bulkhead and for retracting the ring to release the sealing of the shaft section to the opening in the bulkhead.

3,371,645
DIRECTIONAL FLOW EXHAUST REGULATOR
Lyle O. Ward, 615 River St., Port Huron, Mich. 48060
Filed May 16, 1966, Ser. No. 550,393
9 Claims. (Cl. 115—.5)



A directional flow exhaust regulator for boats having an internal combustion engine and including a first conduit to exhaust gases into the atmosphere, a second conduit to exhaust gases under water, a valve disposed in said first conduit and having an open position to allow exhaust of gases from said first conduit and a closed position to force gases to exhaust from said second conduit, an actuator movable by water flow to close said valve and movable in the absence of water flow to open said valve, and means interconnecting said valve and said actuator. Said second conduit opens into an exhaust chamber, which has a wall in common with a pressure chamber, said common wall being formed with a small plurality of holes, and the forward wall of said pressure chamber being formed with a larger plurality of holes, so that as the boat moves through water, water is forced into said chamber through the larger plurality of holes at a rate greater than it can escape through the smaller plurality of holes causing a jet-like stream of water to help clear exhaust gases from the exhaust chamber.

3,371,646
POWERED WATERCRAFT
Richard L. Mela, Arlington, Mass., assignor to The Powermite Corporation, Arlington, Mass.
Filed July 27, 1966, Ser. No. 568,307
16 Claims. (Cl. 115—70)



A power unit is attached to a solid foam hull to provide a powered floatboard. The floatboard supports a passenger who controls its speed and direction.

3,371,647
ATHLETIC FIELD MARKER
Irwin B. Shopbell, 5409 Beverly Ave. NE., Canton, Ohio 44714
Filed July 12, 1966, Ser. No. 564,608
3 Claims. (Cl. 116—114)

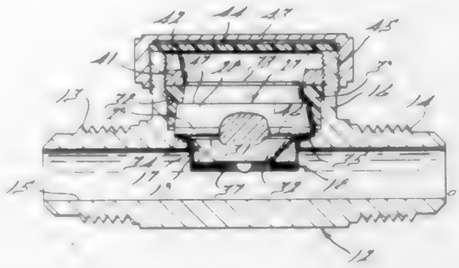
A corner marker for football fields and the like comprising a pliable, flexible post of foam-rubber-like material such as polyethylene foam having an impervious

covering such as vinyl bonded to its outer surface. A rubber base plate is bonded to the lower end of the post and has a depending plug inserted into a socket in the ground.

3,371,648
LIQUID INDICATOR

Frank J. Farina, Jr., Port Huron, Mich., assignor to Mueller Brass Co., Port Huron, Mich., a corporation of Michigan

Filed Mar. 24, 1966, Ser. No. 537,182
5 Claims. (Cl. 116—117)

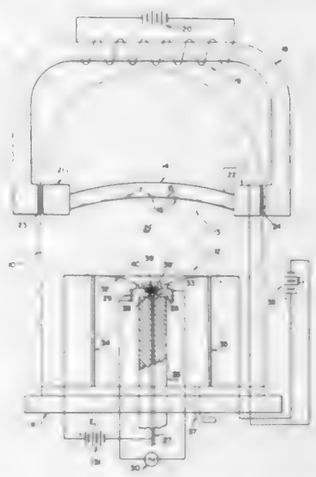


A liquid indicator for refrigerant lines to indicate the absence of liquid and whether there is water present. The indicator has a sight glass with a slightly conical sealing portion and a frustoconical sight portion coacting with an annular indicator.

3,371,649
MEANS FOR CONTROLLED DEPOSITION AND GROWTH OF POLYCRYSTALLINE FILMS IN A VACUUM

Hammond E. T. Gowen, Escondido, Calif., assignor to Technical Industries Incorporated, Burbank, Calif., a corporation of California

Application Nov. 16, 1965, Ser. No. 511,285, which is a continuation of application Ser. No. 58,144, Sept. 23, 1960, now Patent No. 3,290,567, dated Dec. 6, 1966. Divided and this application Sept. 9, 1966, Ser. No. 578,290
10 Claims. (Cl. 118—49.1)

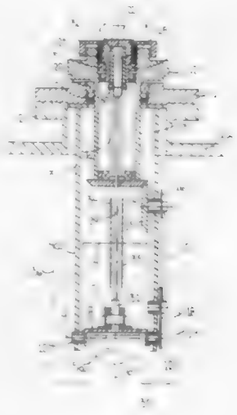


1. Apparatus for the deposition of a thin film on a substrate within a vacuum chamber, comprising: a source of material to be deposited on said substrate; heating means and an ionizing element adjacent said source of material for converting said source material into a plasma having an ionized state; a first source of direct current connected between said ionizing element and said source of material, and having a potential between the first and second ionization levels of said material and having an appropriate polarity to cause vaporized atoms of said material to be ionized to the first ionization level; conductive charging means spaced from said ionizing element and beyond said substrate; a second source of direct current connected between said conductive charging means and said ionizing element, and having a polarity which will attract the ions from said ionizing means toward said charging means whereby said substrate will collect at least a portion of the attracted ions; and a magnetostatic field generating means for causing magnetic lines of flux to be disposed at said substrate for causing deposited atoms of said material to crystallize in a preferred orientation with respect to each other and said substrate.

3,371,650
MEANS TO POSITION AND DRIVE WORK SUPPORT

Siegfried Böhler, Balzers, Heiligwies, Liechtenstein, assignor to The Bendix Corporation, Rochester, N.Y., a corporation of Delaware

Filed Dec. 27, 1966, Ser. No. 605,056
Claims priority, application Switzerland, Dec. 31, 1965, 18,168/65
4 Claims. (Cl. 118—503)



The adjusting apparatus according to the invention is for the remote adjustment of the spatial location of an object or part to be treated in an unaccessible location as in a vacuum chamber. The apparatus includes a carrier plate for the object or part to be treated which is rotatable about two different axes and is characterized by a flexible shaft which is provided for the transfer of the rotary motion about a first axis perpendicular to the carrier plate and a drive mechanism for pivoting the carrier plate into an arbitrary inclined position about a second axis perpendicular to the first axis. One end of the flexible cable is mounted to move freely in the longitudinal direction, either in an axial hole in a drive shaft or in the carrier plate.

A preferred form of performing the invention is provided in which the flexible shaft is led between two guide plates and the carrier plate is made plate-shaped and is mounted in bearings in a frame swingable about an axis parallel to the plane of the plate and which is connected to drive means for the adjustment of the inclined location of the frame.

3,371,651
FLUID APPLICATOR APPARATUS

Sigurd W. Johnson, Pennington, N.J., and Marvin A. Leedom, Warminster, Pa., assignors to Radio Corporation of America, a corporation of Delaware

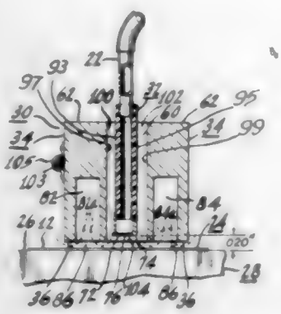
Filed Nov. 10, 1966, Ser. No. 593,494
17 Claims. (Cl. 118—637)

4. Apparatus adapted for relative motion with respect to a surface for applying a liquid to said surface, said apparatus comprising:

an applicator head having liquid supply conduit means for bringing said liquid into contact with said surface,

gas conduit means vented to the gas of the atmosphere,

liquid removal conduit means, spaced by said gas conduit means from said liquid supply conduit means, for conducting excess liquid away from said surface, and



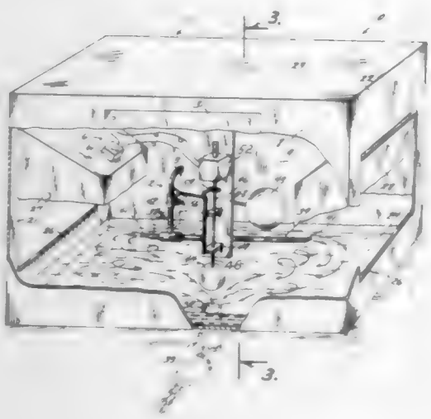
means cooperatively associated with said head to maintain said head a predetermined fixed distance from said surface with said relative motion between said surface and said head, said liquid removal conduit means comprising means to communicate with means for reducing the gas pressure within said liquid removal conduit means below that of said atmosphere, whereby said gas from said atmosphere flows into said liquid removal conduit means, carrying said excess liquid with it.

3,371,652

LIVESTOCK AUTOMATIC WATERING DEVICE

Robert A. Louks, Gilman, Iowa 50106, and Vernon H. Sietmann, Laurel, Iowa 50141

Filed June 8, 1966, Ser. No. 556,132
8 Claims. (Cl. 119—51.11)



1. An animal watering device comprising in combination:

a tank from which animals can drink, said tank having a wall and a floor, said floor having a drain outlet formed therein;

means for supplying water to said tank, said water supplying means including a nozzle for discharging water therefrom, said nozzle being spaced adjacent said wall and constituting a means for discharging the water against said wall and rebounding the water in a whirlpool manner, setting up a whirlpool scouring action and effectively suspending foreign matter in the water contained in said tank;

valve means disposed in said tank and movable from a first position wherein said outlet is closed to a second position wherein said outlet is open thus allowing the water and debris in said tank to be drained therefrom concurrently with said scouring action; and

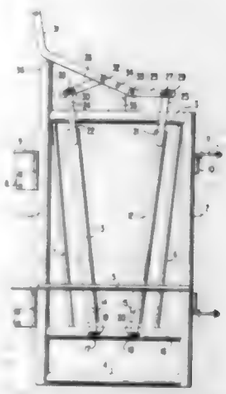
control means connected to said valve means and operable to move said valve means from the first position to the second position.

3,371,653

ANIMAL HEADGATE

John R. Anderson, Rte. 1, Bogata, Tex. 75417

Filed Aug. 29, 1966, Ser. No. 575,712
9 Claims. (Cl. 119—98)



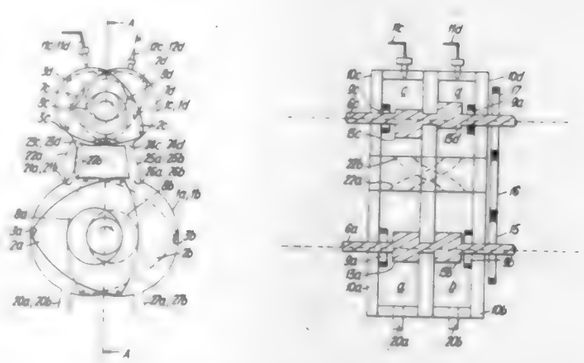
The present disclosure relates to an animal headgate which can be used as a stationary gate or as a portable gate which can be readily transported from one location to another. More particularly, the present disclosure is directed to an animal headgate which is provided with an opening-closing mechanism which cooperates with the gate frame to limit the opening movement of stanchion bars in one position and the closing movement of stanchion bars in a second position.

3,371,654

COMPOUND ROTARY PISTON TYPE INTERNAL COMBUSTION ENGINE

David Walker Garside, Sandbach, England, assignor to Rolls-Royce Limited, Derby, England, a British company

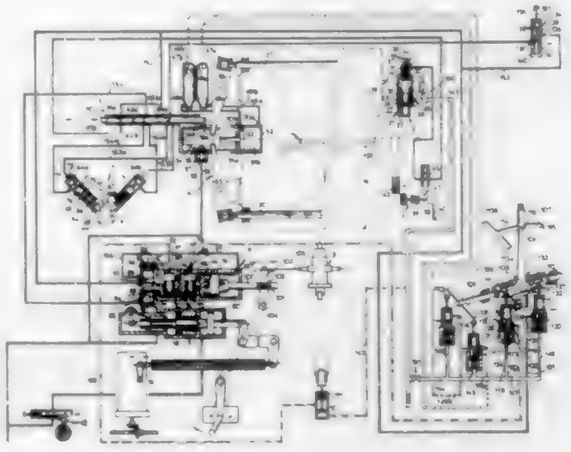
Filed Oct. 31, 1966, Ser. No. 590,710
Claims priority, application Great Britain, Nov. 13, 1965, 48,299/65
6 Claims. (Cl. 123—8)



1. A compound rotary piston internal combustion engine comprising four juxtaposed rotary piston units each including a casing having a two-lobed substantially epi-

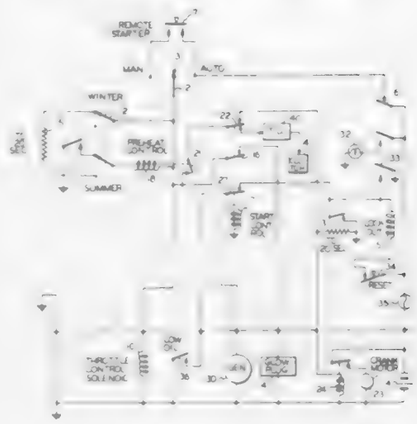
trochoidal inner peripheral surface, a rotary shaft, an eccentric mounted on the rotary shaft, a three-sided rotary piston arranged to rotate in a planetary fashion about the eccentric within the two-lobed casing and gearing to constrain the rotary piston to rotate at one third of the speed of the rotary shaft, the first and second units being of equal size but larger than the third and fourth units which are also of equal size; and further gearing to constrain the rotary pistons of all four units to rotate at the same speed; the arrangement being such that gas is drawn into the engine by the first rotary piston unit, is then initially compressed between the rotary pistons of the first and fourth units and their respective casings, is then further compressed in the fourth unit and, after combustion has been initiated, is then expanded by the rotary piston of the fourth unit and is then further expanded between the rotary pistons of the fourth and second units and their respective casings before being exhausted to atmosphere by the rotary piston of the second unit, and further, that gas is drawn into the engine by the second rotary piston unit, is then initially compressed between the rotary pistons of the second and third units and their respective casings, is then further compressed in the third unit and, after combustion has been initiated, is then expanded by the rotary piston of the third unit and is then further expanded between the rotary pistons of the third and first units and their respective casings before being exhausted to atmosphere by the rotary piston of the first unit.

3,371,655
SAFETY SYSTEM FOR SPEED REVERSAL IN HEAT ENGINES AND THE LIKE
Karl Kühn, Saint-Germain-en-Laye, France, assignor to Societe d'Etudes de Machines Thermiques, Saint-Denis, France, a body corporate of France
Filed Dec. 8, 1965, Ser. No. 512,417
Claims priority, application France, Dec. 10, 1964, 998,288
8 Claims. (Cl. 123—41)



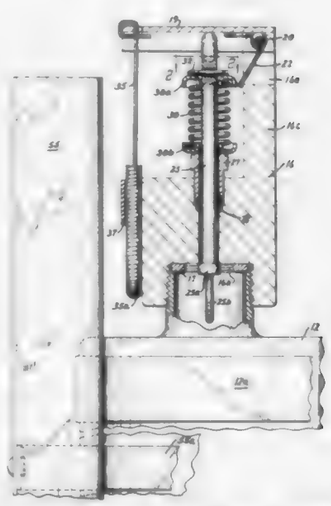
A safety system for speed reversal in heat engines fed by a fuel pump and having a speed reversing apparatus and a main control station. The means for preventing the admission of fuel and of air adapted to stop the engine during the speed reversing operation comprise in particular a one-block unit controlling the fuel pump and enclosing three chambers arranged in succession and forming slideway for slide valves respectively responsive to three separated devices of the system, i.e. means for detecting the direction of rotation of the engine, a stopping valve provided in the main control station and an electrically-controlled safety valve circuit.

3,371,656
SUMMER-WINTER AUTOMATIC DIESEL STARTING CONTROL
Norman M. Stauffer, New Holland, and Elam M. Stauffer, Ephrata, Pa., assignors to Stauffer Diesel Refrigeration, Inc., Gordonville, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1967, Ser. No. 630,983
6 Claims. (Cl. 123—179)



An electrical control system for starting diesel motors automatically is disclosed. There are provisions for cranking the motor while energizing glow plugs from either manual or automatic control positions in either summer or winter hookups. A winter pre-heat condition occurring for some twenty seconds before cranking can occur is bypassed for summer operation. Cranking is terminated when the generator voltage is sufficient to lock out the start controls. Safety provisions are made to lock out the starter circuits if not started after a time delay of twenty seconds or so and to prevent starting if the oil is low. The lock out circuit may be reset for another starting cycle after it locks out, and without lock out it will recycle automatically and restart the motor should it stop when in automatic control.

3,371,657
ENGINE ACCESSORY
William J. Buchser, Posey County, Ind. (Norman Road, R.R. 1, Box 327K, Evansville, Ind. 47712)
Filed Jan. 27, 1965, Ser. No. 428,370
1 Claim. (Cl. 123—187.5)



An engine accessory for assisting the starting operation characterized by a replaceable pressurized fuel tank having valve means controlling the flow of fuel and, in combination therewith, an independent control mechanism

removably secured to such tank to define a dispenser unit, where such unit is mounted proximate the engine and where control is achieved remote from such unit in the area of the operator.

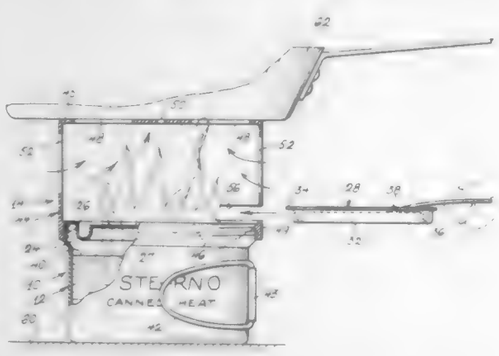
3,371,658
PRIMING METHOD AND ARRANGEMENT FOR FUEL FEED SYSTEM
Robert K. Turner, Toledo, Ohio, assignor to The Tillotson Manufacturing Company, Toledo, Ohio, a corporation of Ohio
Filed Mar. 17, 1966, Ser. No. 535,203
11 Claims. (Cl. 123—187.5)

This invention relates to a priming method and arrangement for an aspirated type of diaphragm carburetor wherein the diaphragm controls a fuel inlet valve and an actuable member is provided to move the diaphragm to open the inlet valve and a manual priming pump actuated to purge the fuel line of air and fill the fuel chamber with fuel from a supply and establish fuel pressure in the fuel chamber sufficient to release the member from engagement with the diaphragm.

ERRATUM

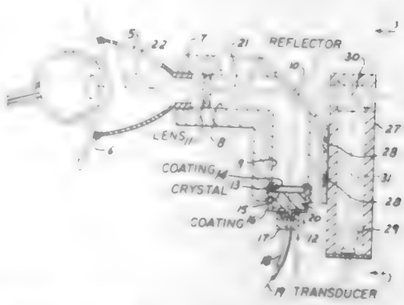
For Class 123—198 see:
Patent No. 3,371,634

3,371,659
THROW-AWAY PORTABLE STOVE
Tom S. Paspalas, 34 Mt. Vernon Ave., Bloomfield, N.J. 07003
Filed Sept. 14, 1966, Ser. No. 579,236
6 Claims. (Cl. 126—43)



A throw-away stove having a portable stove unit with a container of solidified fuel inside a ventilated housing. The container is removable from the housing and when inverted is adapted to support the housing which in turn is adapted to support a cooking vessel.

3,371,660
EQUIPMENT FOR USE IN ULTRASONIC EYE EXAMINATION
Benson Carlin, Princeton, N.J., assignor to Air-Shields, Inc., Hatboro, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 447,419, Apr. 12, 1965. This application Sept. 1, 1966, Ser. No. 576,723
14 Claims. (Cl. 128—2)



Equipment for use in ultrasonic eye examination including a device having angularly aranged bores, with a transparent ultrasonic wave reflector at the junction of the bores, providing for concurrent visual and ultrasonic eye examination.

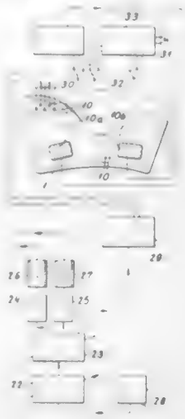
3,371,661
SPHYGMOMANOMETER
Carl A. Budde, 1303 Grandview, Glendale, Calif. 91201
Filed Feb. 24, 1965, Ser. No. 434,798
8 Claims. (Cl. 128—2.05)

Apparatus is disclosed herein for sensing and measuring fluid pulses under pressure in a duct including a transducer for generating an electrical analog signal which is proportionate to the pressure in the duct and a storage means coupled to the transducer for receiving and holding the analog signal. Electrical means are provided for developing a control signal in response to each fluid pulse and being operatively coupled to the storage means to selectively release the analog signal in response to the control signal.

3,371,662
DEVICE FOR AUTOMATICALLY EFFECTING CARDIAC MASSAGE
József Heid, József Hajós and József Seregi, Budapest, Hungary, assignors to Villamos Automatika Intezet, Budapest, Hungary
Filed Jan. 17, 1966, Ser. No. 521,006
6 Claims. (Cl. 128—24.5)

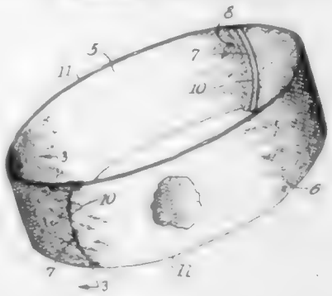
A device for automatically effecting cardiac massage, comprises a two-walled flexible chamber adapted to be secured on the heart in such a manner as to surround

the heart. The device is elastic and is provided between the walls with closed cavities adapted to communicate with apparatus for supplying to and withdrawing from the



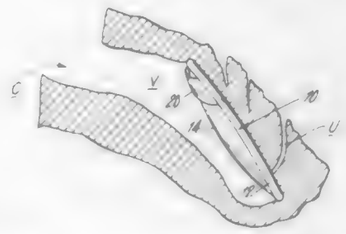
cavities a fluid pressure medium at the desired heart rhythm. The device also has stimulating defibrillating electrodes arranged in a wall of the device to conduct the action potentials of the heart into the apparatus.

3,371,663
ARM SLING
Martha M. Apgar, 4812 Briggs Ave., La Crescenta, Calif. 91014
Filed July 6, 1965, Ser. No. 469,587
4 Claims. (Cl. 128—94)



An arm sling made of two double layer lengths of stretchable fabric arranged on a bias having convexly curved ends with elastic stitching connecting the ends to form concavities into which fit an elbow and an opposite shoulder when the sling is worn.

3,371,664
DIAPHRAGM
Norman Pleshette, 21 E. 87th St., New York, N.Y. 10028
Filed Oct. 21, 1965, Ser. No. 500,104
1 Claim. (Cl. 128—127)



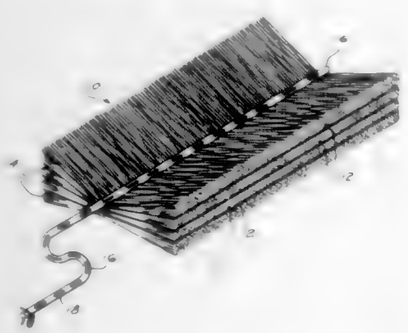
An intravaginal diaphragm having a circular peripheral frame providing the operative shape to the device and a removal band connected to extend across the perimeter of the frame and adjacent thereto so as to produce an optimum change in said operative shape to facilitate removal of the diaphragm.

3,371,665
DISPOSABLE VAGINAL SYRINGE
Madeline M. Druckenmiller, Saylorsburg, Gladys Elaine Bateman, Nazareth, and Joseph John Hauck, Walnutport, Pa., assignors, by direct and mesne assignments, to Eve's Associates, Inc., Bath, Pa., a corporation of Pennsylvania
Filed Mar. 16, 1966, Ser. No. 534,723
4 Claims. (Cl. 128—227)

1. A disposable vaginal syringe comprising:
(A) a flat bag having its walls formed of highly flexible and foldable plastic sheet material which is substantially chemically inert to body fluids and douche liquids and providing an expandable liquid storage chamber having a filling opening at its top end and a delivery opening at its bottom end, and
(B) a flat, foldable and elongated delivery tube of similar plastic sheet material connected at its top receiving end to the bag walls in liquid-tight manner about the bag delivery opening with such tube being of a certain dimensional width when in flat condition and having an initially open delivery end, and
(C) a spray nozzle in the form of an elongated, thin-walled and substantially form maintaining hollow shell of plastic substantially chemically inert to such liquids and fluids having a closed tip end and a substantially cylindrical hollow neck of certain internal diameter with its sidewall provided with a plurality of jet outlet openings, characterized by
(a) an elongated, substantially tubular and substantially form maintaining anchorage sleeve of plastic substantially chemically inert to such liquids and fluids and provided with a lengthwise split extending from end to end thereof with opposed edges on opposite sides of the split being appreciably spaced when said sleeve is unconfined, said unconfined split sleeve being of an outer diameter at least no less than the internal diameter of said nozzle neck and appreciably less than the internal diameter of the delivery end of said tube when expanded to substantially tubular form with the spacing of the opposed split edges being sufficient to permit transverse contraction of said sleeve to a diameter less than said neck internal diameter and with said transversely contracted sleeve having an elastic recovery sufficient to cause it to expand transversely when freed substantially back to its unconfined outer diameter,
(b) at least a longitudinal section of said split sleeve of appreciable length being inserted into the open delivery end of said tube with a side fold of the latter of appreciable width lapped back about an arcuate section of said sleeve whereby the outer side of said longitudinal sec-

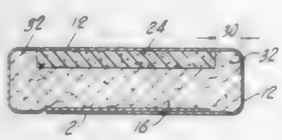
tion of said sleeve is completely encompassed by the sheet material of said tube, the longitudinal section of said sleeve in contracted condition and the encompassing tube sheet material being inserted in said tubular neck and released to expanded snugness in the latter with the tube sidewall and its lapped side fold intervening and securely clamped between said sleeve and the inside wall of said nozzle neck in a liquid-tight manner.

3,371,666
ABSORBENT DEVICE
Albert W. Lewing, Monson, Mass., assignor to Tampax Incorporated, New York, N.Y.
Filed Jan. 26, 1965, Ser. No. 428,025
23 Claims. (Cl. 128—285)



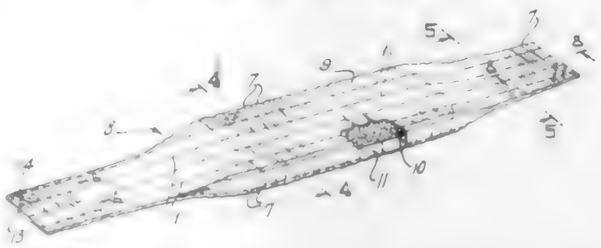
Apparatus and method having improved liquid absorption and retention properties, particularly useful as catamenial tampons, where typically a pad of cotton has water soluble, non-fibrous, carboxymethyl cellulose (CMC) having a degree of substitution above 0.35 dispersed within the pad in conjunction with an agglomeration-inhibiting means. The agglomeration inhibiting being accomplished by granulations, thin films, or the like, which maximize the total effective CMC surface exposed for absorption.

3,371,667
ARTICLE FOR ABSORBING BODY EXUDATES
Edward A. Morse, Fanwood, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed June 11, 1964, Ser. No. 374,487
3 Claims. (Cl. 128—290)



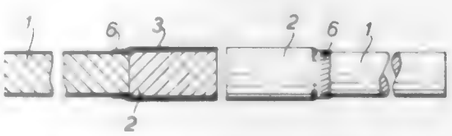
This application discloses absorbent products which include a functional, highly porous resilient element immediately adjacent the surface of the absorbent product which is to be placed against the body and which element serves to entrap highly viscous, mucoid and gelatinous constituents of the body fluids. The open structured, porous element has interstitial wall surfaces which are wettable so as to permit the fluid, low viscosity portion of body exudates to pass rapidly therethrough. Because of its porous open structured nature, the element serves to break up the low viscosity constituents of body exudates and by sheer forces exerted thereon during use render them more fluid so as to pass through the porous element and be absorbed by an absorbent core adjacent to the element.

3,371,668
SANITARY NAPKIN
Robert Wood Johnson, Princeton, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Apr. 14, 1965, Ser. No. 448,060
5 Claims. (Cl. 128—290)



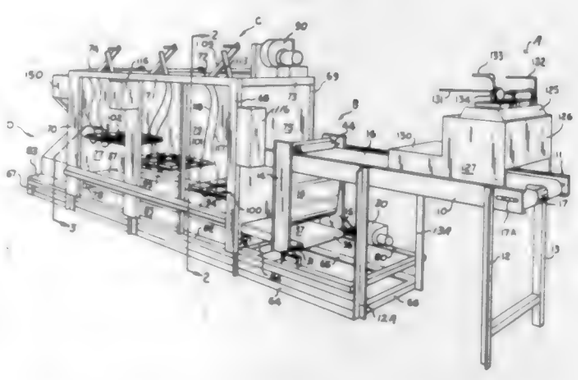
A nonwoven cover for a sanitary napkin where said cover is characterized by elasticity induced by tension-bonded strands of elastomeric material providing resultant improved comfort features.

3,371,669
MANUFACTURE OF MOUTHPIECE CIGARETTES
Desmond Walter Molins, Deptford, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain
Filed Jan. 19, 1965, Ser. No. 426,605
Claims priority, application Great Britain, Feb. 11, 1964, 5,682/64
5 Claims. (Cl. 131—94)



A method and machine for producing mouthpiece cigarettes, in which a uniting band is rolled around a mouthpiece and a cigarette length abutted and axially aligned therewith, provides for slitting at least one edge portion of the band prior to rolling so that said edge portion leaves a succession of tongues. During rolling said tongues may adjust their positions so as to provide an improved seal between the mouthpiece and the cigarette length.

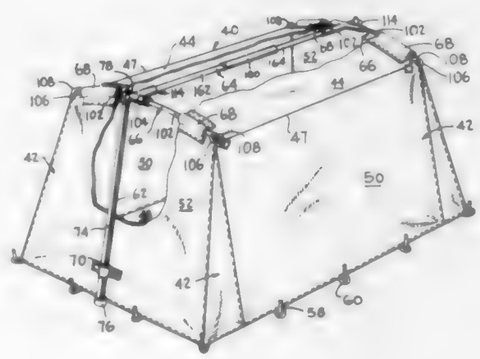
3,371,670
APPARATUS FOR CURING TOBACCO
Carl R. Camenisch, U.S. 42, Prospect, Ky. 40059
Filed Apr. 18, 1966, Ser. No. 543,128
7 Claims. (Cl. 131—121)



1. Apparatus for curing tobacco leaves detached from the stalk comprising, means for mechanically extracting moisture from the stems of the leaves, conveyor means having a generally horizontal portion for carrying the

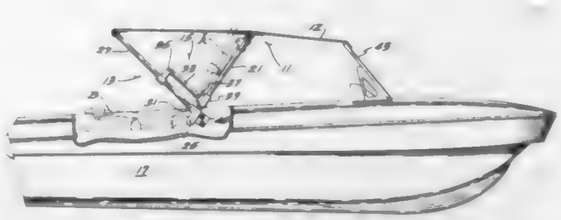
leaves to said moisture extracting means and a downwardly directed portion for carrying the leaves therefrom, a heated curing compartment, and means for moving the leaves through said compartment following their removal from said moisture extracting means and from contact with said conveyor means.

3,371,671
TENTS AND METHODS OF ERECTION
Arthur J. Kirkham, 5534 Avalon Drive, Murray, Utah 84107
Filed Oct. 23, 1965, Ser. No. 503,079
16 Claims. (Cl. 135—1)



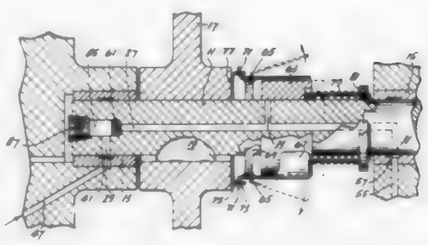
A tent construction having support structure comprising a ground-engaging, upright member to support the tent covering material upwardly and a sectioned ridge member, attached at one end to the upper end of the ground-engaging member, to urge the covering in an outward generally horizontal direction, and an elongated resilient member anchored at both ends to the tent covering material, coupled near its center to other of the support structure at or near the attachment between the upright and ridge members and having a length substantially greater than the straight line distance between anchor positions to urge the covering material both outwardly and upwardly into a taut condition responsive to placing the ridge sections in the fully erect position; novel clamp structure for telescopic tent poles; and methods of erecting tent constructions of the general type mentioned.

3,371,672
CONVERTIBLE TOP
Gordon B. Hale and Lars E. Granholm, Waukegan, Ill., assignors to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed May 31, 1966, Ser No. 553,985
9 Claims. (Cl. 135—6)



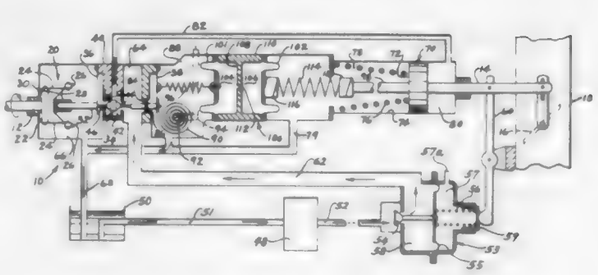
Disclosed herein is a convertible top for a boat including a first link pivotally connected to a boat hull, a second link pivotally connected to the first link and means movable lengthwise of said first link and connected to said second link and acting over-center for establishing the soft top in erected condition.

3,371,673
HYDRAULIC SPEED GOVERNOR CONTROL
Robert L. Trapp, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Oct. 14, 1964, Ser. No. 403,728
5 Claims. (Cl. 137—34)



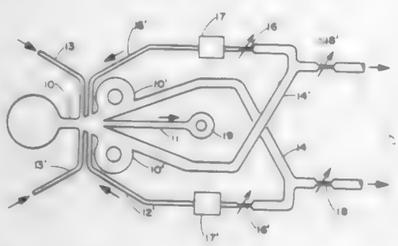
Disclosed herein is an output shaft overspeed governor which is connected to a fluid pressure sensing fuel control device operable to control the rate of rotation of the shaft and which is operable, in response to rotation of the shaft above a predetermined speed, to open a valve so as to dump fluid pressure oil whereby to affect the fluid pressure sensing fuel control device to cause a reduction in engine speed.

3,371,674
FLUID GOVERNOR OR CONTROLLER
Robert H. Thorner, 8750 W. Chicago Blvd., Office F, Detroit, Mich. 48204
Continuation-in-part of application Ser. No. 463,319, June 11, 1965. This application April 1, 1966, Ser. No. 539,358
12 Claims. (Cl. 137—36)



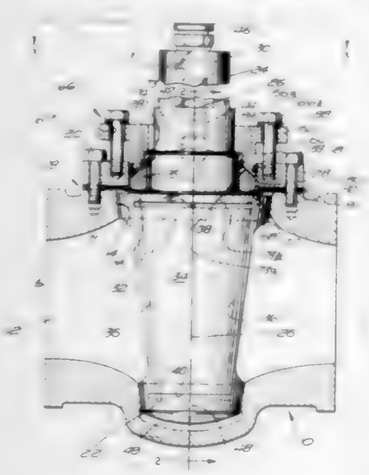
1. In a self-regulating control mechanism for automatically controlling a variable condition the combination of, control means to regulate said controlled condition, a pressure responsive member operatively connected to said control means for actuation thereof, a fluid circuit having a source of pressure fluid to produce a flow of fluid therethrough and communicating with said pressure responsive member, valve means in said circuit for controlling pressure therein acting on said pressure responsive member for effecting regulating movements thereof, sensing means responsive to changes in the controlled condition to produce forces varying as a function thereof and acting on said valve means to effect movements thereof for causing said controlled-condition-regulating movements of said pressure responsive member and said control means, and pressure-controlling means including pressure regulator means operatively associated with said control means to vary the magnitude of said source-pressure as a function of the movement of said control means and tending to correspondingly vary said pressure controlled by said valve means in a direction tending to reverse the movement of said pressure responsive member and said control means.

3,371,675
FLUID AMPLIFIER
Richard W. Hatch, Jr., Norwell, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed June 24, 1964, Ser. No. 377,647
1 Claim. (Cl. 137—81.5)



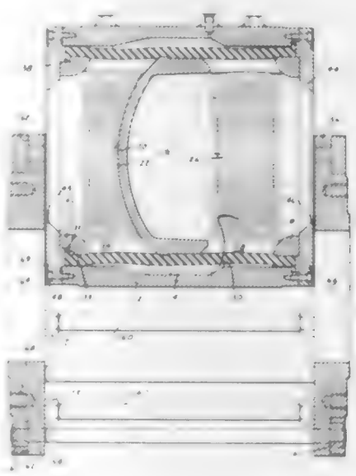
1. A fluid amplifier integral device comprising a main fluid input passage, two output passages branching from said main passage, a side wall exhaust setback and clearance recess in each of said output passages whereby ordinary bi-stable action is avoided in that no output passage wall section is provided for the fluid flow to cling to, a single central exhaust passage open to said main fluid input passage and located between said two output passages, a pair of initial signal passages as opposing control inputs to said device whereby fluid flow from said main flow input will be divided between said output passages according to the signal differential in said control input passages without flow lock-up in either of said output passages, a pair of feedback signal opposing control inputs to said device, crossover feedback passages from said output passages to said feedback control inputs, a series combination of fluid resistance and fluid capacity means in each of said crossover feedback passages, an output take-off passage from each of said crossover feedback passages, and fluid resistance means in each of said output take-off passages, whereby a feedback differential signal is applied to said device in the same proportion and direction as the initial signal differential, in such manner as to maintain the output differential as a memory of the initial signal differential.

3,371,676
LUBRICATED PLUG VALVE WITH ADJUSTABLE UNIFORM SEALING PRESSURE GLAND
John J. Mullaney III, Warwick, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed June 18, 1965, Ser No. 465,065
25 Claims. (Cl. 137—246.19)



A lubricated plug valve construction having a tapered plug with the stem extending from the large end thereof through an aperture in the cover, with a flexible sealing member secured between the cover and body and overlying the large end of the plug around the stem and with a gland around the stem exerting sealing pressure on the sealing member, in which construction the gland includes a ball joint arrangement for maintaining adjustable uniform sealing pressure against sealing member even when the gland is tilted.

3,371,677
FLUID FLOW CONTROL DEVICE
Walter L. Connolly, Orinda, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed July 2, 1964, Ser. No. 379,805
5 Claims. (Cl. 137—315)

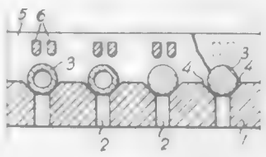


3. A valve structure comprising:
a tubular main valve body band,
a sleeve-like core having two axially spaced annular series of through slots around it mounted in radially spaced relationship within said main body band,
a barrier across said core between said spaced series of slots blocking direct flow through said core,
an expansible sleeve on said core,
an inlet connector plate having an inlet passage therethrough,
means on said inlet connector plate for attaching it to a pipe section,
an outlet connector plate,
means forming an outlet flow passage of selected internal diameter through said outlet connector plate
means on said outlet connector plate for connecting it to a pipe section of selected diameter,
a plurality of threaded members around said connector plates for forcing them into clamping engagement with said valve body band, means on said body band spacing said expansible sleeve from said connector plates, and
resilient seal rings between said connector plates and the ends of said valve body band.

3,371,678
NON-RETURN VALVE WITH ROTATING MEANS
John Anders Rydberg, Stockholm, Sweden, assignor to Aktiebolaget Gustavsbergs Fabriker, Gustavsberg, Sweden, a corporation of Sweden
Filed May 7, 1964, Ser. No. 365,637
Claims priority, application Sweden, May 7, 1963, 5,007/63
1 Claim. (Cl. 137—331)

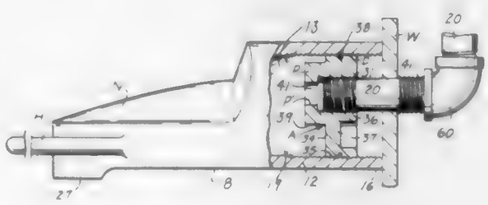
1. A valve comprising a seat in the form of a groove with a substantially V-shaped cross-section having at least one through flow opening in its bottom and a cylindrical

valve member of an elastic material which is responsive to pressure differential thereon to be lifted from its seat and is mounted for free rotation about its axis when the valve is in open position and engages the walls of the groove with its outer cylindrical surface when it is in



closed position, and stopping means for limiting the opening movement of said valve member, said stopping means extending along the whole length of the valve member and being unsymmetrically arranged relative to said axis so that said valve member automatically is given a rotation movement.

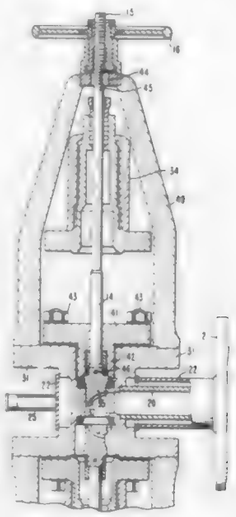
3,371,679
FITTING ADAPTER AND NOZZLE ASSEMBLY
Angelo Minella, Houston, Tex., assignor to A. Minella Plumbing Supplies, Inc., a corporation of Texas
Continuation-in-part of application Ser. No. 365,320, May 6, 1964. This application June 21, 1966, Ser. No. 559,263
9 Claims. (Cl. 137—328)



A cylindrical adapter is provided with threads on its outer cylindrical surface and an eccentrically disposed opening extending through the body of the adapter between the circular surfaces of the cylinder. The threaded surface engages internal threads formed in the base of a combined water nozzle and handle fitting and the eccentric opening is secured to a water conduit projecting from a wall surface. Positioning of the nozzle in a plane parallel to the plane of the wall is effected by rotating the adapter about the conduit while adjustment of the space between the wall and the base of the nozzle is effected by varying the degree of threaded engagement of the nozzle and the adapter.

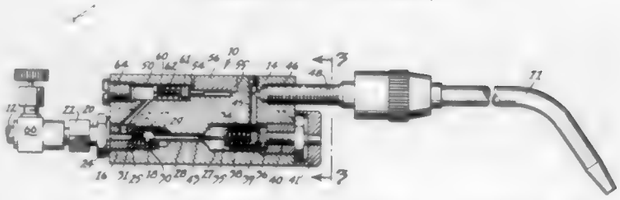
3,371,680
DOUBLE PLUG VALVE
Maurice Lee Alcorn, Jr., Greenville, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 15, 1964, Ser. No. 418,435
3 Claims. (Cl. 137—340)

A jacketed double-plug valve for handling high-melting-point viscous fluids, one valve and the adjacent outlet conduit are capable of being cleaned out without disrupting the flow through the other conduit. The valve disclosed comprises a valve body with an entry conduit and two exit conduits, the exit conduits having tapered solid plug-type valves with the valve stem located in the respective discharge flow paths, a bonnet assembly connected to the discharge conduit covers each valve, a tall yoke encases each bonnet assembly, and is connected to the valve body and clamping means are provided for



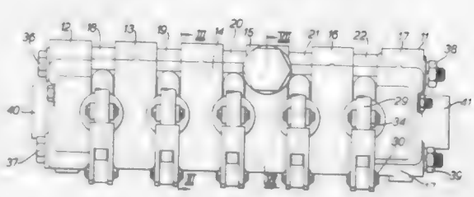
holding the plug in a closed position while the associated bonnet and yoke are removed for cleaning purposes.

3,371,681
TORCH HANDLE STRUCTURE
Jim B. Thomas, 1902 Church St., Nashville, Tenn. 37203
Filed Sept. 7, 1965, Ser. No. 485,224
1 Claim. (Cl. 137—557)



A torch handle structure including a pressure gauge and a pressure regulating mechanism, a fluid inlet bore in the bottom rear portion of the handle structure receiving a hose connector and an outlet bore in the front upper portion of the handle structure receiving a torch tip adapter parallel to the longitudinal axis of the handle structure.

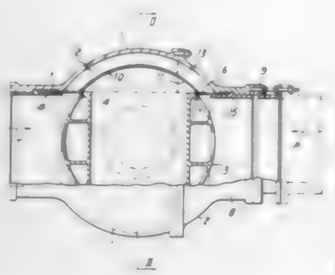
3,371,682
SLIDE VALVES
John C. E. Flint, Chalford, England, assignor, by mesne assignments, to Dowty Hydraulic Units Limited, Brockhampton, England, a British company
Filed Nov. 19, 1965, Ser. No. 508,793
Claims priority, application Great Britain, Mar. 3, 1965, 9,075/65
13 Claims. (Cl. 137—596.12)



This application discloses a multiple slide valve assembly including a plurality of casing plates, each pair of plates being separated one from the other by a slider frame housing a ported slider which is of rectangular cross-section, the casing plates and slider frames being removably connected together (to allow the interchange

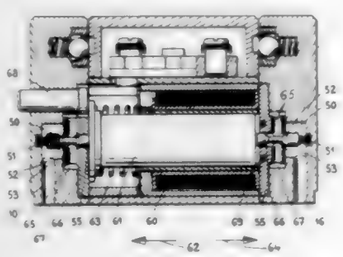
of one casing plate and/or slider frame and/or slider for a casing plate and/or slider frame and/or slider already in the multiple slide valve), passageways in the plates and/or frames enabling fluid supplied to the multiple slide valve to be available at each slider for direction to a respective service, and each slider being capable of controlling exhaust of fluid from the service, one plate, frame and slider combination, at least, having an operating characteristic different from that of at least one other such combination.

3,371,683
HYDRAULIC VALVES
James Wardhaugh Stephenson, London, England, assignor to Boving and Co. Limited, London, England, a British company
Filed Dec. 22, 1964, Ser. No. 420,376
Claims priority, application Great Britain, Jan. 16, 1964, 1,982/64
5 Claims. (Cl. 137—599.1)



A hydraulic valve which includes a valve rotor, a bypass passage and a throttle member serves as a dual-purpose valve for full-bore or throttle flow, particularly in a turbine-pump installation.

3,371,684
PNEUMATIC OR THE LIKE VALVE CONTROL ARRANGEMENT
Michel Louis André Tissot-Dupont, Annecy, France, assignor to S. T. Dupont, Paris, France
Filed Sept. 8, 1964, Ser. No. 394,848
Claims priority, application France, Sept. 11, 1963, 947,243
3 Claims. (Cl. 137—609)



1. A control valve comprising; a valve housing having an internal chamber with a pair of opposing end faces, a core mounted within said chamber for reciprocating movement between said end faces,

spring means for biasing said core against one of said end faces,

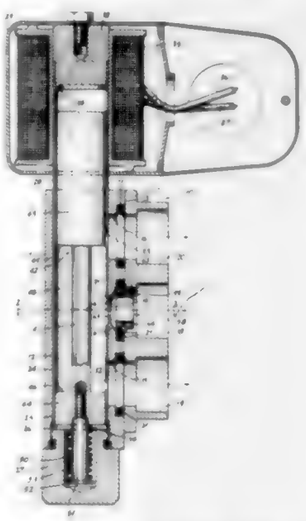
electro-magnetic means for counteracting the biasing of said spring means and for moving the core against the other of said end faces,

passage means in each end of said housing having respective inlets and outlets,

a bore in each end face interconnecting the chamber and respective passage means, a pair of valve means for controlling flow in said passage means, each of said valve means having an operating spindle projecting through one of said bores and into said chamber when the valve means are in the closed position,

and biasing means for each said valve means biasing the valve means to the closed position; whereby the core when the electro-magnetic means is not energized will contact one of said valve spindles and open the corresponding valve means against the influence of its biasing means and when energized will contact the other of said valve spindles and open the corresponding valve means against the influence of its biasing means.

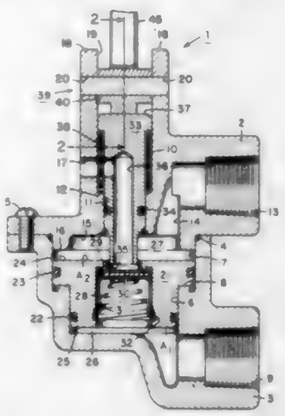
3,371,685
THREE-WAY VALVE WITH BUILT-IN PRESSURE CONTROL
Ralph B. Tilney, Sr., Clayton, Mo., assignor to Alco Controls Corporation, a corporation of Missouri
Filed June 8, 1964, Ser. No. 373,180
1 Claim. (Cl. 137—625.11)



1. In a liquid circulation system having means to circulate the liquid under various pressures and having alternate circuits through which the liquid is to be circulated, a three-way valve having an inlet port for connection to the circulating means and having two separate outlet ports for connection to the alternate circuits, the valve comprising a housing, a chamber within the housing, the inlet and outlet ports opening through the side of the housing and communicating with the chamber, the inlet port being positioned between the two outlet ports, a piston slidable within the chamber, the piston having fluid-conducting space means for connecting the inlet with each outlet port, and of a length greater than the spacing between the outlet ports so that there is always communication between the inlet and one or both outlet ports, regardless of the position of the piston, motor means for sliding the piston for alternately establishing communication between the inlet port and each of the outlet ports, the piston having ends beyond the communication between the inlet ports and the outlet ports of substantially the same diameter as that of the chamber, there being sufficient leakage between the said ends of the piston and the side of the chamber to subject the said ends of the piston to liquid pressure within the chamber, the piston and chamber being free of mutually engageable liquid seals which would block the said leakage, part of the leakage pressure being relieved by an outlet port leaving a net lateral force pressing the piston against the

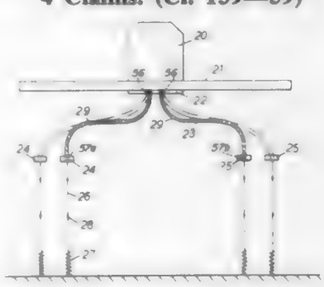
side of the chamber, and means to limit the pressure within the chamber comprising a flow control on the inlet side of the chamber, the flow control comprising a flexible member having a passage through it for maintaining communication between the inlet port and the chamber, the flexible member having a face exposed to inlet pressure and being sufficiently flexible to deflect and reduce the diameter of the passage according to the magnitude of inlet pressure and accordingly increase the pressure drop through the opening.

3,371,686
MULTI-POSITION CONTROL VALVE
Richard C. Bueler, Glendale, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 604,024
14 Claims. (Cl. 137—625.5)



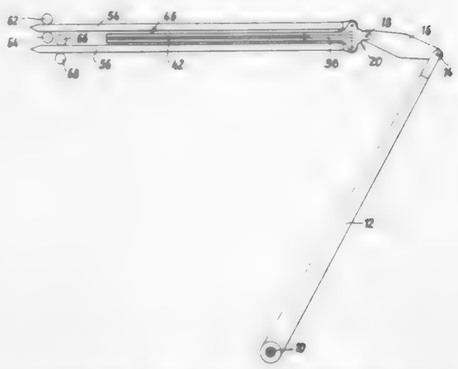
A multi-position control valve including a fluid pressure responsive member movable toward an operative position in response to fluid pressure supplied thereto, and when in said operative position, a cam actuated valve operator can be moved toward a "dumping" position opening a valve element carried by said member to effect a "dumping" application of the supplied fluid pressure and toward an exhausting position disengaged from said valve element to vent the applied fluid pressure. Opposed differential areas are provided on said member in a predetermined ratio, and the valve operator and said member are cooperatively movable to a metering position establishing an applied fluid pressure in a ratio with the supplied fluid pressure substantially equal to the ratio between the differential areas on which the supplied and applied fluid pressures respectively act.

3,371,687
HARNESSES FOR JACQUARD MACHINES
David A. Stead, 8 Haycliffe Lane 5, Bradford, England
Filed July 6, 1966, Ser. No. 563,214
4 Claims. (Cl. 139—59)



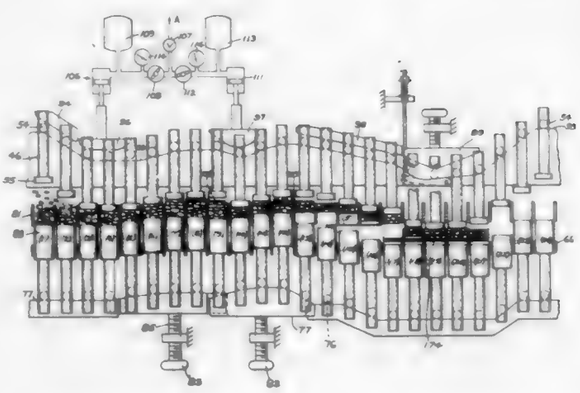
Harness cords of a Jacquard mechanism extend between the bottom board and the comber board through a tube that is flexible but capable of retaining a given shape. By changing the tube shape the length of cord between the bottom and the comber boards may be maintained constant in any lateral adjusted position of the comber board, and this dispenses with the need of vertical adjustment of the comber boards which was necessarily attendant to their lateral adjustment, to keep the heald eyes at constant level.

3,371,688
DOUBLE WEFT THREAD PICKING MEANS FOR SHUTTLELESS LOOMS
Waldemar Liebchen, Grossostheim unter Aschaffenburg, Germany, assignor to Jean Gusken, Dulken, Rhineland, Germany
Filed May 11, 1966, Ser. No. 549,293
Claims priority, application Germany, May 11, 1965, G 43,562
7 Claims. (Cl. 139—123)



A shuttleless loom has, for the purpose of introducing threads simultaneously from the same side of the shed, carrier rods guided in pairs of rollers; the inner ends of the carrier rods are pivoted to a carrier body which is guided for sliding movement in a direction parallel to the length of the rods and is moved through a pivoted link by a swinging lever.

3,371,689
APPARATUS FOR PACKING FOOD PRODUCTS
Eben H. Carruthers, Warrenton, Oreg. 97146
Filed June 18, 1965, Ser. No. 464,927
5 Claims. (Cl. 141—81)



1. A machine for packing a food product in containers wherein a basin having measuring chambers is driven through a path of travel; product deposited on the basin is urged into the measuring chambers as the measuring chambers move through their path of travel; and containers are moved through a path of travel which includes a container filling position beneath and in alignment with said measuring chambers comprising, in combination:

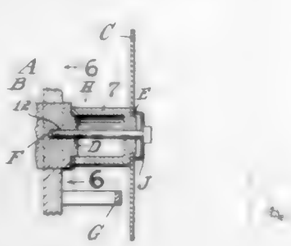
(a) means including lower plungers for supporting and compressing the product into cakes;

(b) means for withdrawing the plungers from the measuring chambers and transferring the cakes of product from the measuring chambers to the containers in succession;
(c) means below said containers for catching any crumbs of product which may break off from a cake prior to transfer; and
(d) means for adding the crumbs from one cake to a succeeding cake of product.

3,371,690
FILLING DEVICE FOR MEAT LOAF MOLDS
Richard A. Hawley, 2440 Scout Road, Oakland, Calif. 94611
Filed June 21, 1965, Ser. No. 465,326
3 Claims. (Cl. 141—99)

A filling device, for meat loaf molds, which includes two pairs of horns adapted in alternation to receive a dual mold unit thereon for filling with meat loaf material pressure-fed through the corresponding pair of horns; there being means provided in the device to assure that only the pair of horns having a dual mold unit thereon will be supplied with meat loaf material under pressure.

3,371,691
ADAPTOR FOR POWERED ROTARY HAND SAWS
Calvin C. Ebinger, 16123 Grevillea, Lawndale, Calif. 90260
Filed Oct. 23, 1965, Ser. No. 503,819
2 Claims. (Cl. 143—155)

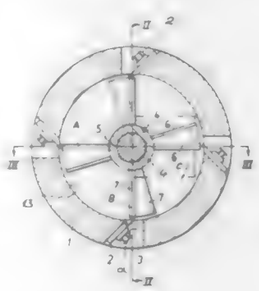


The invention relates to an attachment for powered rotary hand saws of the type embodying a driven rotary shaft having on its outer end a circular saw blade; said attachment being adapted to be interposed between the outer end of the shaft and the saw blade for the purpose of positioning the blade beyond a guard with which the saw is equipped whereby the blade may be positioned flat-wise close to a wall surface in parallel relation thereto and at right angles relative to the rotary shaft, the invention residing in an attachment which is so constructed that it may be applied to the outer blade carrying butt end of the conventional drive shaft of a well-known type of hand saw in place of the saw blade usually mounted thereon and then afford a supplemental mounting for the blade in outward relation to the blade guard.

3,371,692
METHOD FOR HARVESTING TREES
Robert W. Larson and John W. Hood, Ashland, and John P. Lundberg, Washburn, Wis., assignors to Beloit Corporation, a corporation of Wisconsin
Original application June 13, 1963, Ser. No. 287,543, now Patent No. 3,238,981. Divided and this application Feb. 25, 1966, Ser. No. 529,989
3 Claims. (Cl. 144—309)

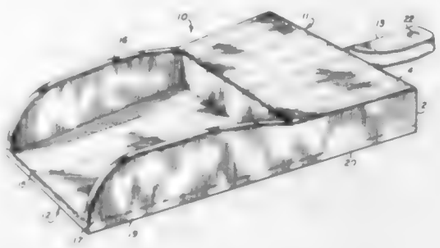
1. A method of harvesting a plurality of spaced standing trees comprising the steps of encircling and tightly gripping a plurality of spaced standing trees about their upper portions to bring them into contacting relationship with each other to form a cluster thereof, cutting the trees at and from their bases and continuing to grip the trees, clamping the trees adjacent the cut bottom thereof, and delimbing said cluster of trees.

3,371,693
COMMINUTING MACHINE FOR WOOD
Peter Voelskow, Hildesheim, Germany, assignor to Hombak Maschienfabrik K.G., Bad Kreuznach, Germany, a corporation of Germany
Filed Nov. 18, 1965, Ser. No. 509,262
4 Claims. (Cl. 144—172)



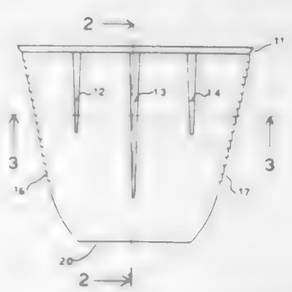
A wood-comminuting machine having a blade ring with a plurality of angularly spaced openings about an axis, a respective blade in each opening projecting into the interior of said ring for comminuting wood particles swept past the blades, a rotor rotatable about this axis relatively to the ring and having a plurality of angularly spaced generally radial vanes alternately inclined to opposite sides of the axis with each sweeping only part of the axial width of the chamber and a drive for rotating the ring and the rotor relatively whereby the vanes deflect wood particles within the chamber alternately in opposite directions and away from the walls.

3,371,694
COMBINATION SCOOP AND CUTTING BOARD
Ernest W. Miller, 420 Patch Ave.,
San Jose, Calif. 95128
Filed Apr. 9, 1965, Ser. No. 446,928
3 Claims. (Cl. 146—215)



A combination scoop and cutting board in which a cutting board is integrally connected on one side to an open ended scoop having vertical side walls and on the other side to a handle.

3,371,695
POCKET PORTABLE DRINKING CUP
Robert M. Lamb, 915 Oswego St.,
Liverpool, N.Y. 13088
Filed Mar. 20, 1967, Ser. No. 624,256
1 Claim. (Cl. 150—.5)

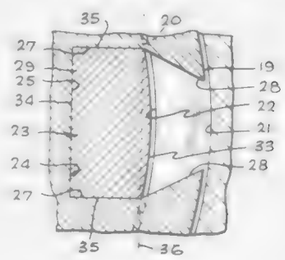


A drinking cup molded from polyethylene into a unit generally oblong in its horizontal sections and tapering towards the bottom. It is resilient so that when the narrower sides are pressed between the thumb and forefinger inwardly towards each other, the cup assumes a drinking cup shape with rounded protruding pour lips adjacent the narrow sides. It automatically returns to its normal molded shape upon release of the pressure.

3,371,696
RECLOSABLE BAGS WITH RIB AND GROOVE ELEMENTS FORMED OF DIFFERENT MATERIALS
Steven Ausnit, 124 E. 61st St., New York, N.Y. 10021
Filed Oct. 22, 1965, Ser. No. 500,652
6 Claims. (Cl. 150—3)

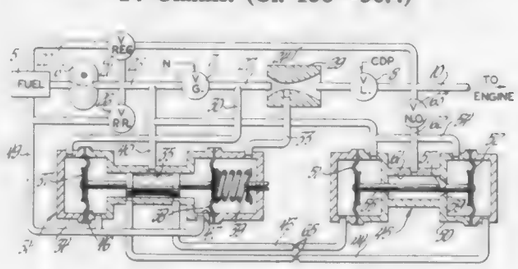
1. A sheet with a flexible closure comprising:
a web portion and a marginal portion,
said web portion being formed of a first thermoplastic substance having a given set of physical characteristics,
said marginal portions having interlocking rib and groove elements extending longitudinally thereon for providing a lock therebetween,
said interlocking rib and groove elements being formed entirely of a separate second thermoplastic substance having a different set of physical characteristics from that of said first thermoplastic substance.

3,371,697
THREADED ELEMENTS WITH LOCKING KEYS
Cullen E. James, Southgate, Calif., assignor to Newton Insert Co., Los Angeles, Calif., a corporation of California
Filed Apr. 22, 1966, Ser. No. 544,446
2 Claims. (Cl. 151—23)



A fastener including an element having external threads through which an axial groove extends, with a locking key received in the groove and adapted to be driven axially therein to lock the element against removal from a carrier part. The key has a mounting portion frictionally retained within the groove and defined by a radially outer cylindrically curved surface, a radially inner planar surface, and two parallel planar surfaces extending generally radially therebetween. The key also has a locking portion which is axially outwardly of its mounting portion and is cylindrical and essentially tangent at its radially inner side to the plane of a planar inner wall of the groove. The groove has side walls which, in extending radially outwardly, have first parallel portions and outer converging dovetail portions, with the cylindrical locking portion of the key being of a width corresponding approximately to the width of the groove between its side walls.

3,371,698
ISOCHRONOUS GOVERNOR
Alan L. Hitzelberger, Grand Blanc, and Kenneth G. Leslie, Fenton, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 26, 1965, Ser. No. 474,559
14 Claims. (Cl. 158—36.4)



A fuel control for a gas turbine including means to correct fuel flow to provide isochronous operation. In normal governing operation, the fuel flow is controlled by a governor valve responsive to engine speed across which the pressure drop is maintained constant. Since the valve opening is a direct function of speed, the flow through the valve is a predetermined value at the isochronous speed. This flow may be measured directly, but preferably the

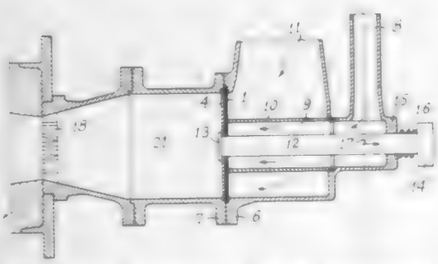
pressure drop across the valve is used as a measure of flow to control valve means supplementing the fuel flow to the engine. This supplemental fuel control may integrate the speed error or may have a valve responsive both proportionally and integrally to the fuel flow through the governor. Pressure drop across the governor valve may be balanced against a fuel limiting valve open in steady-state operation or against an orifice provided for the purpose.

3,371,699

GAS BURNER WITH PROPORTIONAL MIXER

André Henri Riot, Pamiers, France, assignor to Societe Metallurgique d'Imphy, Paris, France, a company of France

Filed June 23, 1966, Ser. No. 559,807
Claims priority, application France, July 5, 1965, 23,488
2 Claims. (Cl. 158—119)



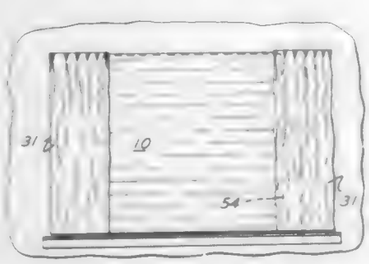
1. A gas burner comprising a gas admission conduit, an air admission conduit concentric with said gas conduit, a valve in said gas conduit, a plate closing said conduits, two series of openings in said plate one of said series passing the gas and the other of said series passing the air, means for actuating said valve by the air pressure in said air conduit for maintaining the gas pressure and the air pressure equal upstream of said plate, the total area of said series of openings for the gas and the total area of said series of openings for the air providing a predetermined constant ratio of the volume of the air to the volume of the gas downstream of said plate and means for adjusting the total volume of gas and air downstream of said plate by simultaneously obturating fractionally equal numbers of openings in said two series of openings.

3,371,700

WINDOW SHADE

Ralph Romano, Levittown, Pa., assignor of ten percent to Harold B. Lipsius and ten percent to Arthur H. Seidel, both of Philadelphia, Pa.

Continuation-in-part of application Ser. No. 407,631, Oct. 30, 1964. This application Jan. 13, 1967, Ser. No. 609,025
6 Claims. (Cl. 160—84)



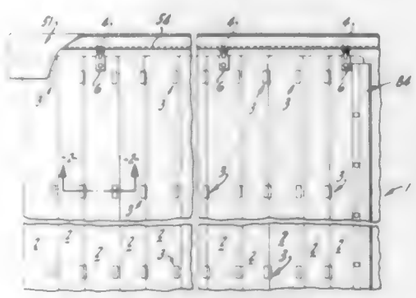
A window shade and brackets for supporting such window shade wherein the brackets are severable to accommodate drapes which may be supported adjacent the window shade. The shade, when extended, presents a corrugated appearance and is highly attractive. The brackets permit the shade to be alternatively mounted substantially flush with a ceiling, to be mounted inside a window casing or outside a window casing. The severed brackets will support drapes adjacent the window shade irrespective of the position in which the window shade is mounted.

3,371,701

FOLDABLE PANEL STRUCTURE AND METHOD OF ASSEMBLY

Andrew J. Toti, 311 W. River Road, Modesto, Calif. 95351

Filed Oct. 22, 1965, Ser. No. 501,184
18 Claims. (Cl. 160—235)



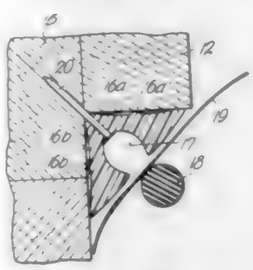
An accordion foldable panel structure and method of assembling the same. The structure is defined by a series of hingedly interconnected panels in which the hinges between adjacent panels are formed integral with the panels so that separate hinge structures are not required. The hinges comprise enlarged tongues on one panel received directly in slots in an adjacent panel. The dimension of each tongue is such that it may not be removed under normal conditions from an associated slot.

3,371,702

STORM WINDOW CONSTRUCTION MEANS

Robert M. Keegan and Robert W. Jones, Kansas City, Mo., assignors, by mesne assignments, to Aladdin Manufacturing Company, Inc., Odessa, Mo., a corporation of Missouri

Filed Sept. 23, 1965, Ser. No. 489,489
5 Claims. (Cl. 160—392)



A flexible strip operable to be nailed to a frame supporting structure such as a window frame. The strip has a groove running longitudinally the length of one side with a deformable restricted throat for receiving and holding a cylindrical bead therein. A flexible plastic sheet is secured within the groove by the bead to facilitate the covering or enclosing of said structure.

3,371,703

SONIC METHOD AND APPARATUS FOR TINNING AND CASTING METALS

Andries C. de Wilde, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 30, 1964, Ser. No. 355,635
5 Claims. (Cl. 164—49)

1. A method of wetting a metal surface with a molten metal comprising the steps of:

torsionally vibrating an elastic column producing a

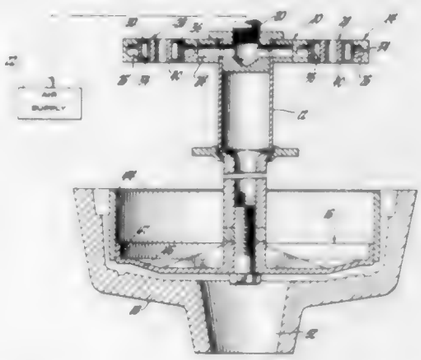
standing wave vibration at the resonate frequency thereof causing alternating torsional deflections to occur at opposite ends of said column, the deflection at one end being generally 180 degrees out of phase with the deflection at the other end at the resonate frequency,

supporting said column at the nodal point where torsional deflection is at a minimum,

supporting a metal body at one end of the column so that it receives oscillatory excitations therefrom,

placing said body while in said oscillating condition in a container, and

introducing molten metal into the container to mechanically attack and wet the surfaces of said body as a result of the shearing action between the molten metal and body surfaces.



3. Sonic vibratory apparatus for wetting the surface of a ferrous metal article located in a bath of molten non-ferrous metal, comprising an elastic member, vibration generating means connected to said elastic member, a source of compressed air for driving said vibration generating means at a resonant standing wave frequency of said elastic member so as to establish at least one nodal point and one antinodal point along said member, a coupling member extending from said elastic member at an antinodal point thereof, and means for supporting said elastic member so that said coupling member is located in said bath for delivering high frequency vibratory energy to the molten non-ferrous metal adjacent said surface of said article.

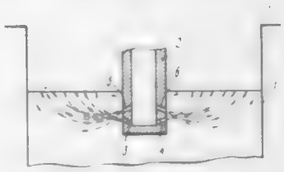
3,371,704

DEVICE FOR SUPPLYING MOLTEN METAL INTO A MOULD OF A CONTINUOUS CASTING MACHINE

Evgeny Ivanovitch Astrov, Moskovskoe Shosse, 135, kv. 52; Anatoly Dmitrievitch Klipov, Ulitsa Gastello, 15, kv. 12; and Nicolai Alexandrovitch Polushkine, Moskovskoe Shosse, 89, kv. 30, all of Gorky, U.S.S.R.; and Victor Savelievitch Routes, 7 Parkovaya Ulitsa, 15, kv. 12, Moscow, U.S.S.R.

Filed Feb. 20, 1967, Ser. No. 617,235

4 Claims. (Cl. 164—281)



A sleeve extending axially into the interior of a mold for discharging liquid metal into the mold through lateral channels formed in the sleeve and disposed circumferentially therein in groups, each of which has at least two channels therein at different levels and inclined towards one another such that the axes of the channels intersect outside the sleeve and within the mold.

3,371,705

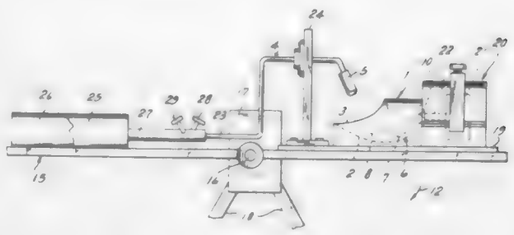
CENTRIFUGAL CASTING APPARATUS WITH SPECIAL FEED MEANS

Vittorio Ghiorzo and Francesco Ghiorzo, both of 328 W. 44th St., New York, N.Y. 10036

Continuation-in-part of application Ser. No. 414,148, Nov. 27, 1964. This application Apr. 14, 1965, Ser. No. 448,118

Claims priority, application Italy, Nov. 27, 1963, 24,605/63; Dec. 7, 1963, 25,254/63; Apr. 14, 1964, 735,062

5 Claims. (Cl. 164—289)



The casting arm of a centrifugal casting machine for precious metals carries a crucible which has a melting chamber serving to accommodate a charge of metal. When the casting arm is held in a position of rest and the charge is caused to melt, molten metal fills a lower region of the melting chamber. Such lower region communicates with the inlet of a tunnel through which the metal is expelled into the cavity of a mold when the casting arm rotates. The outlet of the tunnel is located at a level above the inlet so that molten metal seals the open top of the melting chamber from the outlet of the tunnel when the casting arm is held in the position of rest.

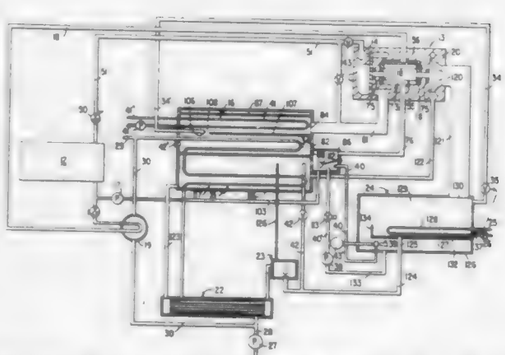
3,371,706

HEATING AND COOLING SYSTEM

Louis H. Leonard, Jr., De Witt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Original application June 23, 1964, Ser. No. 377,319, now Patent No. 3,288,203, dated Nov. 29, 1966. Divided and this application Aug. 29, 1966, Ser. No. 575,773

7 Claims. (Cl. 165—1)



Method of operating a heating system of a steam condenser in which the capacity of the system is regulated by passing a noncondensible vapor into the steam condenser.

3,371,707

METHOD AND APPARATUS FOR CONTROLLING THE TEMPERATURE IN A ROOM

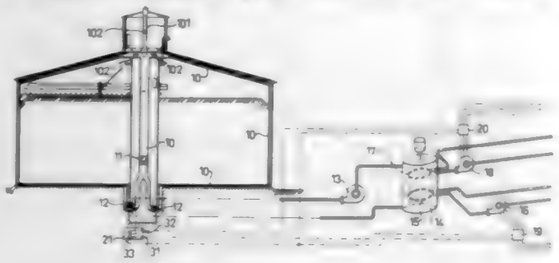
Nils Rudolf Martin Weibull, Malmo, Sweden, assignor to Ingenjorsfirman Nils Weibull AB, Malmo, Sweden

Continuation-in-part of application Ser. No. 501,073, Oct. 22, 1965. This application Dec. 30, 1966, Ser. No. 613,702

10 Claims. (Cl. 165—2)

Method and apparatus for controlling the temperature in a room by the control of the heat transfer to or from

such room in response to the arithmetic mean value of two temperatures, having an arithmetic mean value which



is proportional to the mean value of the temperature of the room.

3,371,708

ELECTRONIC COMPARATOR FOR SENSING AND AFFECTING CONDITIONS

John J. Chaparro, San Diego, Calif., assignor to Delta Design, Inc., La Mesa, Calif., a corporation of California

Filed Sept. 3, 1965, Ser. No. 484,988
6 Claims. (Cl. 165—26)

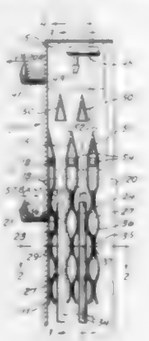
This invention relates to the control of conditions related to temperature and involves means to heat and means to cool, and it provides an improved comparator for automatically sensing and applying forces, and in this instance for activating and/or deactivating either of said two means in response to the temperature conditions surrounding said two means and with respect to a given selected temperature to be maintained.

3,371,709

FALLING FILM PLATE HEAT EXCHANGER

Curt Fredrik Rosenblad, % Rosenblad Corp., P.O. Box 585, Princeton, N.J. 08540

Filed June 15, 1965, Ser. No. 464,011
24 Claims. (Cl. 165—115)



A heat exchanger or evaporator having generally vertically extending heat exchange plates joined at pairs of alternating opposite vertical edges to make a structure having channels alternately opening at one side and then the other. Liquid is applied in the form of a film on to the wall surfaces of one set of channels at the tops thereof and a vaporous heating medium is introduced into the other set of channels through the open sides thereof. The plates are preferably thin and are strengthened by corrugating them or by means of horizontal or vertical supports or combinations of the same. The corrugations or supports serve to direct the flow of condensate from the heating medium in a generally horizontal direction for discharge.

3,371,710

USE OF SURFACTANTS IN OIL RECOVERY

Robert R. Harvey and Thomas B. Reid, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 25, 1965, Ser. No. 442,789
16 Claims. (Cl. 166—9)

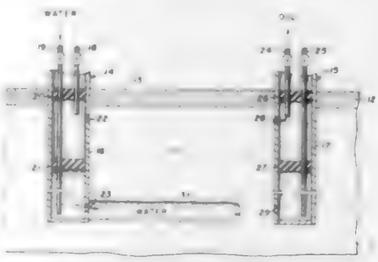
Waterflooding of an oil reservoir using a slug of nonionic surfactant dissolved in water is improved by controlling the ionic character of the reservoir environment, either reducing the monovalent ion content of the connate water which the slug contacts or incorporating multivalent ions in the aqueous slug of surfactant, or both, it having been found that monovalent ions such that Na^{+}, K^{+}, Cl^{-}, OH^{-}, etc. diminish the solubility of the surfactant and multivalent ions such as Ca^{++}, Al^{+++}, and Ce^{+++} increase solubility thereof.

3,371,711

VERTICAL FLOODING METHOD OF OIL RECOVERY

Aziz S. Odeh, Dallas, and Billy J. Dotson, Grand Prairie, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed May 16, 1966, Ser. No. 550,346
7 Claims. (Cl. 166—9)



1. A method for recovering oil from a subterranean reservoir by vertical flooding with an injected fluid which comprises:

(a) providing spaced-apart input and output well means for conveying fluids between the earth's surface and a subterranean formation containing oil,

(b) injecting a fluid for displacing oil from the input well means into the formation, said fluid being introduced into said formation at an upper horizon when said fluid is less dense than the oil and at a lower horizon when said fluid is more dense than the oil, and the fluid being injected at the rate where the magnitude of the viscous forces is decreased relative to the gravitational and capillary forces, which forces exist between the fluids and the formation, sufficiently to maintain the injected fluid interface with the oil substantially horizontal until said injected fluid extends from the input well means toward the output well means,

(c) producing oil from said output well means at a rate not above the rate at which the fluid is being injected into the input well means, said oil being produced from one of the formation's oil producing horizons,

(d) when the injected fluid extends horizontally substantially to the desired lateral distance from the input well means to the output well means, increasing the rate at which the fluid is injected into the input well

means but not to such magnitude that the formation is fractured continuously thereby,

(e) producing oil from the output well means at an increased rate but not exceeding that rate at which the fluid is then being injected, and said oil being produced at a horizon vertically opposite from the horizon at the input well means into which fluid is being injected into the formation,

(f) controlling the rate of oil production at a magnitude slightly below that critical rate of petroleum production where opposing differential gravitational forces acting on the horizontal fluid-oil interface are exceeded by the pressure gradients in the formation adjacent the output well means to disrupt the planar interface, and

(g) said oil production being continued until a substantial part of the formation is filled with the injected fluid.

3,371,712

COMPOSITION AND METHOD OF AGGLOMERATING AND STABILIZING PARTICULATE MATTER BY CHEMICAL TREATMENT

Nicholas M. Adams, Chicago, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 19, 1966, Ser. No. 543,509
15 Claims. (Cl. 166—33)

1. A process of aggregating particulate matter to produce exceptionally high strength agglomerates thereof which comprises the steps of contacting said matter in the presence of water with a polymerizable mixture comprising 25–75% by weight of an unsaturated polyester, 20–50% by weight of a colloidal silica sol containing 10–60% by weight of substantially discrete, dense non-agglomerated particles of silica colloidally dispersed in an aqueous liquid, 6–25% by weight of an alkali metal silicate, and 0.2–8% by weight of a catalyst, and effecting polymerization of said mixture in the presence of said particulate matter whereby said matter and said mixture are converted to a substantially water-impermeable mass, characterized as possessing superior strength.

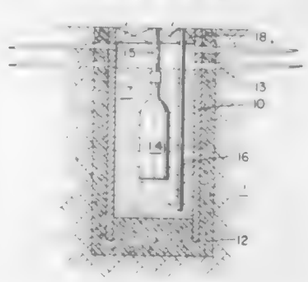
11. As a composition of matter, a polymerizable mixture which comprises 25–75% by weight of an unsaturated polyester, 20–50% by weight of a colloidal silica sol containing 10–60% by weight of substantially discrete, dense non-agglomerated particles of silica colloidally dispersed in an aqueous liquid, 6–25% by weight of an alkali metal silicate, and 0.2–8% by weight of a catalyst.

3,371,713

SUBMERGED COMBUSTION IN WELLS

Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed July 25, 1966, Ser. No. 567,576
16 Claims. (Cl. 166—38)



1. A method for steam flooding an underground formation penetrated by a well comprising:

providing in said well a container with a closed bottom, at least the lower portion of said container being substantially impermeable,

providing a burner placed entirely within the substantially impermeable portion of said container,

supplying a combustible fluid and an oxygen-containing gas to said burner, said fluid and gas being supplied in a combustible ratio,

igniting the combustible mixture in the burner,

introducing into said container water in an amount greater than the amount evaporated by combustion of said combustible mixture,

and maintaining in said well a pressure sufficient to force the resulting steam, water and combustion products into said formation.

10. Apparatus for generating steam in a well for steam flooding a formation penetrated by said well, said apparatus comprising:

a container in said well, at least the bottom portion of said container being substantially impermeable,

a burner entirely within the substantially impermeable portion of said container,

means extending from the top of said well for supplying a combustible fluid and an oxygen-containing gas to said burner,

means extending from the top of said well for supplying more than sufficient water to said container to maintain at least the impermeable portion of said container full when said burner is in operation,

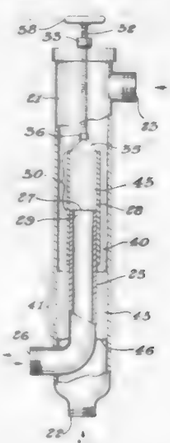
and means for igniting the mixture of combustible fluid and oxygen-containing gas in said burner.

3,371,714

REDUCING THE PRESSURE ON AQUEOUS SOLUTIONS OF POLYMERS

Melvin F. Katzer, Danville, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Mar. 25, 1965, Ser. No. 442,718
5 Claims. (Cl. 166—42)



1. A method for significantly reducing the pressure on a solution of a high molecular weight, essentially linear polymer with minimal molecular degradation of the polymer which comprises flowing the polymer solution under pressure through a porous-bed contained within a conduit, said porous-bed being insoluble in, and permeable to, the polymer solution to achieve the desired pressure reduction.

3,371,715

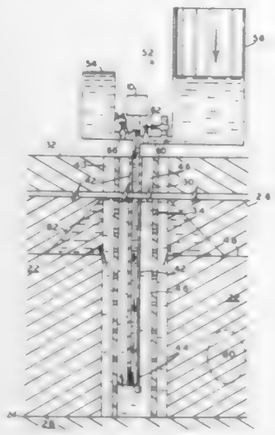
PROCESS OF TREATING A WATER BEARING FORMATION

Anderson Billy Fly and William David McDearman, Jr., Amarillo, Tex., assignors to Hydro-Jet Services, Inc., Amarillo, Tex., a corporation of Texas

Filed Sept. 20, 1965, Ser. No. 488,480
7 Claims. (Cl. 166—42)

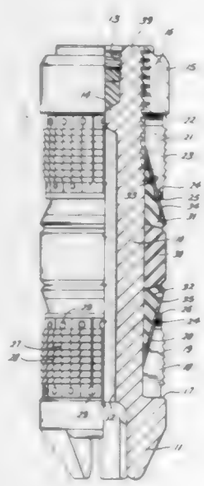
This invention teaches treating zones radially distant

from a single well bore by use of flow of liquid to control



and direct the flow of treating agents to zones remote from a well bore.

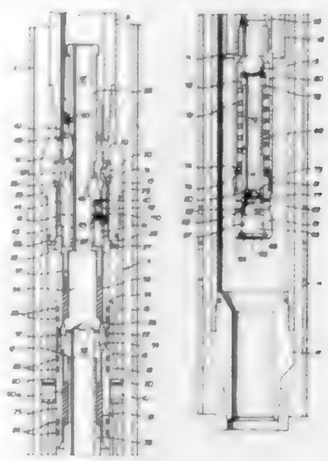
3,371,716
BRIDGE PLUG
James H. Current, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Oct. 23, 1965, Ser. No. 503,503
2 Claims. (Cl. 166—118)



A well tool having slips and packing and an elastomeric expander member with a high durometer hardness value relative to the packing, whereby the expander can function efficiently to expand the slips as well as preventing extrusion of the packing under pressure.

3,371,717
MULTIPLE ZONE WELL PRODUCTION APPARATUS
David V. Chenoweth, Houston, Tex., assignor to Baker Oil Tools, Inc., City of Commerce, Calif., a corporation of California
Filed Sept. 21, 1965, Ser. No. 488,943
26 Claims. (Cl. 166—147)

Apparatus for conducting fluid between a plurality of longitudinally spaced production zones in a well bore and the top of the well bore, in which a casing string in the well bore has longitudinally spaced openings or perforations communicating with the zones and a tubing string in the casing string is in sealed relation to one or more packers set in the casing string between the perforations to isolate the spaced perforations from one another, a flow regulator being disposed in the tubing string



at each zone, this regulator having an orifice to reduce the pressure of fluid flowing between its associated zone and the tubing string.

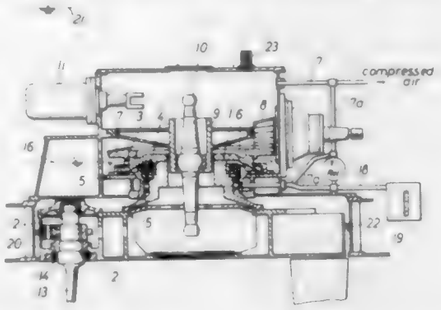
3,371,718
ROTARY JET REACTION MOTORS
Henry S. Bacon, Box 196, Shrewsburg, N.J. 07701
Filed Sept. 7, 1966, Ser. No. 577,631
2 Claims. (Cl. 170—135.4)

A thrust producing rotary propeller having a plurality of concentrically mounted rotor blades mounted on a central shaft and a jet reaction engine mounted on the tip of each blade. Each of said jet reaction engines shaped in an arc and positioned within a circular pattern for rotation. Each jet reaction engine formed with a cornucopia shaped air scoop having an enlarged open mouth to scoop air during rotation and a progressively tapered integral area throughout its length to compress the air passing therethrough and the reduced end of the air scoop connected to said jet reaction engine. Said central shaft and blades being hollow and a fuel line and ignition cables strung therethrough to carry fuel to said jet reaction engine and the means of igniting the fuel for operation.

3,371,719
BLADE WHEEL SHIP PROPELLER
Wolfgang Baer, Heidenheim-Mergelstetten, Germany, assignor to J. M. Voith GmbH, Heidenheim, Germany
Filed Feb. 16, 1967, Ser. No. 616,536
Claims priority, application Germany, Feb. 26, 1966, V 30,485
4 Claims. (Cl. 170—146)

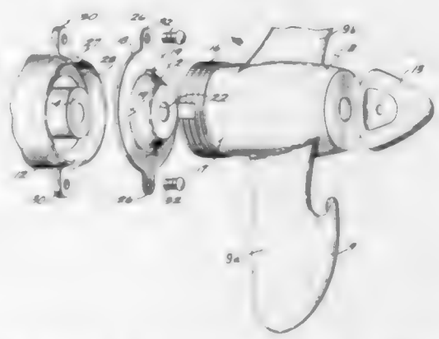
The present invention relates to a blade wheel ship propeller including a housing, a hollow shaft in said housing, a wheel body including propeller blade pivots

drivingly connected to said hollow shaft to be driven thereby, and a propeller well, in which first sealing means are interposed between said housing and said hollow shaft while second sealing means surround said propeller blade pivots for sealing the same toward the outside water. The said wheel body and said housing together form a com-



pressed air receiving and storing vessel adapted to be connected to a source of compressed air, while pressure control means communicating with the interior of said vessel is provided for controlling the pressure therein so as to maintain the same in said vessel above the pressure of the water at the immersing depths of the propeller.

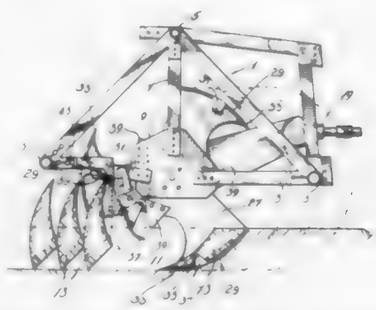
3,371,720
FISH LINE CUTTER
Clarence E. Blanchard, Jr., Kenosha, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Aug. 25, 1966, Ser. No. 575,061
11 Claims. (Cl. 170—160.23)



Disclosed herein is the combination, in a marine propulsion device, of a lower unit having a gear case, a propeller shaft mounted in said gear case and extending rearwardly therefrom and a propeller having a blade and a propeller hub supporting said blade and mounted on said shaft rearwardly of the gear case. The propeller hub has an outer face provided with a screw thread located between the blade and the gear case and having a pitch extending in the same general direction as the pitch of the propeller blade. In addition, cutting means are located between the lower unit and the propeller hub and mounted to the lower unit.

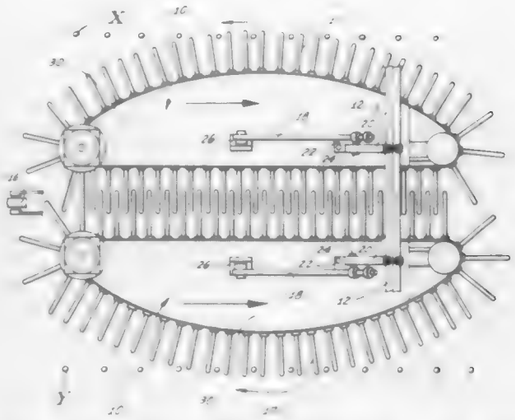
3,371,721
ROTARY SPADE PLOW
Edmond Mathis, 3625 Laurier St. E., Apt. 2, Montreal, Quebec, Canada
Filed Apr. 5, 1965, Ser. No. 445,517
6 Claims. (Cl. 172—112)

A rotary spade plough formed of a frame on which is rotatably mounted a spade-equipped wheel having a plurality of radial arms at the outer end of each one of which a spade is provided having a cutting leading edge adapted to come into engagement with the soil as the wheel rotates. Between each two arms and inwardly of the spades is a pivotable shoe mounted at the rearward end of the frame. Cams mounted on the radial arms between succes-



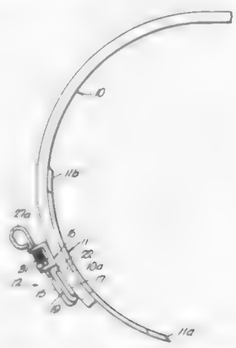
sive spades pivot the shoe outwardly, as the wheel rotates, to pack successive soil lumps cut by the spades.

3,371,722
CULTIVATOR
Edward D. Conner, 2700 Peterson Way, Apt. 9–A, Costa Mesa, Calif. 94500
Filed June 8, 1965, Ser. No. 462,259
6 Claims. (Cl. 172—546)



A cultivating mechanism is described in the following specification which is intended to be drawn, for example, by a tractor, or the like, down a row of crops, and which operates to remove weeds and loosen the soil around the crops, without damaging the crops themselves.

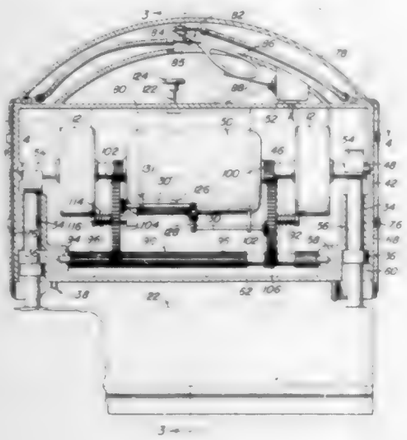
3,371,723
BLADE FASTENING ARRANGEMENT FOR IMPLEMENTS
Elmer J. Appl, Leoti, Kans. 67861
Filed June 14, 1965, Ser. No. 463,767
8 Claims. (Cl. 172—753)



A fastener assembly for releasably locking ground working blades to shanks of farm implements such as chisel plows. Each assembly includes a notched tongue member secured to the blade and projecting rearwardly

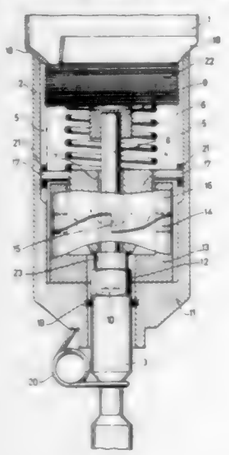
through an aperture in the shank. A bifurcated keeper member and a locking member engage the notched portions of the rearwardly extending tongue and cooperate with a spring biased sliding bolt to lock said blade to said shank in a fixed but easily releasable manner.

3,371,724
POWER WEDGE
Donald K. Crowell, 1967 San Gabriel St., San Bernardino, Calif. 92404
Filed Oct. 4, 1965, Ser. No. 492,637
16 Claims. (Cl. 173—123)

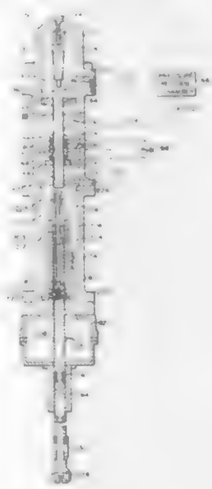


A triangular wedge element mounted on a drive unit which forms a continuation of the wedge shape of the element and which can be selectively power actuated so as to effect a driving of the wedge element into a workpiece for effecting a splitting of the workpiece. The entire tool, because of the shape thereof, advances into the wedge defined split so as to enable a continuous advance of the tool. The driving of the wedge-shaped element can be effected through the utilization of rotating cams or exploding cartridges.

3,371,725
ELECTRIC HAMMER DRILL ATTACHMENT
Johan Wilhelm Jansen, Eikbasserweg 238, Hilversum, Netherlands, and Hendrik Hoffmann, Johannes Poststraat 25, Amsterdam, Netherlands
Filed Mar. 1, 1966, Ser. No. 530,868
Claims priority, application Netherlands, Mar. 5, 1965, 65—2,797
8 Claims. (Cl. 173—123)



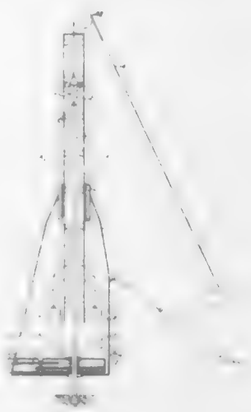
A barrel has a front end in which a tool holder is coaxially journalled for rotation and for limited sliding movement from a first position, to which it is urged, to an extended second position. A hammer member is reciprocable in the barrel and is normally urged into engagement with the inner end of the tool holder. A drive shaft drives the tool holder for rotation thereof. A pair of cooperating cam rings are so arranged in the barrel that, when the tool holder is in its second position, the tool holder only is rotated, and when the tool holder is in its first position, rotation of the tool holder is transmitted to one of the cam rings which in turn effects axial reciprocation of the other cam ring and thereby of the hammer which is operatively associated with the same, so that the hammer will strike axial blows upon the tool holder while the same rotates.

3,371,726
ACOUSTIC APPARATUS
John V. Bouyoucos, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed May 24, 1965, Ser. No. 458,245
35 Claims. (Cl. 173—134)

This application discloses percussive tools suitable for use in earth boring, pile driving and other applications. Tools utilize a hammer and anvil system wherein the hammer element is included within a hydroacoustic device which converts the flow of a pressurized fluid, such as hydraulic oil, into alternating mechanical energy as exhibited by oscillatory motion of the hammer element. The anvil element is spaced from the hammer element except when receiving impacts therefrom and extracts mechanical force pulses from the hammer element during alternate one-half cycles of the oscillatory motion of the hammer element. These force pulses are transmitted by the anvil system to the work. This transmission may be via a drill steel when the work is an earth formation which is being drilled.

3,371,727
DEVICE FOR THE ROTATION AND FEEDING OF A DRILLING STEM FOR ROTARY AND PERCUSSIVE-ROTARY DRILLING RIGS
Vasily Fedorovich Belousov, Cheljabinsk, Stanislav Nickolaevich Zhilin, Kopeisk, and Vladimir Dmitrievich Butkin, Cheljabinsk, U.S.S.R., assignors to Nauchno-Issledovatelsky i Proektno-Konstruktorsky Institute po Dobyche Poleznykh Iskopaemykh Otkrytym Sposobom, Cheljabinsk, U.S.S.R.
Filed Oct. 14, 1964, Ser. No. 403,847
7 Claims. (Cl. 173—148)

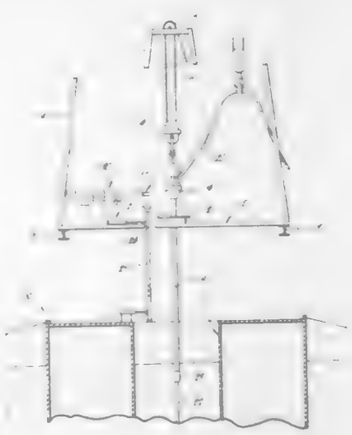
1. A device for the rotation and feeding of a drilling stem for rotary and percussive-rotary drilling rigs, comprising: a stationary mast including guides; a mov-

able mast having an upper end and a pulley thereon for supporting a tension member for pulling up a drilling stem, said movable mast being mounted in said guides for longitudinal reciprocation movement; a rotary table disposed in the lower part of said stationary mast; actuating cylinders coupled to said movable mast to move the same; a swivel adapted for being mounted



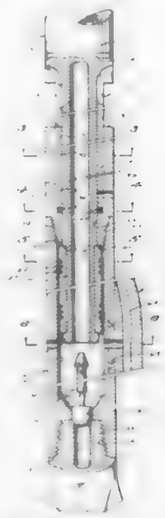
on the upper end of said drilling stem; a thrust mechanism coupled with said swivel and having retracted and extended positions; said movable mast including means engageable with said thrust mechanism in the extended position to transmit feeding effort to said drilling stem via said thrust mechanism, said thrust mechanism in the retracted position enabling unimpeded pulling up of the drilling stem.

3,371,728
KELLY STABBER
Robert Curtis Crooke, Corona Del Mar, Coral L. Cooper, Los Alamitos, and Nick Koot, South Laguna, Calif., assignors to Global Marine, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 496,949
7 Claims. (Cl. 175—85)



A base is fixed relative to a rotary table in a drilling rig as a part of apparatus for handling pipe and kelly joints during drilling operations. The apparatus includes jaw means movable toward and away from each other for releasably engaging a kelly joint. The jaw means are fitted with an adapter hingeable into cooperation therewith for converting the jaw means to grasp a drill pipe. The apparatus also includes means for reciprocating the jaw means toward and away from the base to and from the rotary table.

3,371,729
CIRCULATING STABILIZER-REAMER AND BUMPER
Charles J. Carr, 3079 W. Orange, Anaheim, Calif. 92804
Filed Oct. 12, 1965, Ser. No. 495,133
10 Claims. (Cl. 175—293)

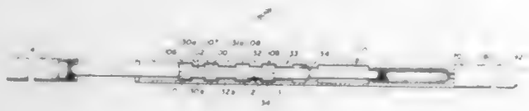


A combination fluid circuating stabilizer reamer and bumper tool for drilling wells engageable in an elongate drilling string of fluid conducting drill pipe and including, an elongate body having a central longitudinal flow passage, a tool joint portion at its upper end, a head portion below the tool joint portion and defining an annular, downwardly disposed bumper surface, an elongate central body portion of reduced diameter depending from the head portion, the upper portion of said body portion being splined, an elongate cylindrical bumper head depending from the body portion and defining an upwardly disposed annular striker surface at its upper end; an elongate barrel having a central flow passage and a tool joint portion at its lower end, a lower bore in the barrel and terminating therein to define an upwardly disposed bottom, said lower bore cooperatively receiving the bumper head for longitudinal shifting therein, an annular downwardly disposed bumper surface at the upper end of the lower bore and opposing the striker surface on the bumper head, an upper bore continuing upwardly from the lower bore, said upper bore slidably receiving the lower portion of the body portion, a socket in the upper end of the barrel and having splines slidably receiving and engaging the upper splined portion of the body portion, a socket in the upper end of the barrel and having splines slidably receiving and engaging the upper splined portion of the body portion; an annular upwardly disposed bumper surface on the upper end of the barrel opposing the striker surface on the head portion; and a plurality of circumferentially spaced, substantially longitudinally extending formation engaging stabilizing vanes fixed to and projecting radially outwardly from the barrel, said body being shiftable from an up position where the bumper surface on the bumper head engages and stops against the striker surface in the barrel, to a down position where the striker surface on the body engages the bumper surface on the barrel.

3,371,730
MECHANICAL DRILLING JAR
James L. Newman, 1321 Glen Cove, Richardson, Tex. 75080
Filed Sept. 20, 1965, Ser. No. 488,333
11 Claims. (Cl. 175—300)

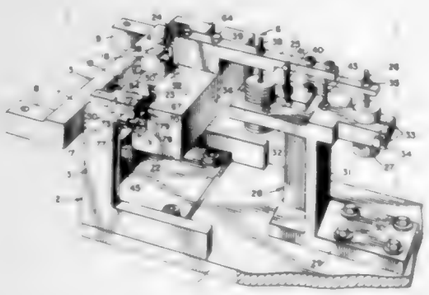
A drilling jar having a mandrel with a tool joint at the upper end, a knocker shoulder formed at the lower end

of the tool joint, a cylindrical sealing surface extending downwardly from the knocker shoulder, a mandrel sleeve having lugs disposed around the mandrel body and retained in place by a wash pipe threaded into the mandrel body, and an O-ring seal around the bottom end of the wash pipe. A sealing collar is disposed around the cylindrical sealing surface of the mandrel and has an upwardly facing knocker shoulder at the upper end and O-ring seals



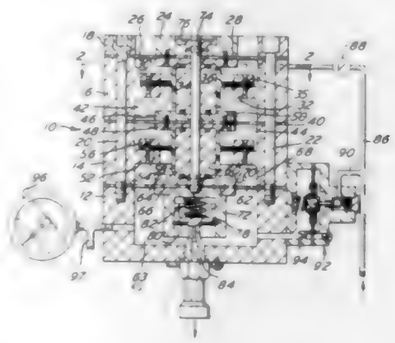
slidably engaging the cylindrical sealing surface of the mandrel. The housing body is threaded onto the sealing collar and contains lug means cooperatively engaging the lug means on the mandrel. A replaceable wash pipe sleeve having a cylindrical interior sealing surface cooperatively receiving the O-ring seal on the wash pipe is held in place in the housing body by a tool joint sub threaded into the lower end of the housing body.

3,371,731
VIBRATION-PROOF WEIGHING SCALE WITH FLEXURE PIVOTS
Robert H. Connors, Chicago, and King L. Klopfenstein, Prospect Heights, Ill., assignors to Triangle Package Machinery Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 15, 1966, Ser. No. 536,215
21 Claims. (Cl. 177—47)



1. A weighing scale having a substantially equal mass moment system, comprising
(a) a frame,
(b) a first movable weighing element, including a load receiving member adapted to receive a quantity of a product to be weighed and having a predetermined mass,
(c) a second movable weighing element having a predetermined mass,
(d) a substantially vertical flexible member connecting said first weighing element to said second weighing element,
(e) guide means associated with said first weighing element to insure movement thereof in a substantially vertical path during the weighing operation,
(f) a pivot system having the pivot axis thereof fixed,
(1) a part of said pivot system being supported by said frame, and
(2) another part thereof being mounted on said second weighing element,
(g) spring means acting upon said weighing elements to control the movement thereof when weight is added to said load receiving member, the torque of said spring means being substantially zero at the time the quantity of product to be weighed is on said load receiving member,
(h) the mass of said first weighing element together with the product thereon being weighed, acting through said flexible member, multiplied by the distance from said flexible member to said fixed pivot axis, and the mass moment of said second weighing element being substantially equal in a horizontal plane through said fixed pivot axis, whereby a substantially balanced mass moment system in said horizontal plane is achieved.

3,371,732
PNEUMATIC WEIGHT TRANSMITTER
Donald E. Stein, Millville, N.J., assignor to Kane Air Scale Company, Glassboro, N.J., a corporation of New Jersey
Filed June 30, 1966, Ser. No. 561,872
8 Claims. (Cl. 177—208)

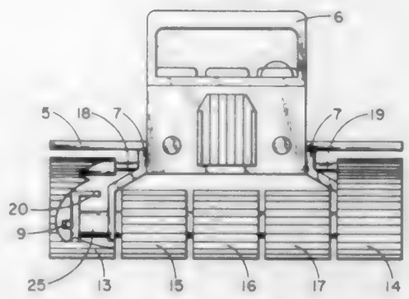


1. A pneumatic weight transmitter comprising a body having a weighing anvil connected to a tare weight diaphragm, said diaphragm partially defining a portion of a tare weight chamber, said body having a net load chamber partially defined by a net load diaphragm, at least two dampening chambers between said tare weight and net load chambers, said dampening chambers each being partially defined by an annular dampening diaphragm, a dampening medium in said dampening chambers, the outer peripheral portion of each dampening diaphragm being supported by a separate flange on the inner peripheral of said body, the inner peripheral of each dampening diaphragm being connected to a guide member, means defining an outlet flow passage from said net load chamber, a valve member in said net load chamber and supported by said net load diaphargm for controlling flow through said passage, means for introducing air at a constant flow into said net load chamber, said body having a vent chamber between one of said dampening chambers and said net load diaphragm, said vent chamber being partially defined by said net load diaphragm and being vented to atmosphere, and rigid means cooperating with said guide member and extending between said anvil and net load diaphragm, whereby force supplied to said anvil is transmitted by said rigid means to said net load diaphragm and balanced by the pressure in said net load chamber which is controlled by the relative position of said valve member with respect to said passage.

3,371,733
FULLY TRACKED VEHICLE
Paul Kehler, 6752 Sy Road, Niagara Falls, N.Y. 14304
Filed Aug. 30, 1965, Ser. No. 483,764
1 Claim. (Cl. 180—6.7)

A power driven vehicle having a plurality of side by side ground-engaging endless track members so that the entire lower surface of the vehicle is track-supported, with

drive means for the outer tracks and differential drive means for the inner tracks, the two outer tracks being independently power driven and the differential drive means causing each inner track to be driven at a speed intermediate the speeds of its two adjacent tracks.

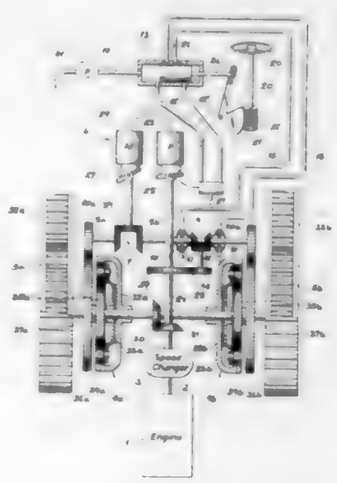


3,371,734

STEERING SYSTEM FOR ENDLESS-TRACK VEHICLES

Franz Xaver Zaunberger, Augsburg, and Artur Kugler, Hainhofen, Germany, assignors to Zahnraderfabrik Renk A.G., Augsburg, Germany, a corporation of Germany

Filed Sept. 8, 1966, Ser. No. 577,976
Claims priority, application Germany, Sept. 8, 1965, Z 11,747
8 Claims. (Cl. 180—6.44)



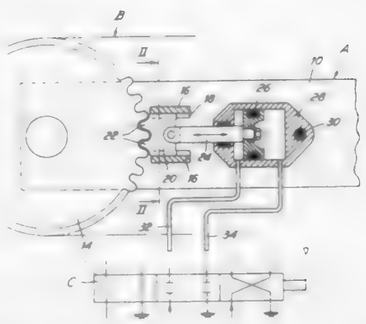
1. In a vehicle having a pair of endless tracks, in combination, a pair of drive shafts for said tracks; an engine; a steering device; a main shaft coupled with said engine; transmission means including a pair of differential gear trains for powering said endless tracks, each of said differential gear trains being provided with a first input connected to said main shaft, a second input, and an output connected to the respective drive shaft; two control shafts each connected to said second input of a respective differential gear train; a torque generator connected to said control shafts and responsive to said steering device for applying to said control shafts a reversible differential torque continuously variable in a range between zero and a predetermined maximum; a servo mechanism under the control of said steering device; and additional drive means responsive to said servo mechanism for applying to one of said control shafts a supplemental torque aiding said differential torque at least in the upper region of said range.

3,371,735

DEVICE FOR LOCKING TRACKED VEHICLES, IN PARTICULAR EXCAVATORS AND THE LIKE

Arturo Masera, Via Trieste 22, Piacenza, Italy

Filed Apr. 18, 1966, Ser. No. 543,338
Claims priority, application Italy, Apr. 24, 1965, 3,946/65
7 Claims. (Cl. 180—9.62)



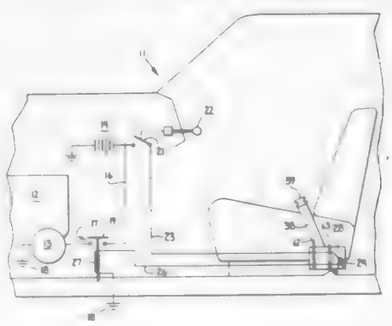
A locking device for a tracked vehicle wherein a slidable member is mounted in the frame and guided for movement toward and away from the driving gear wheel in a direction generally radially of the wheel. The slidable member has a tooth structure on its one end for moving into mesh relationship with the teeth of the gear wheel when moved in one direction and out of mesh with the gear wheel when moved in the other direction. A hydraulic system is provided to drive the slidable member.

3,371,736

SAFETY BELT SYSTEM

Fred I. Lewis, 2810 E. 10th St. 46017, and Gene Richard Jack, 1418 Cottonwood Drive 46012, both of Anderson, Ind.

Filed Dec. 8, 1965, Ser. No. 512,453
3 Claims. (Cl. 180—82)



A spring wound safety belt retractor spool for retracting a belt by winding thereon. A cam mounted on a screw threadedly received by the spool for linear movement of the cam by rotation of the spool. A switch having an operating arm movable by the cam to open the switch when the belt is wound on the spool.

3,371,737

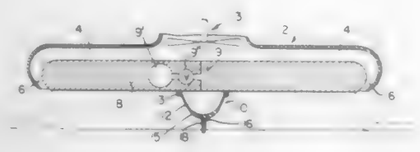
CONTROLLED HEIGHT AERODYNAMIC AND HYDRODYNAMIC BAFFLES FOR AIR CUSHIONED VEHICLES

Arnold M. Hall, Noank, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 1, 1964, Ser. No. 400,664
10 Claims. (Cl. 180—117)

1. In an air levitated vehicle supported by a peripherally confined fluid cushion, the improvement comprising

at least one laterally disposed baffle extending downwardly from said vehicle for lateral control of the fluid cushion, said baffle comprising a rigid lower portion and a flexible upper portion including an inflatable pod fixed to said vehicle and normally in a contracted position said pod being of trough configuration opening upwardly in a continuous edge secured to the vehicle and terminating downwardly in a surface adapted to contiguously join said rigid lower portion, a source of pressurized fluid and

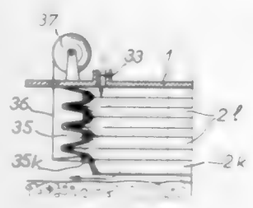


means to convey and regulate the amount of fluid introduced into said pod so as to control the lateral expansion of said pod as a control of pitch and roll, together with tension means compressing said pod and elevating said lower portion of said baffle upon reduction of pressure within said pod, said tension means being located entirely within said pod and operatively coupling the vehicle and the lower surface of said pod.

3,371,738
SURFACE EFFECT DEVICES WITH SKIRT HEIGHT ADJUSTING MEANS

Jean H. Bertin, Neuilly-sur-Seine, France, assignor to Societe Bertin & Cie, Paris, France, a company of France

Original application Jan. 11, 1962, Ser. No. 165,634, now Patent No. 3,263,764, dated Aug. 8, 1966. Divided and this application Oct. 20, 1965, Ser. No. 498,315
Claims priority, application France, June 30, 1961, 80,047
5 Claims. (Cl. 180—127)

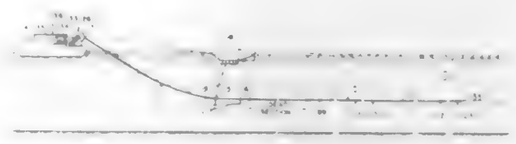


1. A fluid cushion skirting system for a movable body of the ground effect type having a support frame spaced from a bearing surface along which said body is designed to move, and a skirt free edge positioned in operation adjacent to but clear of said bearing surface to define therewith an operative leakage gap between an inner pressure fluid cushion and an outer lower pressure fluid medium and forming the periphery of an orifice opening extending in close proximity to said bearing surface, wherein the improvement comprises a supple fluidtight skirt body portion carried by said support frame and laterally bounding a cavity for confining said pressure fluid cushion and extending for substantially its full length outwardly from said support frame toward said bearing surface and terminating in said skirt free edge, said skirt body portion being at least partly contractible toward and expansible away from said support frame, and selectively operable, skirt body control means for selectively adjustably contracting or expanding at least a part of said skirt body portion whereby the operative length of said part is adapted to be varied to permit the position of said support frame relative to said bearing surface to be varied while keeping said skirt free edge in proximity to said bearing surface whereby leakage from said cushion to said outer fluid medium is minimized and whereby damage to the body structure is avoided.

3,371,739
MEANS FOR VARIABLY CONTROLLING THE BUOYANCY OF A SEISMIC DETECTION STREAMER

Raymond H. Pearson, Richardson, Tex., assignor to Whitehall Electronics Corporation of the First Bank & Trust Building, Richardson, Tex.

Filed May 23, 1966, Ser. No. 552,098
22 Claims. (Cl. 181—.5)

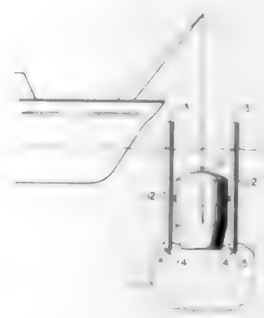


A buoyancy control system for an expansible detection streamer comprising a plurality of serially connected oil filled sections, each containing a plurality of wave detectors therein for transmitting electrical seismic signals over a two conductor channel to a vessel while the streamer is towed thereby, each section having an oil line including a normally closed electrically operated inlet valve connected to a pressurized oil source on the vessel, a second normally closed electrically operated valve operable to exhaust oil from the section, a depth actuated transducer within each section connected by the channel to control apparatus on the vessel and effective during a towing operation to operate the inlet and exhaust valves selectively to maintain each section at a constant fixed depth of submersion.

3,371,740
SYSTEM AND METHOD FOR REDUCING SECONDARY PRESSURE PULSES IN MARINE SEISMIC SURVEYING

George B. Loper, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Continuation of application Ser. No. 353,874, Mar. 23, 1964. This application Aug. 22, 1966, Ser. No. 574,244
14 Claims. (Cl. 181—.5)



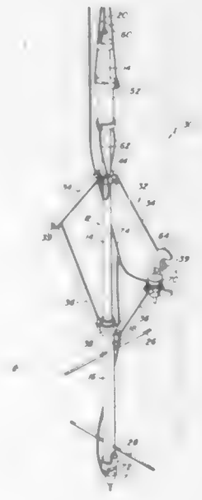
The specification discloses an arrangement in combination with a marine seismic source for reducing secondary pressure pulses caused by the oscillation of a bubble formed in the production of a seismic disturbance in water. A plurality of conduits is provided, each having

an upper end extending to the surface and open to the atmosphere. The other ends of the conduits are located in water below the surface near the source and are positioned to be within the bubble formed upon the generation of the seismic disturbance. Valves are provided for normally closing the lower ends to maintain the conduits substantially free of water. The valves open when encompassed by the bubble to reduce secondary pressure pulses.

3,371,741
GEOPHYSICAL EXPLORATION INSTRUMENT SUPPORT

Ronald L. Haxby, Tucson, Ariz.
(1421 Oxford Road, Maitland, Fla. 32751)

Filed Oct. 5, 1966, Ser. No. 584,529
7 Claims. (Cl. 181—.5)



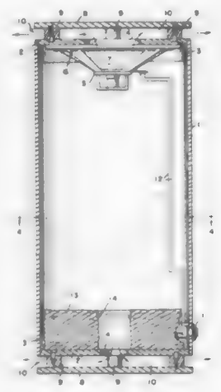
1. A positioning frame for supporting geophysical exploration instruments and the like in a bore hole comprising a mandrel adapted to be supported from above ground, a radially expansible anchor means carried by said mandrel, said anchor means including a plurality of articulated anchor arms, means pivotally securing one end of each articulated anchor arm to said mandrel, collar means carried by said mandrel for pivotally and slidably securing the other end of each of said arms to said mandrel whereby longitudinal sliding movement of said collar means along said mandrel radially expands and contracts said anchor means into and out of stabilizing contact with the bore hole wall, and anchor arm actuating means slidably carried by said mandrel and adapted to be operated from above ground to selectively expand or contract said radially expansible anchor means.

3,371,742
SPEAKER ENCLOSURE

Desmond H. Norton, 1122 Patterson St., Ogden, Utah 84403, and Martin A. Hardin, 1790 South 50th West, Bountiful, Utah 84010

Filed Oct. 21, 1965, Ser. No. 499,449
5 Claims. (Cl. 181—31)

1. An acoustical enclosure for a loudspeaker comprising an elongated hollow body portion, a first sounding wall closing one end of said hollow body portion, a loudspeaker having an outwardly flaring speaker cone supported by said first sounding wall interior of said hollow body portion in registration with a central aperture in said first sounding wall, which aperture is smaller than the diameter of the speaker cone of said loudspeaker, wherein said sound waves are directed outwardly through said central aperture, a second sounding wall closing the opposite end of said hollow body portion and having a central aperture, smaller than said aperture in said first sounding wall, axially aligned with said loudspeaker and the central aperture in said first sounding wall to direct sound waves from the back of the speaker cone outwardly of said hollow body portion, and a pair of baffle members respectively connected in outwardly spaced relation with

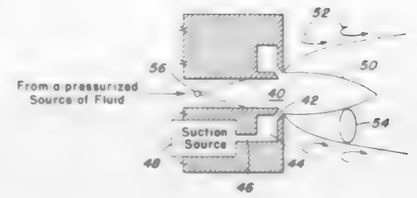


said first and second sounding walls at opposite ends of said hollow body portion, whereby said apertured first and second sounding walls and baffle members acting in combination with said loudspeaker are adapted to produce omnidirectional sound propagating patterns from opposite ends of said hollow body portion in planes substantially normal to the axis of said hollow body portion.

3,371,743
JET EXHAUST SILENCING NOZZLE WITH SUCTION APPLIED AT EXIT WALL

Robert Charles Chanaud, Somerville, and Gunnar Heskestad, East Brunswick, N.J., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 29, 1965, Ser. No. 451,714
5 Claims. (Cl. 181—35)



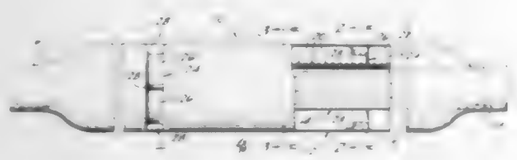
This invention relates to a relatively simple and inexpensive arrangement for reducing noise which arises from the expulsion of a high velocity jet of fluid from the nozzle of an aircraft. This is accomplished by applying suction to a narrow slot at the periphery of the nozzle at the very point at which the high velocity jet emerges from the nozzle of the jet engine and enters the free space immediately outside the jet engine. By employing a narrow annular slot making a substantial angle with respect to the direction of the jet expulsion path, there will be a spreading of the jet upon emergence from the nozzle, a rapid reduction in the jet velocity at the exit, an appreciable increase in the size of the eddies, a large reduction in the eddy velocity and a large and significant

reduction in the sound power produced beyond the nozzle exit.

3,371,744
MUFFLER WITH SEMI-CHAMBERS FORMED BY REDUCED SHELL PORTIONS

Eldred G. Straw, Grass Lake, Mich., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware

Filed Mar. 5, 1965, Ser. No. 437,428
2 Claims. (Cl. 181—61)

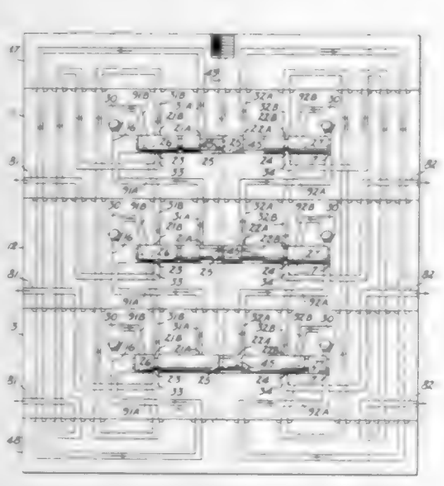


A muffler shell is strengthened and made effective as a silencing device by pinching sections together to form a sereis of inwardly extending embossments.

3,371,745
UNIDIRECTIONAL-FLOW LUBRICATING MEANS

James J. Callahan, Mentor, and Robert A. Shivak, Parma, Ohio, assignors to Trabon Engineering Corporation, Solon, Ohio, a corporation of Ohio

Filed Mar. 11, 1964, Ser. No. 350,981
22 Claims. (Cl. 184—7)

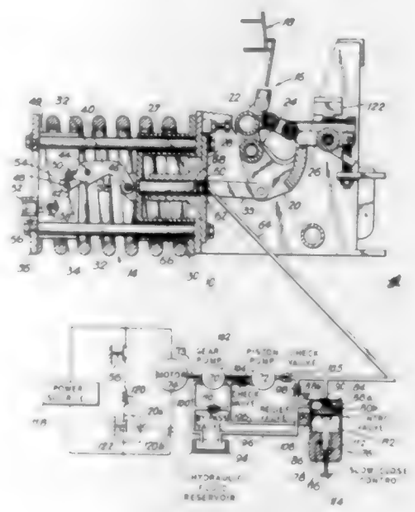


1. In a single-line series or sequential type lubricant distributor for a lubrication system that supplies lubricant from a supply source to several stations and proportions the supplied lubricant between the several stations, the system having lubricant branch lines that communicate between the distributor and the stations to be lubricated, and wherein interconnections between valve means of each valve-and-plunger unit of the distributor and piston chambers of another valve-and-plunger unit of the distributor are accomplished through conduit means leading from unit to unit, said interconnections being for cyclical sequential operation of said units of the distributor and discharge of measures of lubricant to the branch lines, the improvement wherein, at least as to the longest of all of said unit-to-unit interconnecting conduit means of the distributor, in one unit said conduit means are wholly constituted by unidirectional-flow conduits and in another unit are at least partly constituted by unidirectional-flow conduits forming continuations of the first-mentioned unidirectional flow conduits.

3,371,746
ENERGY STORAGE MECHANISM FOR ACTUATING CIRCUIT BREAKERS AND THE LIKE

Edward I. Engel, Matawan, N.J., assignor to Federal Pacific Electric Company, a corporation of Delaware

Filed July 26, 1966, Ser. No. 567,960
6 Claims. (Cl. 185—37)

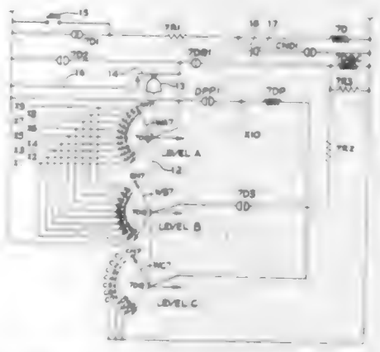


1. A stored energy mechanism for operating a circuit breaker including spring means for storing the operating energy, said spring means defining a given volume in the discharged position thereof, means for transmitting to said spring the energy to be stored in said spring in response to externally generated forces, means for releasably restraining said spring means in the charged position thereof, and means for releasing the restraining means, said energy transmitting means, said releasable restraining means, and said releasing means being mounted within said given volume of said spring means, and means operatively connecting said spring means to the circuit breaker for the operation thereof.

3,371,747
PRIORITY CALL CONTROL FOR AN ELEVATOR SYSTEM

John A. Gingrich and Gordon A. Holland, Toronto, Ontario, Canada, assignors, by mesne assignments, to Dover Corporation, New York, N.Y.

Filed June 12, 1964, Ser. No. 374,608
7 Claims. (Cl. 187—29)

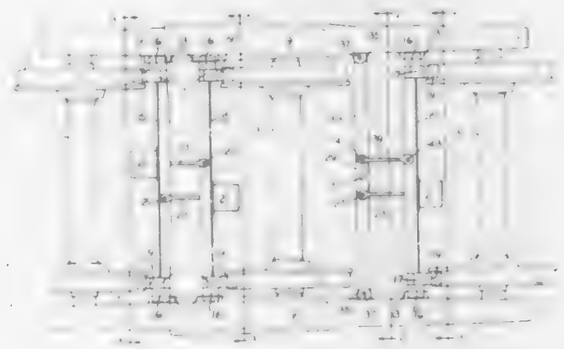


An elevator dispatching and control system in which a predetermined number of calls are selected as priority calls and cars are assigned on a rotational basis to these priority calls. The assigned cars stop and reverse direction at the selected priority calls and the priority of all calls with lower priority than an answered call is advanced when the answered call is cancelled.

3,371,748
BRAKE FOR SIX-WHEEL TRUCKS

James B. Cunningham, Northwoods, and Richard L. Lich, Pasadena Hills, Mo., assignors to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware

Filed July 5, 1966, Ser. No. 562,833
9 Claims. (Cl. 188—47)

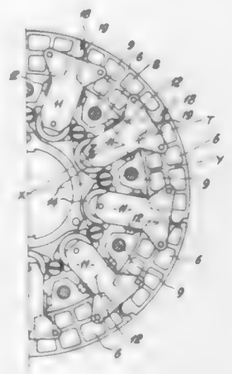


Single-shoe brake apparatus of the beam-mounted cylinder type for six-wheel railway trucks in which the end axle brake shoes are mounted on brake beams inboard of the end axles and a single pair of brake shoes for individual engagement each with one of the middle axle wheels is mounted on structure comprising a pair of beams, one of which is positioned on each side of the middle axle. In one form of the invention both of the middle axle shoes are mounted on one of the middle axle beams and the other middle axle beam is entirely unshod and is fixed at both ends to the truck side frames. In the other disclosed embodiment, each of the middle axle beams has a shoe at one end only, and the other unshod end of each middle axle beam is pivoted to the side frame.

3,371,749
SEGMENTED DISC BRAKE

Rene Lucien, Neuilly-sur-Seine, and Jean Masclet, Paris, France, assignors to Recherches Etudes Production R.E.P., Paris, France

Filed Apr. 20, 1966, Ser. No. 545,216
10 Claims. (Cl. 188—71)

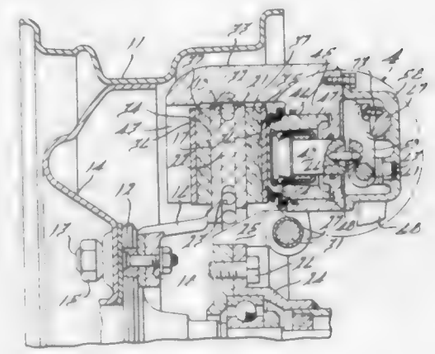


A disc brake having a first rotating unit including at least one braking disc, a second non-rotating unit having a plurality of small individual shoes mechanically independent of each other, each shoe carrying a friction lining which is intimately associated with it without any thermal discontinuity, and a third supporting unit coupling the second unit to the wheel axle thermally distant from the second unit and including actuating means for the shoes.

3,371,750
DISK BRAKE WITH AUTOMATICALLY ADJUSTED MECHANICAL ACTUATOR

Daniel A. Schutte, Carl A. Nafz, and John W. Carlisle, Springfield, Ohio, assignors to Kelsey-Hayes Company, a corporation of Delaware

Filed Aug. 22, 1966, Ser. No. 574,504
5 Claims. (Cl. 188—73)

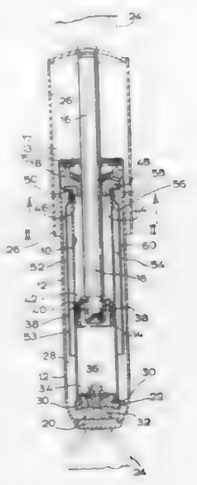


A brake disk is straddled by the legs of a caliper which is pivotally mounted to shift laterally thereof. Brake pads on each side of the disk are moved thereagainst with light pressure when a piston and cylinder in one leg of the caliper engages one of the pads and moves it toward the disk. A plunger in the piston has locking means which limit the retraction of the cylinder and caliper to take up wear on the pads. The plunger is operated manually by a device supported on the pivoted caliper.

3,371,751
TELESCOPIC HYDRAULIC SHOCK ABSORBERS

Ronald Sidney Dickinson, Osbaldwick, York, England, assignor to Armstrong Patents Co. Limited, London, England, a British company.

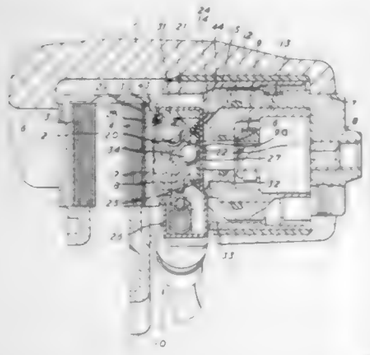
Filed Oct. 19, 1965, Ser. No. 497,923
Claims priority, application Great Britain, Oct. 20, 1964, 42,641/64
3 Claims. (Cl. 188—88)



This invention concerns a tubular hydraulic shock absorber for use in automobiles and employs a valved piston displaceable in an inner hydraulic pressure cylinder closed at each end by means including one-way valve means so arranged that hydraulic fluid is always moved in the same direction through the pressure cylinder irrespective of the direction of piston displacement. The pressure

cylinder is surrounded by a coaxially arranged outer cylinder which co-operates with the pressure cylinder to define an annular space acting as a reservoir for hydraulic fluid and from the end of the pressure cylinder at which hydraulic fluid is discharged into the reservoir there extends into the reservoir space, a cylindrical shroud arranged in close-spaced relation to the outer cylinder to inhibit foaming in the fluid by confining it to a long and narrow flow path. The manufacture of the shock absorber is simplified by making all the valve means in the form of diaphragm valves and the damping characteristics of the shock absorber are determined by pretensioning the diaphragm of at least one of the valve means.

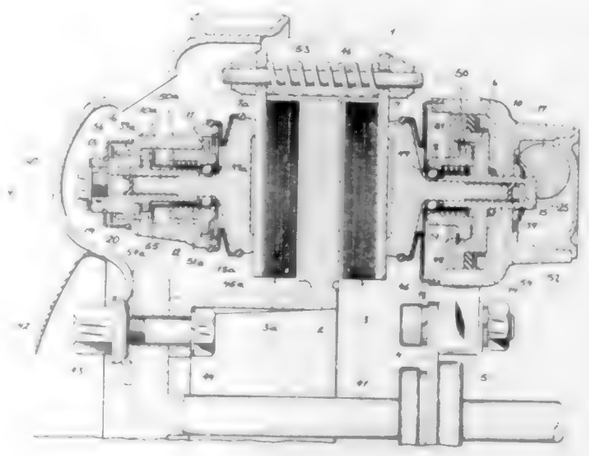
3,371,752
CAPSULED ACTUATOR FOR DISC BRAKES
Juan Belart, Walldorf, Fritz Ostwald, Buchschlag, and Karl Schlör, Biebesheim, Germany, assignors to Dunlop Rubber Company Limited, Erdington, England, a corporation of Great Britain
Filed Mar. 1, 1965, Ser. No. 435,919
8 Claims. (Cl. 188—106)



1. An operating mechanism for a disc brake having a hydraulic actuator, and comprising an expander device disposed between said hydraulic actuator and the disc portion of said disc brake to provide a thrust connection therebetween, means forming a sealed capsule which surrounds said expander device and which can be inserted in and removed from the associated brake structure as a unit, said capsule having opposite end walls which are relatively axially movable to provide expansion of said expander device to effect brake operation independently of said hydraulic actuator.

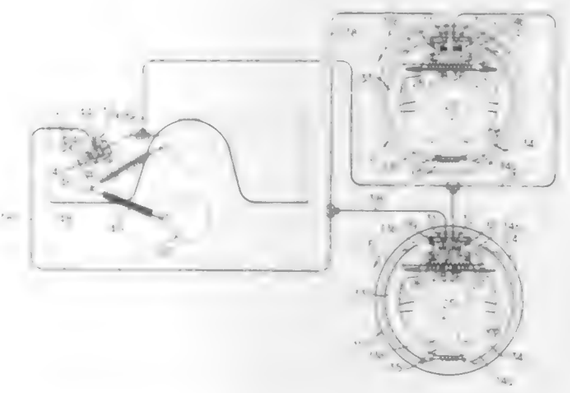
3,371,753
HYDRAULIC QUICK-SLACK-TAKE-UP PULSATOR FOR DISK BRAKES
Ernst Meier, Frankfurt am Main-Sindlingen, Germany, assignor to Alfred Teves, Frankfurt am Main, Germany, a corporation of Germany
Filed Aug. 15, 1966, Ser. No. 601,501
Claims priority, application Germany, Aug. 14, 1965, T 29,212
14 Claims. (Cl. 188—152)

1. In a hydraulic disk brake, in combination, a disk rotatable about its axis and coupled with a mass to be decelerated; support means adjacent said disk; a housing on said support means froming at least one fluid chamber; first and second brake shoes on said support bracketing a peripheral zone of said disk, at least said first brake shoe being movable with reference to said support means; a cylinder carried by said support means; a main piston with a relatively large working face in said cylinder; an auxiliary piston with a relatively small working face in said chamber and with a contact surface adjacent said first brake shoe for driving same into engagement with said disk; unidirectionally effective coupling means between said pistons; and fluid-source means connectable with said chamber and said cylinder for substantially concurrently applying a hydraulic liquid under pressure to both said working faces for operatively displacing said secondary piston toward said disk and said main



piston in a direction transmitting an aiding hydraulic pressure to said secondary piston through said coupling means, said coupling means enabling limited relative reverse motion of said pistons for facilitating separation of said first brake shoe from said disk by a withdrawal of said contact surface upon release of fluid pressure in said cylinder and said chamber.

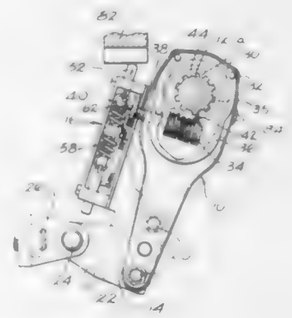
3,371,754
LOAD RESPONSIVE BRAKE SYSTEM
Pierre André Georges Lepelletier, Chatou, France, assignor to Societe Anonyme Francaise du Ferodo, a corporation of France
Filed Dec. 27, 1965, Ser. No. 516,576
Claims priority, application France, Jan. 11, 1965, 1,440
6 Claims. (Cl. 188—195)



A hydraulic brake for an automotive vehicle has a pair of brake shoes swingable in opposite directions under the influence of separate pistons and pressure chambers, so that the upstream end of one shoe (relative to the direction of rotation of the member to be braked) comes into firmer engagement with the rotatable member than its downstream end, while the downstream end of the other shoe comes into firmer engagement with the member to be braked than does its upstream end. A pressure

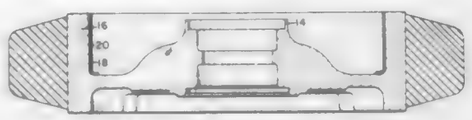
limiter is placed in the hydraulic supply to the first-mentioned shoe, but not in the supply to the second mentioned shoe, because the first-mentioned shoe is the one that tends to cause the brake to lock, particularly under light load. The pressure limiter is made load responsive by a special spring arrangement.

3,371,755
BRAKE ADJUSTER
James W. Leeper, Philadelphia, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 21, 1966, Ser. No. 559,244
3 Claims. (Cl. 188—196)



An automatic brake adjuster for cam operated vehicle brakes actuated by a lever arm. A spring biased bar is slideable on a housing attached to the arm, and brake lining wear is sensed by the bar by engagement with an abutment on the vehicle axle. The slide bar carries a spring biased pawl which actuates a ratchet wheel to change the relative position of the cam shaft upon release of the brakes.

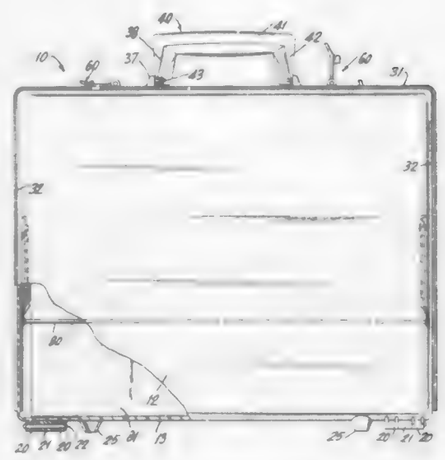
3,371,756
HEAT DISSIPATING BRAKE
Albert W. Spitz, 835 Glenside Ave., Wyncote, Pa. 19095
Filed Jan. 18, 1966, Ser. No. 536,241
2 Claims. (Cl. 188—251)



A heat dissipating brake including an aluminum or aluminum alloy rim, said rim having a brake drum formed therein, and said brake drum being hard anodized to provide a finished brake drum coating of thickness between 0.002 inch and 0.005 inch.

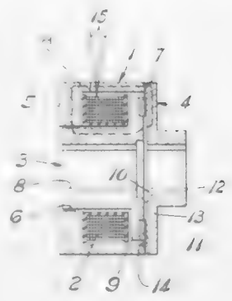
3,371,757
ATTACHE CASES AND THE LIKE CONTAINERS
Harry Jamison, Beechhurst, and Ralph M. Verni, Baldwin, N.Y., assignors to The Jamison Plastic Corporation, North Bellmore, N.Y., a corporation of New York
Filed June 28, 1966, Ser. No. 561,276
11 Claims. (Cl. 190—49)

1. A case comprising a pair of case sections, each having an outer wall, top and bottom walls extending therefrom, and end walls extending from said outer wall and connecting said top and bottom walls, hinge sleeves integrally formed with said bottom walls, the hinge sleeves of one case section registering with and being coaxial with hinge sleeves of the other case section, the axis of said sleeves being disposed below said bottom walls and in a vertical plane passing between said sections when the case is closed, hinge pins passing through said registering sleeves, a bezel having a top portion and downwardly extending side arm portions and formed with grooves on opposite sides, the end edges of the top and end walls of one case section being received in the groove of one side



of the bezel and fixed thereto throughout the length of the bezel, and the end edges of the top and end walls of the other case section being adapted to snugly fit into the groove on the opposite side of said bezel when the case sections are closed, said case sections being capable of being molded from a common mold, and said bezel being symmetrical about a vertical plane passing through its longitudinal midsection.

3,371,758
MAGNETICALLY OPERATED FRICTION CLUTCH
Don E. Stuhlmiller, Kenmore, N.Y., assignor to General-Electro Mechanical Corporation, Buffalo, N.Y.
Filed Mar. 14, 1966, Ser. No. 537,038
2 Claims. (Cl. 192—84)



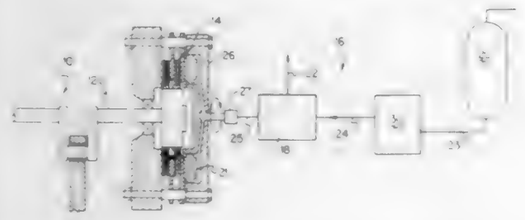
A magnetic clutch having a hollow cylindrical casing with an annular wall at one end thereof defining a recess for a magnetic winding. A rotatably driven member of magnetic material passes through the annular wall and together with the casing forms a U-shaped flux path for the winding. A driven member has a flat radial face in close juxtaposition to the end of the casing opposite to the annular wall and to adjacent end of the driving member, and the adjacent end of the driving member has an outward annular flange carrying friction material for clutching engagement with the face of the driven member when the latter is attracted electromagnetically.

3,371,759
CLUTCH CONTROL FOR MECHANICAL DEVICES

Roger Sapolsky, Saint-Gratien, France, assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Continuation-in-part of application Ser. No. 467,288, June 28, 1965. This application Feb. 7, 1967, Ser. No. 629,044

11 Claims. (Cl. 192—85)



This disclosure concerns a torque control mechanism for a fluid operable clutch such as may be found in a crank-driven press, which mechanism includes a valve to selectively connect the clutch to a source of fluid pressure or to a fluid pressure escapement and in series between the valve and pressure source, a pressure modulating valve retarding build-up of pressure in the clutch at the start causing gradual clutch engagement and thereafter responsive to a predetermined back pressure to permit a rapid rise of pressure in the clutch to prevailing line pressure and full engagement torque.

3,371,760
COORDINATED MECHANISM

Jasper Willsea, 430 Lake Road, Webster, N.Y. 14580; Norma Julia Willsea, executrix of said Jasper Willsea, deceased

Original application July 15, 1963, Ser. No. 294,862. Divided and this application Oct. 21, 1966, Ser. No. 591,943

5 Claims. (Cl. 192—142)

A coordinated mechanism that is controlled numerically and is entirely electrical. The extent of a movement or a dwell is controlled by counting precise displacement units. Pulses representing the units are counted. When the counted units are equal to the preset number of the desired extent, the movement or dwell is switched off and another movement or dwell is switched on. Displacement units are transduced during a movement from a driven shaft, and during a dwell from a block shaft.

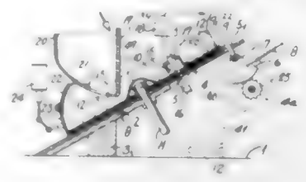
A programming by a sequence of preset count numbers in count-switches can be modified instantly by a resetting of the preset count number in the respective count-switch during an operation and without any mechanical adjustment. A preset count number in a count-switch can be reset from an external remote source.

3,371,761
APPARATUS FOR DISCRIMINATING HARD COINS

Ryo Hirano, 849 Tsu, Kanagawa, Kamakura, Japan

Filed May 4, 1966, Ser. No. 547,540

1 Claim. (Cl. 194—16)



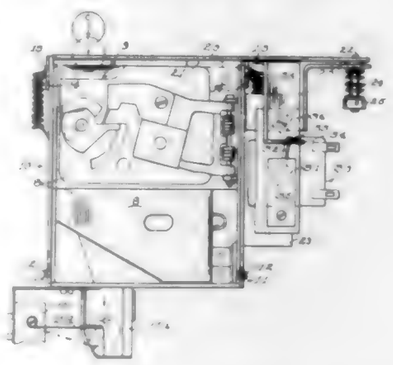
A T-shaped lever for mechanically amplifying a slight difference in the diameters of different sized coins is used to discriminate continuously and at high speed between a large number of coins. Phototransistors are used in the same number as the kinds of coins to be discriminated and corresponding apertures are formed in the lever. Only when one of these apertures conforms with a light transmitting aperture in a fixed plate and light sensing aperture in a rotatable plate is one of these phototransistors energized and which corresponds to the coin being discriminated.

3,371,762
COIN CHUTE WIRE LOCKOUT AND CONTROL

Joseph L. Isaacson, New Orleans, La., assignor, by mesne assignments, to Lion Manufacturing Corporation, Chicago, Ill., a corporation of Illinois

Filed Sept. 17, 1965, Ser. No. 488,084

8 Claims. (Cl. 194—97)



A blocking lever is pivoted on a cradle to move across the entrance to the coin chute seated therein to block the same and bend to one side any wire or like probe or tether on a captive coin responsive to action of an electromagnet responsive to any operation of the coin switch located further along the chute passage. Supplement to the subject: the blocking lever is both pivotable and axially shiftable and is mounted on the cradle by which the coin testing chute is removably supported; and the blocking lever can be shifted axially against spring tension out of the way of the chute for removal thereof from the cradle and for uncoupling with the electromagnetic means.

3,371,763
COIN CHUTE ANTITHEFT DEVICE

Mitchell Adam Hall, 445 Rossford Ave., Fort Thomas, Ky. 41075

Filed Feb. 9, 1967, Ser. No. 614,866

17 Claims. (Cl. 194—97)

The coin chute includes simple means for gradually reducing clearances between a coin slide and its supporting passageway, to bind and immobilize any shim employed in an attempt to obtain fraudulent free play or illegitimate dispensation of goods or services from a dispensing machine controlled by the coin chute. Extreme clearance reduction occurs only momentarily, so that the slide normally moves freely through the major portion

of its stroke, even in the presence of accumulated dirt, gum and other foreign materials. Insertion of a shim and concurrent advancement of the slide immobilizes the shim against maneuverability.

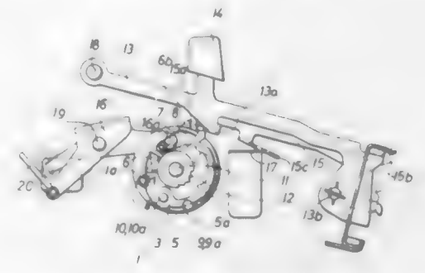
3,371,764
POWER ROLL COUPLING CAM

Manfred Aden, Sande, and Kurt Chvatlinsky, Wilhelmshaven, Germany, assignors to Olympia Werke A.G., Wilhelmshaven, Germany

Filed Oct. 3, 1966, Ser. No. 583,705

Claims priority, application Germany, Oct. 2, 1965, O 8,420

8 Claims. (Cl. 197—17)



A coupling for connecting the toothed power roll of a typewriter with a movable element for actuating the same as an integral body consisting of a synthetic plastic material and having on one side a cam portion for operating a movable element of the typewriter, and on both sides integral journals for pivotally supporting coupling means cooperating with the teeth of the power roll so that noise produced by the impact of the teeth of the power roll on the coupling means is produced by the plastic synthetic material of the integral body.

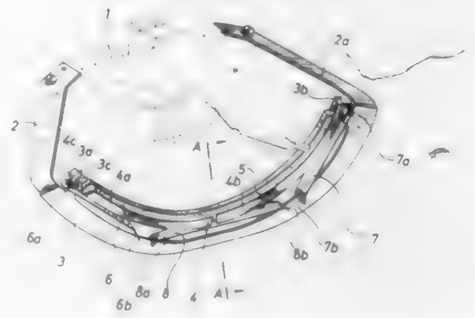
3,371,765
TYPE BAR REST HAVING PLURAL PARTS RESILIENTLY AND INDEPENDENTLY SUPPORTED

Kurt Chvatlinsky and Wolfgang Bonleitner, Wilhelmshaven, Germany, assignors to Olympia Werke A.G., Wilhelmshaven, Germany

Filed Jan. 30, 1967, Ser. No. 612,552

Claims priority, application Germany, Feb. 4, 1966, O 8,595

10 Claims. (Cl. 197—42)



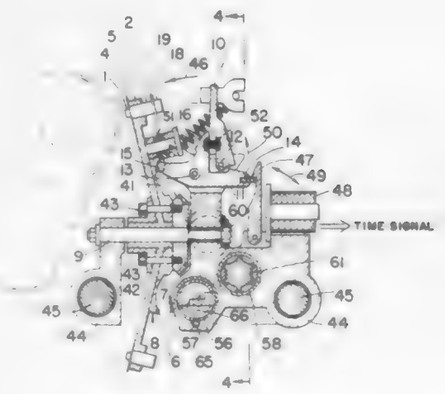
The back rest of the type bars of a typewriter is formed of two arcuate parts flexibly connected by an arcuate damping member and supported by leaf springs sliding on the same and on supporting means which have projections located in cutouts in the outer ends of the arcuate parts and of two outer leaf springs.

3,371,766
PRINTING APPARATUS

Karel J. Staller, Rutherford, N.J., assignor to International Telephone & Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed July 18, 1966, Ser. No. 565,933

10 Claims. (Cl. 197—53)



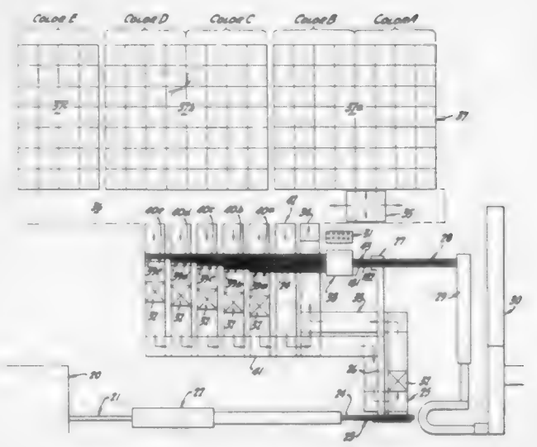
A serial printer having a continuous motion carriage and letter carrier, the letter carrier being in the form of a spinning disc which permits the printing of any character on its circumference. The character is struck by a hammer which is released by an electromagnet.

3,371,767
COLOR SELECTOR MECHANISM AND METHOD

Henry W. Rehr, Concord, Lawrence E. Weinert, Antioch, and James B. Cole, Mercer Island, Calif., assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed July 1, 1966, Ser. No. 562,204

32 Claims. (Cl. 198—30)



Mechanism for and method of selecting predetermined numbers of facial tissue cartons respectively containing tissue of one of a plurality of colors from a greater plurality of cartons of each such color so that mixed-lot

cases comprising cartons of each such color can be packaged. The mechanism includes a plurality of parallel tracks, one for each color, along which the cartons of tissue are advanced. Rails defining each such track are periodically opened to permit cartons supported thereon to pass downwardly therebetween. However, retainers located along each track are operative to prevent certain of the cartons advanced therealong from passing downwardly between the open rails. Accordingly, a lesser number of cartons of each such color are selected from the greater plurality thereof for assembly and packaging into a mixed-lot case. The method involves the steps of advancing cartons of each such color into a selection station, displacing such lesser number of cartons of each color from the selection station and assembling the displaced cartons for packaging thereof in such mixed-lot cases.

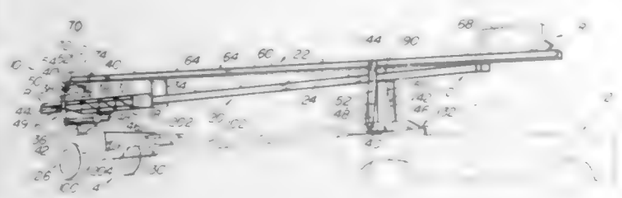
3,371,768

CONVEYOR CONSTRUCTION

Robert F. Oury, Wayne, and John F. Oury, deceased, late of Wheaton, Ill., by Alice M. Oury, executor, Wheaton, Ill., assignors to Oury Engineering Company, Elmhurst, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 575,503 Aug. 25, 1966. This application Oct. 17, 1966, Ser. No. 587,344

12 Claims. (Cl. 198—92)



A mobile trailer assembly adapted to support a feeding conveyor and distributing conveyor features a frame mounting yoke mounted at one end of the trailer assembly and adapted for rotational movement about a vertical axis. A support frame assembly is mounted in cantilever fashion adjacent one of its ends on the frame mounting yoke and is adapted for movement about a horizontal axis. The distributing conveyor is mounted on rollers carried by the frame mounting means for controlled longitudinal movement such that concrete mix and the like may be discharged from the distributing conveyor without supporting the discharge end thereof. During the distributing mode of operation, one end of the feeding conveyor is pivotally mounted above the distributing conveyor, and the opposite end is supported by upstanding brackets located on the trailer assembly. During the transport mode of operation, both the feeding and distributing conveyors are supported by the upstanding brackets.

3,371,769

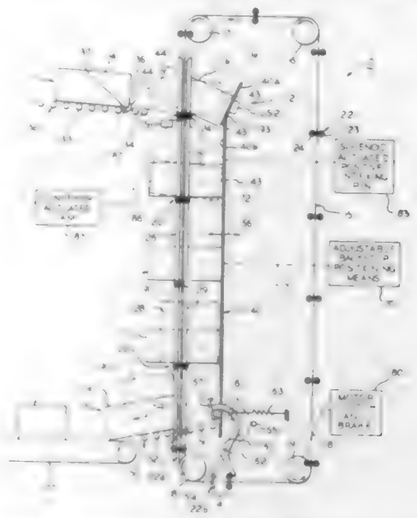
ELEVATOR CONVEYOR

Robert L. Beninger, Sheboygan, Wis., assignor to H. G. Weber and Company, Inc., Kiel, Wis., a corporation of Wisconsin

Filed Oct. 27, 1965, Ser. No. 505,323

15 Claims. (Cl. 198—154)

An elevator conveyor for receiving articles at one level and discharging the articles at another level. The elevator conveyor includes a series of article supports secured to the conveyor and movable therewith, and a backstop positioned relative to the article supports to form together



with the article support means for balancing the article on the support en route from one level to another level.

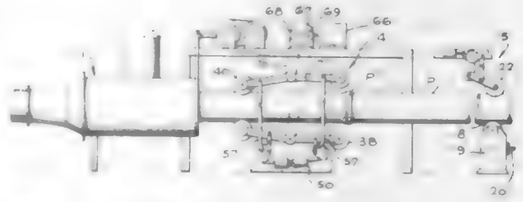
3,371,770

APPARATUS FOR MOVING PIPE THROUGH A COATING MACHINE

Gordon C. Graham, Glendora, and Constantinos E. Zervos, Los Angeles, Calif., assignors to American Pipe and Construction Co., Monterey Park, Calif., a corporation of California

Filed Oct. 25, 1966, Ser. No. 589,453

10 Claims. (Cl. 198—167)



The application discloses sets of retractable power-driven rollers for supporting and advancing a pipe through coating apparatus and means for selectively retracting the rollers of the sets of rollers to pass enlarged sections of the pipe while holding the pipe and continuing to advance it with the remaining sets of rollers.

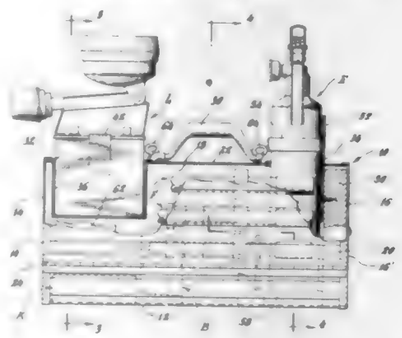
3,371,771

EMERGENCY SAFETY KIT

Edward T. Bugyi, 190 Knollwood Drive, Stratford, Conn. 06497

Filed June 29, 1966, Ser. No. 561,604

7 Claims. (Cl. 206—16)



An emergency kit of generally rectangular cross section having a hinged front with the hinge displaced upwardly from the bottom edge to form a tray when the kit is open. A receptacle is built into the top of the kit to receive an article, such as a lantern. An opening in the case receives a fire extinguisher which is secured by a bracket and strap.

3,371,772

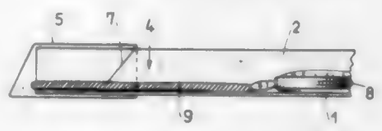
PACKAGE FOR THE TRANSPORT AND DISPLAY OF AT LEAST ONE WRISTWATCH

Marcel Fontannaz, Echandens, Switzerland, assignor to Cartolux S.A., Echandens, Vaud, Switzerland, a corporation of Switzerland

Filed Mar. 14, 1967, Ser. No. 623,120

Claims priority, application Switzerland, Mar. 14, 1966, 3,740/66; Oct. 14, 1966, 15,079/66, 15,080/66; Jan. 13, 1967, 742/67; Feb. 7, 1967, 1,959/67

17 Claims. (Cl. 206—45.14)



A package for a wristwatch in which the watch is supported in a channel of an elongated element and the strap segments of the watch are held in place by depending wall portions of cap elements which are supported by the elongated element at the ends thereof. The assembly of the elongated element and the cap elements is replaceably covered by a cover element.

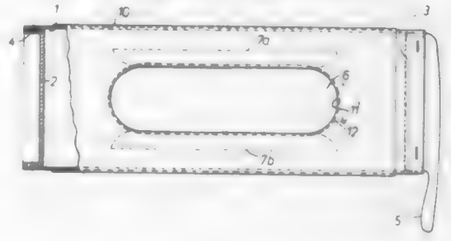
3,371,773

CONTAINERS

Carl Hermann Flisch, Aeuli, Maienfeld, Graubunden, Switzerland

Filed Aug. 17, 1966, Ser. No. 573,069

9 Claims. (Cl. 206—45.31)



A container having an inner shell mounted in a rotatable outer jacket, the shell and jacket having openings in the sides thereof which can be placed in registry for loading and unloading storable material in the inner shell.

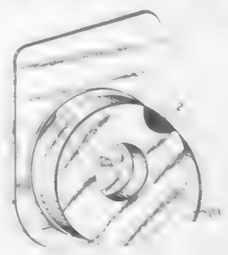
3,371,774

CORELESS ROLL DISPENSER

Martin J. Lilly, Neptune, N.J., assignor to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 19, 1966, Ser. No. 587,749

1 Claim. (Cl. 206—52)



This invention relates to a dispenser for a coreless cylindrical roll of material which has a coreless cylindrical region and preferably comprises decorative ribbon-like material. A planar backing member serves as a support or base for a cylindrical, preferably transparent, encasing blister affixed to the backing member and adapted to contain the coreless roll. The encasing blister comprises a cylindrical hub which extends part-way in the hole, and which hub is closed generally across said region to define a closed space between the hub means and the backing member. An elongated resilient strip is disposed within the coreless region to bear outwardly against the roll, which not only facilitates to serve in dispensing the ribbon therefrom but also maintains a tight roll for neat appearance. A circumferential tab is provided for opening the blister whereat the roll may be dispensed beginning with the outer-most layer.

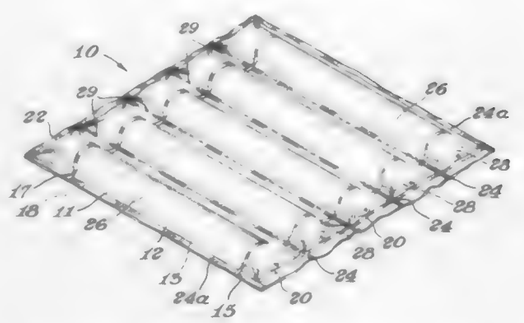
3,371,775

PACKAGE FOR ELONGATE OBJECTS AND METHOD OF PACKAGING ELONGATE OBJECTS

Russell L. Butler, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Aug. 2, 1965, Ser. No. 476,486

13 Claims. (Cl. 206—56)



An improved cigar package is prepared from a three layer film having polyethylene on the outer surfaces and a central layer of Saran. Cigars are hermetically sealed in individual packets.

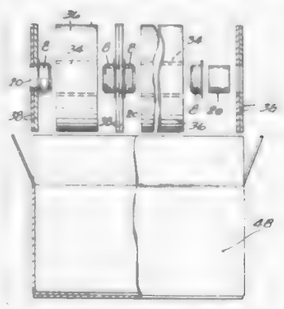
3,371,776

DOUBLE PLUG FOR ROLL-SUPPORTING CORES

Marvin C. Voissem, Appleton, Wis., assignor to Badger Plug Company, Appleton, Wis., a corporation of Wisconsin

Filed Apr. 27, 1967, Ser. No. 634,206

12 Claims. (Cl. 206—65)



A pair of plugs very slightly tapered for wedging insertion into the aligned cores of paper rolls and the like are connected by telescopic engagement back to back upon a sleeve (usually but not necessarily of boxboard stock) which may be detachably engaged frictionally with both plugs or may be cemented in place (but preferably to not more than one of the plugs). The flanges on the two plugs may be in face contact or may be spaced by engagement with opposite faces of an intervening panel apertured to pass the sleeve which connects the two plugs,

such panel constituting a separator in a carton in which rolls mounted on the respective plugs are packed for shipment with their axes either vertical or horizontal.

3,371,777
MULTIPLE ARTICLE DISPLAY PACKAGE
Martin J. Lilly, Neptune, N.J., assignor to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 20, 1966, Ser. No. 588,128
1 Claim. (Cl. 206—78)

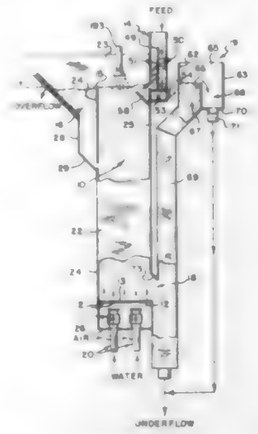
The present invention is a display package for displaying ornamental articles in original shape and comprises a backing member of cardboard or the like with an integral housing member for the articles supported therefrom. The housing has a peripheral flange for attachment to the backing member and then extends outwardly thereof to define a peripheral semi-wall for lending rigidity. A further wall extending in spaced apart relation to the backing member closes the housing with the semi-wall, the further wall comprising a plurality of individual spaced apart tapered oval compartments bulging away from the backing member and having arcuate reinforced ridges rising between the compartments longitudinally of the compartments and the backing member and transversely of the compartments and backing member. Access is had through the back of the backing member through the use of U-shaped lines of perforations connected together by a perforated line and having opposed tear-tabs for insertion of the fingers to open the back along the lines of perforations.

3,371,778
METHOD OF TREATING STARCHES FOR FLOTATION OF MINERALS
Iwao Iwasaki, Minneapolis, Minn., assignor to The Regents of the University of Minnesota, Minneapolis, Minn., a corporation of Minnesota
No Drawing. Filed Feb. 12, 1965, Ser. No. 432,395
11 Claims. (Cl. 209—3)

A method of concentrating finely divided oxidized iron ores in which the gangue material is principally siliceous by froth floation of the gangue away from the iron constituents based upon the discovery that good metallurgical results can be obtained with reduced amounts of starch depressant if the starch is gelationized and subjected to violent shearing action before addition to the ore pulp.

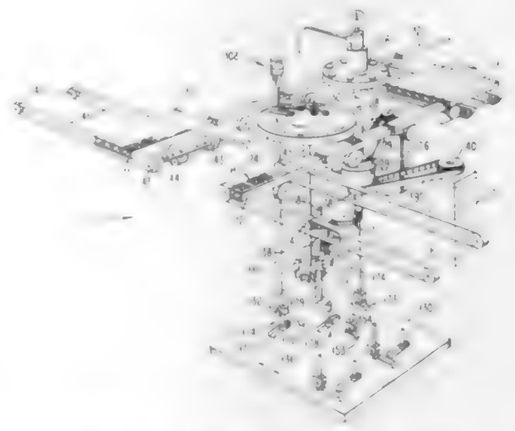
3,371,779
CONCENTRATION OF MINERALS
Clinton A. Hollingsworth, Lakeland, and Bobby L. Sapp, Plant City, Fla., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey
Filed June 24, 1965, Ser. No. 466,546
23 Claims. (Cl. 209—166)

The invention relates to the concentration and beneficiation of minerals and other particulate matter by froth flotation, more particularly to a novel hydraulic-pneumatic flotation apparatus and to a novel method of froth flotation by the dispersion of aerated water in a hydraulic



compartment and its uniform distribution through a constriction plate into a flotation chamber.

3,371,780
APPARATUS FOR MECHANICALLY AND ELECTRICALLY TESTING THE QUALITY OF BONDED JOINTS
Kendall Clark, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 25, 1966, Ser. No. 544,993
9 Claims. (Cl. 209—73)

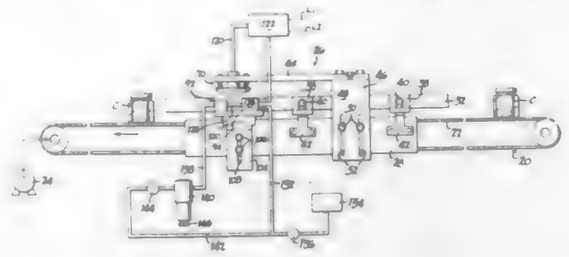


1. Apparatus for testing the joint bonding microminiature chip device to the surface of a substrate of a microminiature module comprising:
means for supporting said module;
means for subjecting the joint of a module in said support means to a blast of fluid medium; and
means for moving said blast means relative to the module to successively subject the joint to tensile, shear and compressional forces.

3,371,781
APPARATUS FOR INSPECTING SEALED CONTAINERS
George D. Armbruster and Walter J. Ringel, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Apr. 12, 1965, Ser. No. 447,248
4 Claims. (Cl. 209—111.8)

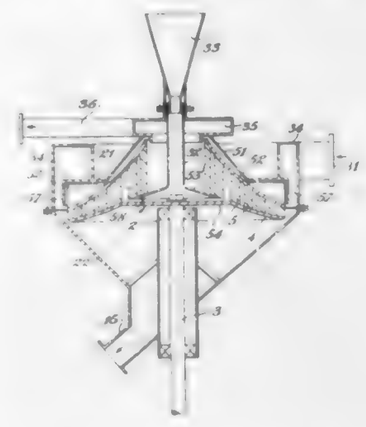
Apparatus for inspecting sealed containers at high production rates to determine whether or not an adequate vacuum exists within the container. A proximity sensor is

mounted to be accurately positioned with respect to a flip panel in the container cap, regardless of variations in con-



tainer height or cocking or tilting of the cap on the container.

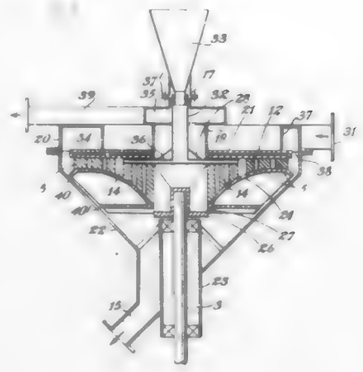
3,371,782
CENTRIFUGAL AIR CLASSIFIERS
Paul Meyer, 19 Paget Road, London, N. 16, England, and Geoffrey Daniel Humphreys, Woodbridge, Ash Road, Hartley, near Dartford, Kent, England
Filed Dec. 8, 1965, Ser. No. 512,308
Claims priority, application Great Britain, Dec. 11, 1964, 50,647/64; Sept. 8, 1965, 38,374/65
8 Claims. (Cl. 209—144)



1. A rotary air classifier including a casing provided with an inlet for material to be classified and a discharge outlet for classified particles, and a rotor mounted to revolve about a vertical axis within the casing, said rotor comprising a top plate and a bottom shroud plate, the classifying zone defined between said plates being subdivided by radial blades, said zone being open at its perimeter for admission of carrier fluid from the casing, means for introducing material to be classified into the rotor in a direction such that it is thrown by centrifugal force across the air stream in the classifying zone, the fluid and fines discharging through a central orifice in the rotor and the shroud plate being sloped downwardly and outwardly to permit gravity to assist in rejection of particles near "cut size" and not rejected by centrifugal force exceeding the drag exerted by the carrier fluid, means for supplying carrier fluid to the casing and means for imparting rotation to the rotor.

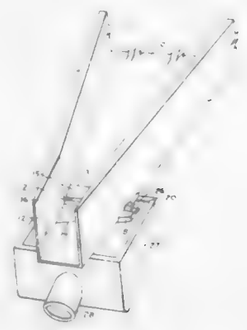
3,371,783
CENTRIFUGAL AIR CLASSIFIERS
Paul Meyer, 19 Paget Road, London, N. 16, England, and Geoffrey Daniel Humphreys, Woodbridge, Ash Road, Hartley, near Dartford, Kent, England
Filed Dec. 8, 1965, Ser. No. 512,309
Claims priority, application Great Britain, Dec. 11, 1964, 50,647/64
18 Claims. (Cl. 209—144)

1. A rotary air classifier including a casing provided with an inlet for material to be classified and a discharge outlet for classified particles, and a rotor mounted to revolve about a vertival axis within the casing, said rotor comprising a top plate and a bottom shroud plate, the classifying zone defined between said plates being subdivided by radial blades, said rotor having a central orifice for discharge of fluid and fines, said zone being open at its perimeter for admission of carrier fluid from the



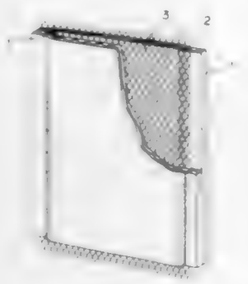
casing, said shroud plate being sloped downwardly and towards the centre to permit gravity to assist in rejection of particles of approximately "cut size" and not ejected by centrifugal force exceeding the drag exerted by the carrier fluid, said shroud plate having at least one central opening for ejection of the rejected particles, means for supplying carrier fluid to the casing and means for imparting rotation to the rotor.

3,371,784
APPARATUS FOR GRAVITY SEPARATION OF MATERIALS
Richard John Conway, Kingscliff, New South Wales, Australia, assignor to John A. Foyster, Olga M. Foyster, Clive J. Foyster, Lloyd Foyster and Mark Foyster, all of Kingscliff, New South Wales, Australia
Filed Oct. 21, 1966, Ser. No. 588,435
Claims priority, application Australia, Oct. 27, 1965, 65,834/65
5 Claims. (Cl. 209—458)



Gravity separation apparatus having a sluice unit with a base sloping downwardly from rear to front and wherein two outlet members are supported in an opening in the base to define a downwardly and rearwardly extending slot through which a lower stratum may pass, one of the outlet members being fixed, the other slidable along an inclined face of the base whereby the size of the slot can be varied.

3,371,785
METHOD OF DEHYDRATING SLUDGE
Yuiti Hanami, Tokyo, Japan, assignor to Kurita Industrial Co., Ltd., Osaka-shi, Japan, a corporation of Japan
Filed June 13, 1966, Ser. No. 556,946
Claims priority, application Japan, June 19, 1965, 40/36,447; Oct. 22, 1965, 40/64,853; Dec. 17, 1965, 40/77,927
4 Claims. (Cl. 210—65)



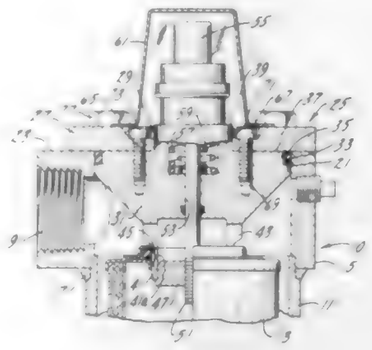
A method for rapidly dehydrating sludge by inserting into a layer of sludge containing fur or highly hygroscopic, colloidal solids formed during water-treatment procedures, a strip made of a liquid-pervious material having numerous fine passageways and spacer means, with one end of said strip protruding below the bottom of said sludge layer, or with both ends thereof protruding above and below the upper and lower surfaces of said sludge layer.

3,371,786
FILTER PRESS
James D. Fann, 3202 Argonne, Houston, Tex. 77006
Filed Feb. 1, 1965, Ser. No. 429,397
6 Claims. (Cl. 210—90)

The disclosure is of filtration apparatus having pressure differential generating systems wherein both the filtration driving pressure and the back pressure are controlled. The back pressure is always maintained lower than the filtration driving pressure, and the back pressure is controlled against becoming excessive, so that the filtrate receiver assembly is protected against being subjected to excessive pressures.

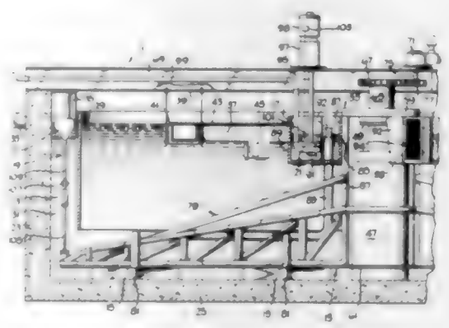
3,371,787
INDICATING BY-PASS ASSEMBLY
Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 1, 1965, Ser. No. 492,230
2 Claims. (Cl. 210—90)

A filter comprising a housing having an open end; a filter in the housing; a core in sealing engagement with said open end and a separate closure plate removably secured to the core and the open end. A by-pass valve is operatively



connected with the filter in the housing; an indicator means is associated with the core outside the housing and means operatively connecting the valve and the indicator means.

3,371,788
WASTE TREATING APPARATUS
Eugene J. Smith, Storms Road, Valley Cottage, N.Y. 10989
Filed June 29, 1965, Ser. No. 468,025
2 Claims. (Cl. 210—121)

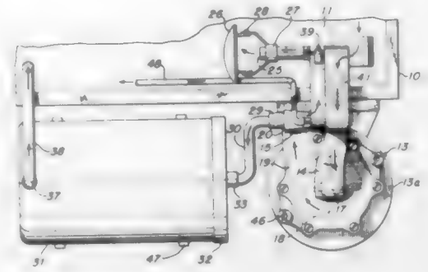


A waste treatment clarifier having a peripheral raceway inlet and a flat bottom. A sludge-sweeping arm is rotatively supported from a central pier with the arm carrying a plurality of V-shaped plows. A conduit extends from the apex of each plow to a basin located below the fluid level of the clarifier to conduct fluid and sludge from each plow to the basin. The flow through each conduit is adjustable. The fluid from the basin is pumped intermittently to a treatment means. A pivotal scum-skimmer is supported adjacent the end of the sludge-sweeping arm which skimmer rides in the raceway and moves scum to an outlet therein.

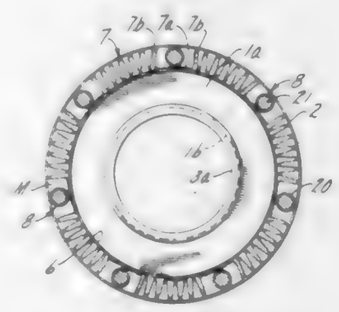
3,371,789
COMBINATION LIQUID FILTERING, HEATING AND AERATING DEVICE
Francis F. Hense, 1429 Wilmington Ave., Apt. 301, Dayton, Ohio 45420
Filed June 28, 1965, Ser. No. 467,671
9 Claims. (Cl. 210—169)

A combination filtering and aerating device for an aquatic life-supporting system featuring a pump, the intake conduit of which withdraws liquid from the reservoir and the discharge conduit simultaneously forces water

through a separate filter unit from which it returns to the reservoir and through an aerating device before discharging directly into the reservoir. Because of the pumping efficiency thus gained, all of the apparatus may be removed from the reservoir and heated, filtered and aerated water may be recirculated therein with the involvement of only three fluid passages in communication therewith.

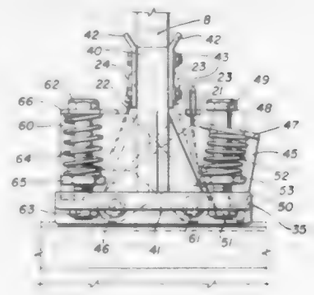


3,371,790
MAGNETIC FILTER
Walter J. Kudlaty, Elmhurst, Robert N. Luchetta, Bensenville, and Robert T. Sochor, Berwyn, Ill., assignors to Marvel Engineering Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 13, 1965, Ser. No. 425,207
4 Claims. (Cl. 210—223)



4. A filter comprising a pair of end caps, a hollow, perforated core formed of magnetically-attractable material and extending axially between said caps, a filter element formed of nonmagnetically-attractable mesh material and arranged in pleated valleys and ridges about said core and between said caps, the filter element material in the bottom portions of said valleys being in contact with said core, and a plurality of thin, pencil-like magnet members circumferentially spaced about and upon said filter element and in magnetically-attracted relationship with said core, said magnet members being positioned each in and on a bottom portion of one of said valleys, the valleys in which one of said magnet members is positioned having a greater width than that of adjacent valleys, said magnet members having a length less than the longitudinal extension of said filter element whereby said magnet members may be moved toward one of said end caps to expose one end of said magnet members from the other of said end caps, each said magnet member comprising an elongated hollow tube, a plurality of individual cylindrical magnets within said tube, the opposite ends of said tube being closed to retain said individual magnets therein, said individual magnets having their polarities in magnetically opposing relationship whereby the area of magnetism produced thereby is expanded, the poles of said individual magnets within each of said tubes being circumferentially aligned with the poles of individual magnets within adjacent tubes and being opposite.

3,371,791
SCRAPER FOR ROTARY, MULTIPLE DISC FILTERS
Floyd D. Schryver, Arvada, Colo., assignor to Denver Equipment Company, Denver, Colo., a corporation of Colorado
Filed July 13, 1964, Ser. No. 382,194
10 Claims. (Cl. 210—327)

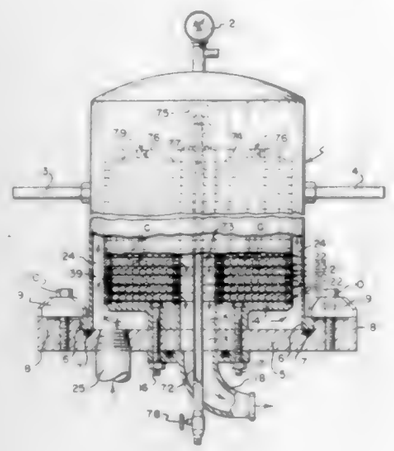


10. A scraper assembly for disc filters wherein a scraper blade is mounted on each side of a disc for removal of cake from said disc, comprising pivotal supports mounted on both sides of a filter disc, each said support being resiliently mounted at its inner end for limited movement, a blade secured to each said support, an outer blade support including a reciprocal support member having a base portion disposed on a support surface of the filter adjacent the outer peripheral edge of said disc and an upright portion disposed between the ends of the base portion, guide means mounted on said upright portion and on both sides of said disc so as to maintain said support centered on said disc, said blade support including a lever arm secured to the outer end of each said blade, said lever arm having a lateral surface portion and a portion extending downwardly and inwardly from its associated blade toward the disc and being pivotally secured to said base portion at its lower end below the removal point of the cake from the disc by the blade and a spring mounted between each said lateral portion of each of said lever arm and said base portion so as to independently bias said blade under spring pressure directed toward said disc, the lever arms being crossed at their lower ends and each lever arm being pivoted at a point below the removal point of the cake from the disc on the opposite side of the disc and spaced substantially therefrom.

3,371,792
MULTIPLE FILTER PLATE UNITS
John E. Weyand and John H. Bush, Needham, and Per L. F. Feyling, Belmont, Mass., assignors to Millipore Filter Corporation, Bedford, Mass., a corporation of Massachusetts
Filed Mar. 21, 1966, Ser. No. 535,945
8 Claims. (Cl. 210—335)

A filter plate unit including an inlet filter plate, an outlet filter plate, two intermediate filter plates arranged in stacked relationship with one of the intermediate plates

positioned between the inlet plate and the outlet plate and the other intermediate at one end of the stack, and



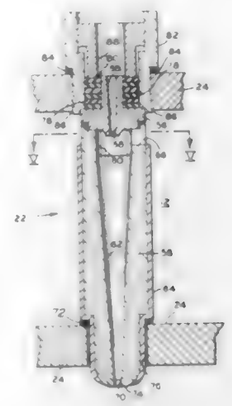
a pluraliy of filters, each of which is positioned between the adjacent filter plates.

3,371,793
CONFORMABLE OIL FILTERING DEVICE
F. Robert J. Fowler, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 12, 1966, Ser. No. 549,674
1 Claim. (Cl. 210—445)

A filter device comprising an envelope of porous filter material sandwiched between impervious sheet material, two ports or ducts being provided with one of those ports or ducts extending through the impervious material and the filter material to the interior of the envelope and the other of those ports or ducts extending through the impervious material. Preferably, the filter material is in one piece and in the form of a folded sheet so that one edge of the envelope formed is a fold and the remainder of the envelope perimeter is clamped or sealed by clamping pressure of the impervious sheet material enclosing the envelope. The concept is such that the device is conformable to a wall defining a restricted zone of use such as a transmission housing or an engine crankcase and despite irregularities and shallow areas which may characterize such zone.

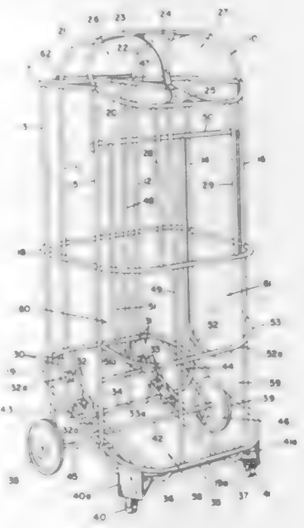
3,371,794
MANIFOLDED HYDROCYCLONE UNIT
Oscar W. Johnson, Greenwich, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Continuation of applications Ser. No. 237,471, Nov. 14, 1962, and Ser. No. 483,021, Aug. 23, 1965. This application Nov. 28, 1966, Ser. No. 597,477
4 Claims. (Cl. 210—512)

A manifolded hydrocyclone unit having a plurality of ceramic cyclones reinforced against thermal and mechanical shocks and stresses by an encapsulating metallic shell



fused to the ceramic body of the cyclone and placing the ceramic body under compression.

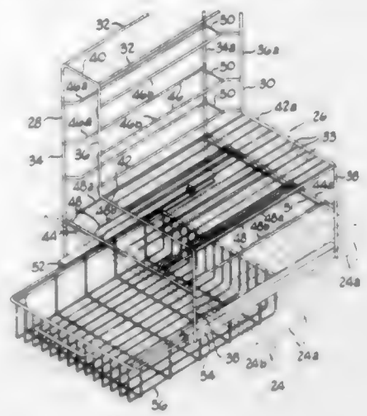
3,371,795
BALL RACK
Paul J. Rosonke, Sacred Heart Military Academy, Watertown, Wis. 53094
Filed Jan. 18, 1966, Ser. No. 523,626
4 Claims. (Cl. 211—14)



A portable, wheeled storage and dispensing rack for basketballs and the like, including an upright frame having four upright chutes and a pair of upper openings for inserting balls into the four chutes. Four lower openings are provided for withdrawing the balls from the chutes. Guide bars and rollers are provided for directing the ball toward the lower openings. The frame has top members extending over the chutes for retaining the balls in the chutes when the rack is tilted backwardly on its wheels when traversing stairs or when it is placed in a substantially horizontal position.

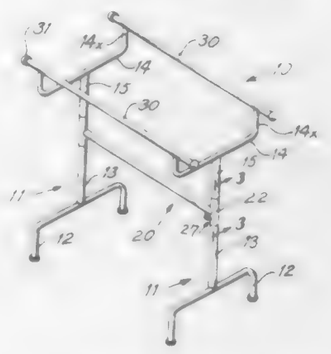
3,371,796
REFRIGERATOR STORAGE RACK
Richard O. Crouch and Russell S. Townsend, Fort Smith, Ark., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 27, 1965, Ser. No. 516,452
6 Claims. (Cl. 211—74)

A wire rack structure usable as an addition to, and supportable by, a refrigerator shelf for maximizing the use



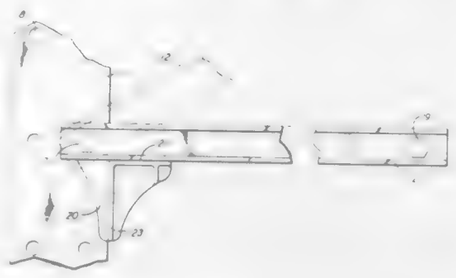
of the space between the usual refrigerator shelves.

3,371,797
FOLDING RACK
Joseph Caligiuri, Yonkers, N.Y., assignor to Hudson Fixtures Incorporated, a corporation of New York
Filed May 9, 1966, Ser. No. 548,490
1 Claim. (Cl. 211—178)



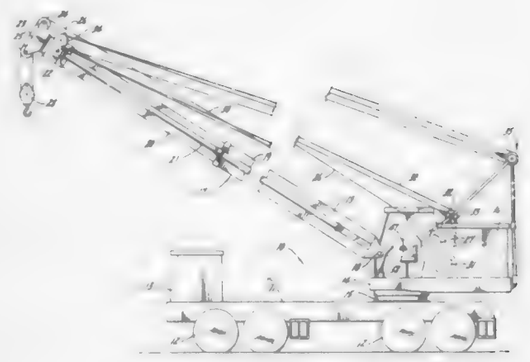
This invention relates to folding racks for dresses and apparel merchandise and more particularly to a rack that can be folded into a planar or flat configuration. The rack is made of tubular elements, having a pair of spaced apart legs and intermediate securing means.

3,371,798
CANTILEVER STORAGE RACK
Thomas N. D'Altrui, Union, N.J., assignor to Midland Machine Company, Elizabeth, N.J., a corporation of New Jersey
Filed July 11, 1966, Ser. No. 564,073
3 Claims. (Cl. 211—182)



1. A storage rack comprising:
a plurality of vertical posts each having first and second abutting walls at right angles;
a plurality of vertically arranged first apertures in the post second wall;
a bracket mounted on each post comprising a base plate part of which is mounted flush against the post second wall and part of which extends from the post second wall beyond the first wall;
the bracket further including a first support wall extending transversely from one side of the base and being flush with the post first wall, and a first load-bearing wall extending transversely from the base plate at substantially a right angle with respect to the first support wall;
a cantilever beam resting on the first load-bearing wall and having a second aperture near one end;
the bracket base plate having a third aperture;
and a bolt extending through one of the first apertures, the second aperture and the third aperture, whereby the cantilever beam is supported in a horizontal position by the bolt and the first load-bearing wall, and the bracket is supported by the bolt and the post first wall which bears against the first support wall of the bracket;
the bolt being located farther from the post first wall than any part of the first load-bearing wall, whereby the cantilever beam is free to pivot about the bolt if an upward force is exerted thereon.

3,371,799
TELESCOPIC BOOM ANGLE CONTROL SYSTEM
Roy D. Brownell, Aurora, and Granville Woolman, Naperville, Ill., assignors to Baldwin-Lima-Hamilton Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 619,628
12 Claims. (Cl. 212—35)

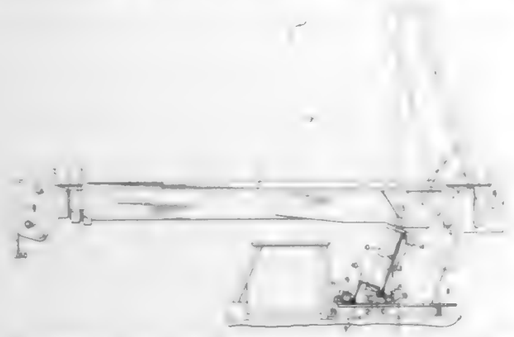


A boom angle control system for a cable supported telescopic boom section employing boom angle sensing mechanism operative to control the effective length of supporting cable to maintain a preselected boom angle as the telescopic boom section is extended or retracted by independent power means.

3,371,800
SAFE LOAD CONTROL DEVICE FOR CRANES
John L. Grove, Greencastle, Pa., assignor to Grove Manufacturing Co., Shady Grove, Pa., a corporation of Pennsylvania
Filed July 21, 1966, Ser. No. 566,856
10 Claims. (Cl. 212—39)

An overload preventive control device for cranes of the stationary and/or mobile types, the booms of which are pivotally raised and lowered in vertical planes, by

means of extensible hydraulic motor or ram means, including a pressure actuated switch responsive to the arcuate movements of the extensible lift ram, and the fluid

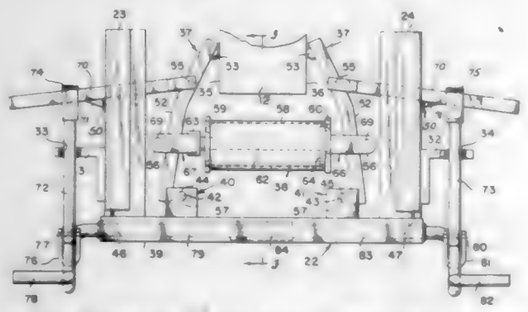


pressure within said ram to calculate the crane tipping moment and render inoperative selected operations of the crane.

3,371,801
EXTENSIBLE JIB, MAST OR THE LIKE
Lars Harald Widegren, Larargatan 14, Kiruna, Sweden
Filed Aug. 8, 1966, Ser. No. 570,881
Claims priority, application Sweden, Oct. 6, 1965, 12,943/65
6 Claims. (Cl. 212—55)

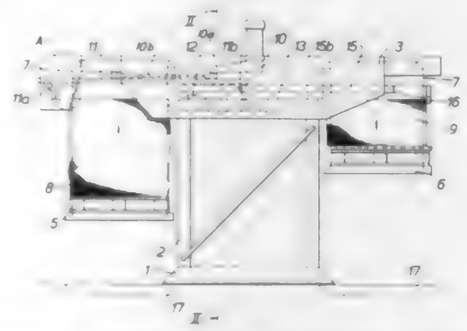
Extensible and retractable boom means comprising a trough-shaped steel strip.

3,371,802
COIL SPRING TYPE COUPLER CENTERING DEVICE
Stephen C. Dungan, Munster, Ind., assignor to Stanray Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 11, 1966, Ser. No. 540,447
14 Claims. (Cl. 213—20)



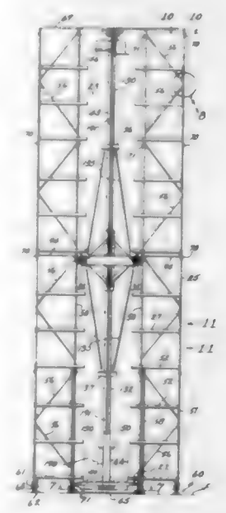
The introduction of the "Hi-Cube" auto service box car, as well as the long flat car for piggyback service, and other new types of railroad rolling stock, has created quite a maintenance problem because of damage caused by passing couplers. Because of the wide swing required of couplers on the new cars and their unusually heavy weight, it is difficult for the average trainman to manually center the couplers according to approved practice for recoupling. This invention provides a coil spring mounted in the coupling mechanism under the coupler to automatically move the coupler to coupling range from any off center position when uncoupled.

3,371,803
PROCESS AND APPARATUS FOR RESTACKING, LOOSENING AND ALIGNING MATERIAL IN SHEET FORM
Karl Hosch, Ostbahnhofstr. 46, Kempten, Allgau, Germany, and Walter Gassner, Jacob Muffelstr. 25, Nurnberg, Germany
Filed July 2, 1965, Ser. No. 469,172
5 Claims. (Cl. 214—6)



Apparatus for loosening stacked sheets operates to separate small piles in succession from a supply stack, transfer the separated piles to a conveyor which supports the piles centrally, with their overhanging lateral edge regions hanging down so that sheet edges fan out and separate, assisted by compressed air jets. The small piles are aligned crosswise by lateral guides and lengthwise by a stop frame and are re-united to form a delivery stack.

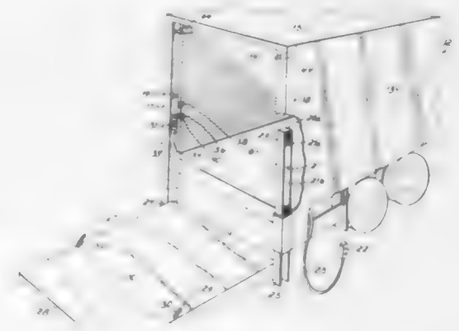
3,371,804
AUTOMATIC WAREHOUSING SYSTEM
Anthony R. Chasar, Columbiana, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 373,803, June 9, 1964. This application Sept. 3, 1965, Ser. No. 484,845
13 Claims. (Cl. 214—16.4)



8. In an automatic warehousing system, a storage frame and a mechanized carrier therefor; said storage frame comprising parallel storage frame sections having rows

of vertical aisle posts defining an aisle therebetween and having load supports arranged vertically between said aisle posts on either side of said aisle; horizontal tracks carried by asid aisle posts on either side of said aisle intermediate the top and bottom of said storage frame and below the mid-point between the top and bottom thereof; means connecting all of said aisle posts in each row only at the top and bottom of said storage frame; said means and said tracks forming the sole connecting means for said aisle posts; said posts defining uninterrupted vertical storage bays between said tracks and said means; and said carrier engaging said tracks for travel of said carrier therealong.

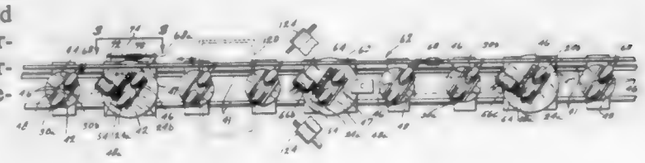
3,371,805
COMBINED ELEVATING AND CLOSING MECHANISM FOR CARGO PLATFORMS
William H. Himes, Dayton, Ohio, assignor to Leyman Manufacturing Corporation, Cincinnati, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 565,610, July 15, 1966. This application Aug. 2, 1967, Ser. No. 660,562
21 Claims. (Cl. 214—75)



A cargo door assembly for use with trailer trucks and the like including, for example, a first and a second mast assembly associated with opposite side walls of the truck's rear opening, each of the assemblies having a mast guide and a mast movable relative thereto, a platform pivotally secured adjacent the lower ends of the mast to permit swinging movement of the platform between an open and and a closed position, a chain having two ends with one of the ends being connected to the door, a compounding wheel rotatably mounted to the first mast guide, and a first anchor mounted to the first mast, the other end of the chain being connected to the first anchor, whereby the compounding wheel is selectively positionable between a first operating position whereat the chain can be engaged by the compounding wheel between the chain's ends when the masts are moved relative to the mast guide for swinging the platform between an open and a closed position like a door, and a second operating position whereat the chain can be engaged by the compounding wheel when the masts are moved relative to the mast guide for raising and lowering the platform like an elevator.

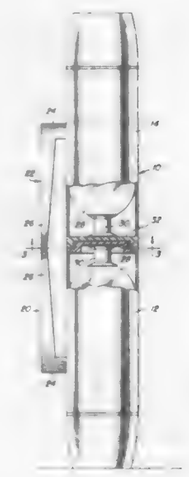
3,371,806
PIPE FEEDING SYSTEM
Everett R. Anderson, Pico Rivera, Calif., assignor to Pacific Pipeline Construction Company, a corporation of California
Filed July 20, 1966, Ser. No. 566,660
9 Claims. (Cl. 214—339)

A conveyor is disclosed for transporting pipes through a treatment station with combined axial and rotary motion to facilitate operations as coating and wrapping. The conveyor incorporates three groups of wheel-pairs, in which each pair of wheels is angularly displaced or canted in relation to the path of travel to accomplish the desired rotary-linear motion. Each of the three groups also includes a motive means to revolve the associated individual wheels, coupled together by the pipe in process. A con-



trol system is then incorporated to control each motive system whereby to synchronize the motion of pipes through the treatment station.

3,371,807
TWO-UNIT INSULATED BOTTLE ASSEMBLY
Ann J. Clouser and Nancy J. Hessert, both of R.R. 1907 Sweeley Ave., Williamsport, Pa. 17701
Filed June 3, 1966, Ser. No. 555,143
5 Claims. (Cl. 215—6)

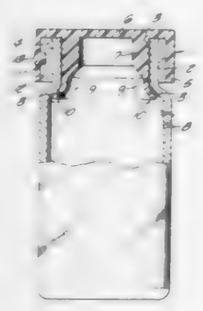


This unit invention is a two-unit insulated vacuum bottle assembly, each unit being complete in itself, with each unit having complementary means for securing the two units together, and in addition, a handle on each unit for using the unit separately, in the form of a pitcher, the handles being so arranged that they complement each other when the units are secured together and act as a single handle for the assembled units. The handles are L-shaped, the long leg of each L extending substantially parallel to the longitudinal axis of the bottle assembly and terminating adjacent the bottom assembly securing ends and thus providing a substantially unitary handle for the assembled units.

3,371,808
UNITARY SAFETY CAP
Evert D. Velt, 6182 Roy St., Los Angeles, Calif. 90042
Filed Aug. 1, 1966, Ser. No. 569,234
8 Claims. (Cl. 215—9)

8. In combination, a unitary safety bottle cap and a bottle having a neck provided with an opening; said cap comprising a cylindrical side wall and an end wall; said end wall internally of said side wall having a cylindrical stopper; said stopper having an end disposed in said bottle

and provided with resiliently inwardly deformable normally outwardly projecting portions; said bottle having internally thereof a shoulder; said resiliently deformable portions of said stopper being in engagement with said shoulder; said end wall having an undersurface and said bottle neck having an end surface disposed in cooperative sealing engagement; means rendering at least a portion of said side wall radially inwardly and resiliently deformable; and cooperative means internally of said side wall and externally of said neck including a thread and means coengageable with said thread for imposing on said stopper a force tending to withdraw the same from said neck responsive to inward deformation of said portion of said



side wall and relative rotation of said cap and said bottle, whereby to deform inwardly said portions of said stopper so that the same will pass said shoulder and enter said neck opening.

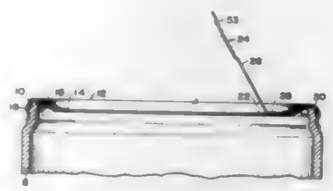
3,371,809
CLOSURE WITH SAFETY LOCK
Joseph B. Pompa, 79 Furlong Road, Rochester, N.Y. 14623
Filed June 30, 1967, Ser. No. 650,359
11 Claims. (Cl. 215—9)

A closure cap for a container of the type including an externally threaded neck, the cap member including an internally threaded generally cylindrical body portion closed at one end and removably threadedly engaged on the neck and including a radially shiftable abutment locking screw which is projectable into the thread path and is positionably behind the point at which at least one inner convolution of the threads on the neck terminates so as to provide an abutment for preventing the threaded closure cap from being unscrewed from the associated container neck as opposed to relying upon frictional engagement of a setscrew with a threaded portion of the neck of the container, the outer end of the abutment screw including a configuration which will render it difficult for a child to unscrew the abutment screw.

3,371,810
TEST TUBE CLOSURE
Friedrich Lüdi, Flawil, Switzerland, assignor to Ludi & Cie, AG., Flawil, Switzerland
Filed Apr. 26, 1967, Ser. No. 633,776
Claims priority, application Austria, Apr. 28, 1966, A 4,005/66
7 Claims. (Cl. 215—38)

A test tube closure for releasably maintaining a closure at the open end of a test tube. The closure includes a hollow cap having a transverse end wall for engaging the test tube at its open end, and the cap has a tubular wall extending axially from the periphery of the end wall and surrounding, with clearance, the exterior of the test tube at the region of the open end thereof. An elongated spring strip is situated within the tubular wall of the cap between the latter and the test tube, and this spring strip has a pair of opposed side edges which are axially spaced in the tubular wall of the cap so that one of these side edges is nearer to the end wall of the cap than the other of the side edges. This spring strip is formed with a series of axially extending slots situated between its opposed side edges and terminating short of these opposed side edges so as to provide the spring strip between the slots with elongated springy wall portions spaced from each other by the slots of the spring strip. These springy wall portions of the spring strip are curved inwardly away from the outer tubular wall of the hollow cap and the springy wall portions have crests provided with inner surfaces directed inwardly away from the tubular wall of the cap and adapted to resiliently engage the exterior surface of the test tube for resiliently holding the cap thereon.

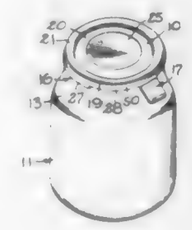
3,371,811
CONTAINER CLOSURE
William H. McKnight, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Nov. 20, 1964, Ser. No. 412,607
3 Claims. (Cl. 215—39)



1. An improved closure for open mouth containers which are vacuum packed and hermetically sealed and which may be readily reclosed and reopened once the vacuum is broken which comprises, a circular top panel projectable within a mouth-defining neck portion of a container, an annular gasket-receiving channel inclined outwardly and upwardly from the outer margin of the said top panel for receiving said mouth-defining neck portion of such container, means for gripping an outer finish of said neck portion, an annular sealing gasket positioned within said annular gasket-receiving channel, a vent penetrating the top panel of said closure, a partially removable tab permanently secured to the upper surface of said closure adjacent the perimeter thereof and extending inwardly to cover said vent and prevent loss of vacuum until such time as said tab is partially removed, and said tab being permanently fixed at its outer extremity adjacent the perimeter with a high peel strength adhesive and semi-permanently affixed inwardly thereof by a low peel strength adhesive.

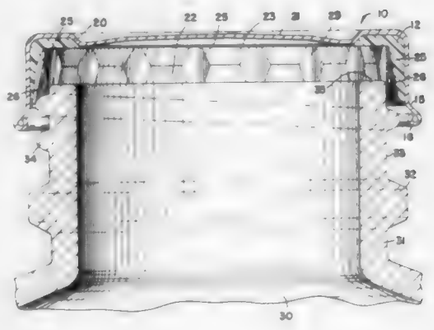
2. An improved closure as defined in claim 1 wherein the said means for gripping the outer finish is an annular downwardly-depending curvilinear beam section bounding said gasket-receiving channel which conforms to and grips said gasket-receiving channel which conforms to and grips said finish.

3,371,812
BEADED CONTAINER WITH LIFT TAB COVER
John A. Foster, Rockford, Ill., assignor to J. L. Clark Manufacturing Co., Rockford, Ill., a corporation of Illinois
Filed Dec. 14, 1966, Ser. No. 601,784
5 Claims. (Cl. 215—39)



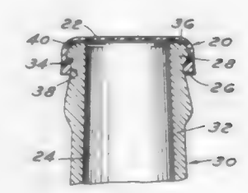
5. A container having, in combination, a cylindrical tubular body having a downwardly rounded lip bead extending around its open end, a cover of relatively thin and resilient sheet metal having a generally flat top and having an integral skirt depending from the periphery of the top and telescoped down over said bead; said skirt including a first arcuate section extending circumferentially around a relatively long arc of said bead, a second arcuate section disposed at the periphery of said top opposite said first section and extending around a shorter arc of said bead, and two intermediate arcuate section of lesser arcuate length than said first section but of greater arcuate length than said second section each extending angularly between adjacent ends of said first and second sections; said first skirt section having a lower free edge portion hooked fully around said bead to hold said cover firmly on said body, said intermediate skirt sections each being hooked only partially around said bead and having free edge portions offset upwardly from and spaced above the plane of the free edge portion of said first skirt section, and said section skirt section having a lower portion hooked around said bead below the free edge portions of said intermediate sections; a pull tab integral at its upper end with and constituting an extension of said second skirt section, said tab extending downwardly and outwardly from said bead to present a free end portion adapted for manual grasping; and a pair of upright score lines angularly spaced in opposite directions from said tab and each formed between the ends of one of said intermediate sections with the angular distance between each score line and the adjacent side of the tab being at least as great as the arcuate length of said second skirt section.

3,371,813
PRESS-ON TURN-OFF CLOSURE CAP
Ronald C. Owen, Harwood Heights, and Donald H. Zipper, Western Springs, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 13, 1966, Ser. No. 549,997
14 Claims. (Cl. 215—40)



A press-on turn-off cap including a shell lined with a gasket compound, the gasket being shaped to include a plurality of radially projecting ribs having the outer surface tapering inwardly toward the top panel of the shell. This provides for more even application of the cap to a container and greater package security through better thread forming to hold the cap in place and permit easier removal. Hot or cold application to the container is also permitted by the novel cap design. Such ribs occupy from 30% to 70% of the total circumferential side surface area.

3,371,814
SINGLE PIECE PLASTIC BOTTLE CAP
Wallace C. Ruprecht, Mount Clemens, Mich., assignor to Ex-Cel Industries, Inc., Warren, Mich., a corporation of Michigan
Filed Nov. 29, 1966, Ser. No. 597,672
9 Claims. (Cl. 215—40)

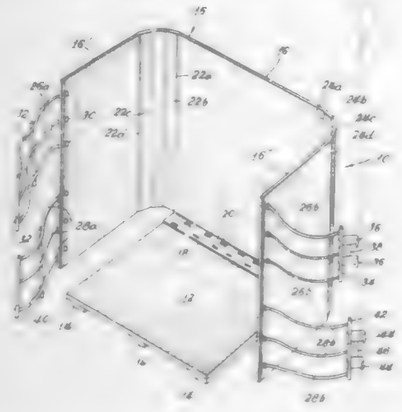


8. In combination, a bottle having a neck portion including a central opening and an adjacent external annular rib, and a single piece plastic closure having a skirt portion overlying said annular rib and a top portion overlying said bottle opening, said skirt portion having an internal annular groove closely overlying and substantially conforming to said annular bottle rib and a thin annular lip joined to said skirt portion within said annular groove, said annular lip stretched over the upper portion of said annular bottle rib and conforming to said annular rib and said annular groove without formation of an air gap between said closure top portion and the bottle top opening.

3,371,815
FREIGHT BINDING DEVICE

Franklin S. Macomber, Park Ridge, Ill., assignor to A. T. Kearney Personnel Services, Chicago, Ill., a copartnership

Continuation-in-part of application Ser. No. 384,491, July 22, 1964. This application June 8, 1965, Ser. No. 465,830
23 Claims. (Cl. 220—1.5)

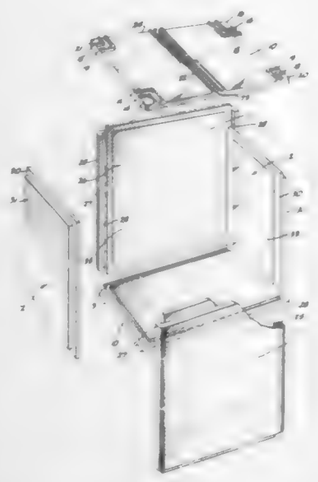


A freight binding member comprising a generally upright wrapper which is connected at its lower end to at least one edge of a generally rectangular rigid base or pallet and which is of a length equal to at least approximately one-half the perimeter of the base so that the wrapper is capable of being held in tension around freight disposed on the base by tension straps or the like connected to the wrapper and yet the wrapper will permit the freight to extend beyond the edges of the base on sides thereof not connected to the wrapper.

3,371,816
COLLAPSIBLE RECEPTACLE

Fausto M. Ricci, 1090 Carolyn Way, Beverly Hills, Calif. 90210

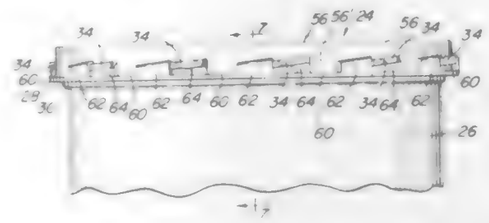
Filed Oct. 22, 1965, Ser. No. 501,428
3 Claims. (Cl. 220—4)



A collapsible receptacle having a base, a pair of side walls removably affixed to the base, a pair of end walls removably affixed to the base and to the side walls and a cover covering said side walls and end walls and removably positioned thereon and means provided on the outside of said base and said cover permitting the interlocking for vertical storage with similarly constructed receptacles.

3,371,817
PLASTIC CONTAINER

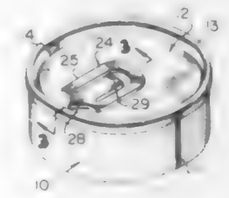
Anthony J. Gasbarra, Flossmoor, and Alva J. Godshalk, Homewood, Ill., assignors, by mesne assignments, to Bennett Industries, Inc., Peotone, Ill., a corporation of Delaware

Filed Feb. 3, 1966, Ser. No. 524,780
13 Claims. (Cl. 220—40)

This invention is a plastic shipping container with a lug locking top to engage with lugs on the container for sealing engagement.

3,371,818
PLASTIC TAB AND INNER TAPE FOR EASY OPENING CAN END

John S. Bozek, Chicago, Ill., assignor to Continental Can Company, New York, N.Y., a corporation of New York

Filed May 27, 1966, Ser. No. 553,535
10 Claims. (Cl. 220—54)

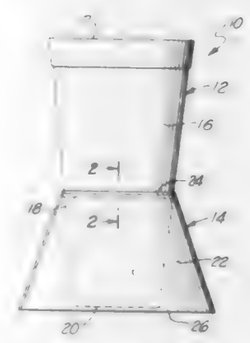


1. An easy opening panel construction for a container comprising a dispensing opening in said panel, a rupturable sealing member secured to said panel surrounding said dispensing opening and sealing said panel, and means for facilitating the rupturing of said sealing member including a cutter formed from the material of said panel and a pull tab connected to said cutter for moving said cutter through said sealing member.

3,371,819
POT CONSTRUCTIONS

David G. Zeman, Redondo Beach, Calif., assignor to Floroware Corporation, Redondo Beach, Calif., a corporation of California

Filed Oct. 23, 1965, Ser. No. 503,253
2 Claims. (Cl. 220—69)

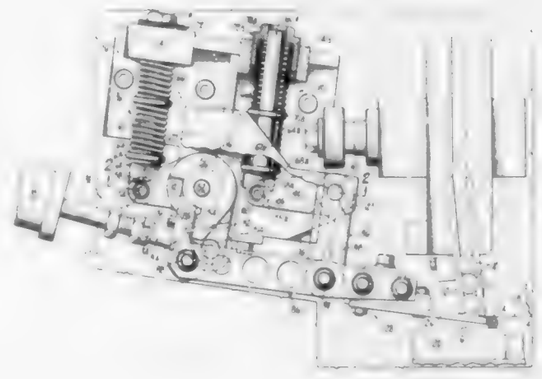


A pot structure is disclosed having a central pot member of a frustrial conical shape and a base having a frustrial conical shape. The pot member is located so that the upper end of the base engages the exterior of the pot member between its ends. Means are formed on the exterior of the pot member for holding the base with respect to the pot member.

3,371,820
STARTER MECHANISM FOR THREAD ROLLING MACHINE

Edward G. Grohoski, Litchfield, and Robert D. Morton, West Hartford, Conn., assignors to The Hartford Special Machinery Company, Simsbury, Conn., a corporation of Connecticut

Filed Dec. 7, 1966, Ser. No. 599,786
12 Claims. (Cl. 221—21)



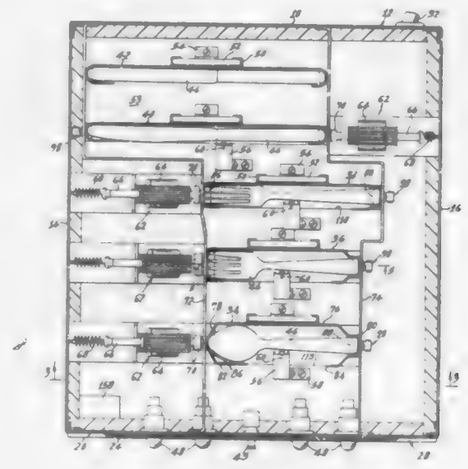
1. In a thread rolling machine of the type having a starter mechanism including a movable starter blade for high speed feeding of a series of work blanks from a feed chute to a work station, a linkage supporting the starter blade for movement toward and away from the work station, and drive means including a drive return device for pacing the operation of the starter blade linkage, the improvement comprising a pivotable crank responsive to operation of the drive means and its drive return device, and biasing means continuously urging the starter blade linkage into direct engagement with said pivotable crank for effecting a resilient lost motion connection between the drive means and the linkage upon occurrence of an abnormal feeding condition.

3,371,821
DISPENSING APPARATUS

Frederick J. Abood, Jr., 6455 San Juan Blvd., Apt. 24 32210, and Wolfgang Wieland, 2549 Forest Blvd. 32216, both of Jacksonville, Fla.

Filed May 25, 1966, Ser. No. 552,959
13 Claims. (Cl. 221—93)

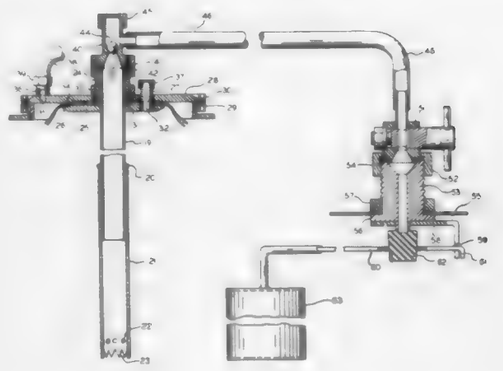
A dispensing apparatus having a plurality of flatware magazines holding vertical stacks of individual pieces of flatware therein, each magazine being provided with a pair of spaced shoulder means adjacent the lower end of the vertically extending magazine for engaging the lowermost piece of flatware and retaining the entire stack of flatware within the magazine. Selective means are positioned adjacent one end of the magazine and is engagable with and operable to move the lowermost piece of flatware out of engagement with one of the shoulder means and toward the other shoulder means to release the lowermost piece of flatware from the magazine and to permit the next adjacent piece of flatware to descend into supported engagement upon the pair of spaced shoulder means. Each magazine is removably supported on the apparatus with the pair of spaced shoulder means being attached to the magazine and the selective means being supported on the apparatus. The selective means includes an electrically operated dispensing member and electric means to selectively actuate such member to contact the lowermost piece of the flatware in the stack within the magazine to dispense same. A slot is provided in one end wall of the magazine through which the dispensing member extends and retracts and opposite to the slot adjacent the other end wall of the magazine is another slot with a releasing device associated therewith which is tensioned by the movement of the lowermost piece of flatware by the dispensing member through the slot in the one end wall with the releasing device urging the lowermost piece of flatware toward the one end wall of the magazine after such flatware has been moved by the dispensing member from engagement with the adjacent shoulder means on the one end wall. The dispensing member is spring biased to its inoperative position and an electrical solenoid is associated with each dispensing member which is selectively actuated by a switch to dispense the selected piece of flatware in the respective magazine. The selective means also includes a master switch and electrical means for energizing all of the solenoids simultaneously to dispense the lowermost piece of flatware from a plurality of magazines when an entire place setting is desired.



3,371,822
BULK DELIVERY, STORAGE AND DISPENSING APPARATUS FOR LIQUID ICE CREAM MIXES AND THE LIKE

Edwin J. Galloway, Menasha, Wis., assignor to Galloway Company, Neenah, Wis., a corporation of Wisconsin

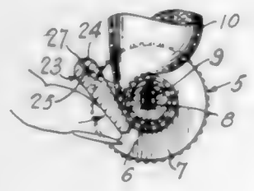
Filed July 1, 1966, Ser. No. 562,329
8 Claims. (Cl. 222—95)



1. Apparatus of the class described comprising: a rigid tank with an opening near its top; a dip tube passing through the opening and having a lower end in the tank,

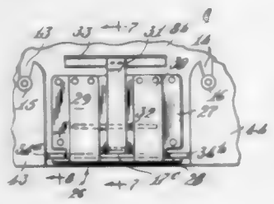
an upper end portion extending above the tank, and an outwardly extending plate near the top of the tank; a cover that closes off the tank opening, said cover lying atop said plate and having an opening through which said upper dip tube portion passes; holding means on said upper dip tube portion and engageable with the cover to support the dip tube on the cover and hold the plate against the cover; a liner in the form of a bag disposed in the tank, said liner being provided with a fill opening surrounding the dip tube above the plate; resilient seal means extending about the fill opening and clamped between the cover and plate to support the bag and seal off the fill opening; an air fitting leading downwardly through the cover at a point within the area of the tank opening but spaced outwardly from the area circumscribed by the seal means; closable vent means opening through the plate and cover within the area circumscribed by the seal means; and a releasable coupling connecting the cover to the tank.

3,371,823
TUBE SQUEEZER
Vagn A. Petersen, 168 Hillside Ave., Montreal, Quebec, Canada
Filed Nov. 29, 1966, Ser. No. 597,762
4 Claims. (Cl. 222—97)



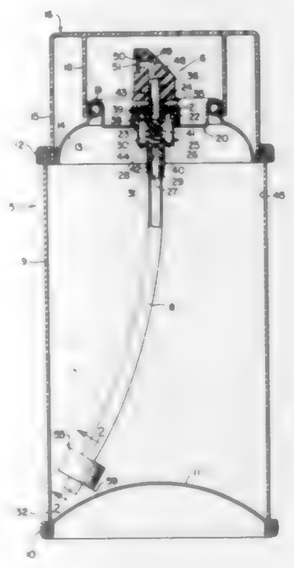
The device encompasses a tube squeezer having a central body with two removable end caps with a press lever pivotally mounted on the caps to permit pressing the tube as it is wound about the central body.

3,371,824
BEVERAGE DISPENSER CABINET
Donald D. Goss, Marblehead, Mass., assignor to H. P. Hood & Sons, Inc., Boston, Mass., a corporation of Massachusetts
Filed Aug. 1, 1966, Ser. No. 569,359
11 Claims. (Cl. 222—105)



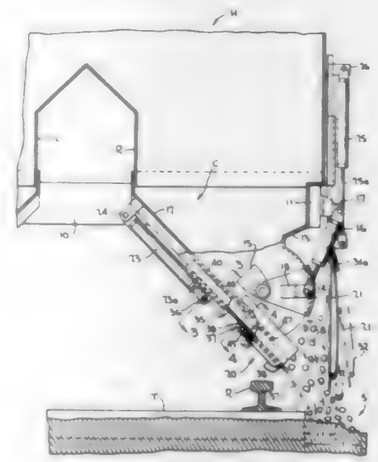
A beverage dispenser cabinet for storing and dispensing beverages of the type which are bulk packaged in flexible plastic bags includes a body member with a removable front wall having an opening receptive of the bag spout, interfitting means removably lock the front wall and body member in assembled relation against the liquid pressure of the beverage. The front wall may form separate upper and lower portions, with the upper portion being separately removable to provide front access to the cabinet when the beverage bag is partially emptied. For beverage bags having flexible spout means, the front wall opening is a gap beneath said front wall, and the cabinet has yielding pinch means for opening and closing the spout.

3,371,825
SORPTIVE GETTER FOR PRESSURE DISCHARGE DISPENSERS
John S. Cullen, Buffalo, N.Y., assignor to Multiform Desiccant Products, Inc., Buffalo, N.Y., a corporation of New York
Filed May 12, 1966, Ser. No. 549,697
1 Claim. (Cl. 222—190)



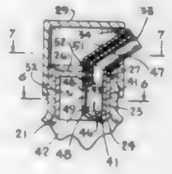
Trace water, and acids resulting therefrom, have plagued products in pressurized cans having a discharge dip tube leading from the bottom of the can to a manual discharge valve on the top head. To meet this problem a sorptive getter is attached to the bottom inlet end of the dip tube where not only it is immersed in the liquid and fully active to the end of use, but it is also immediately active against trace moisture diffusing back down through the dip tube as a consequence of operation and use.

3,371,826
BALLAST DELIVERING MECHANISM
Martin J. Speno, Syracuse, N.Y., assignor to Frank Speno Railroad Ballast Cleaning Co., Inc., Ithaca, N.Y., a corporation of New York
Filed Jan. 10, 1967, Ser. No. 608,430
12 Claims. (Cl. 222—504)



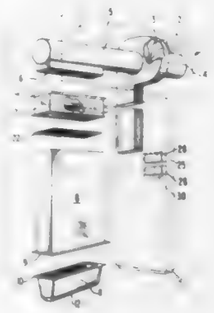
The invention is to a railway ballast discharge mechanism. A railway stone box car has an inclined side discharge chute with a hydraulically operated swinging gate, a power operated sliding chute continuing said discharge chute, and a power controlled baffle plate at the end of the sliding chute.

3,371,827
CAPTIVE CLOSURE FOR CONTAINERS WITH TURNABLE RETRACTABLE SPOUT
Lewis A. Micallef, New York, N.Y., assignor to Leeds & Micallef, New York, N.Y., a partnership of New York
Filed June 16, 1966, Ser. No. 558,047
25 Claims. (Cl. 222—507)



A dispensing cap, for a container, includes a rotatable valved spout and a cap and, when the cap is turned in opposite directions, the spout is cam moved to project through and, respectively, to be retracted from, an opening in the cap.

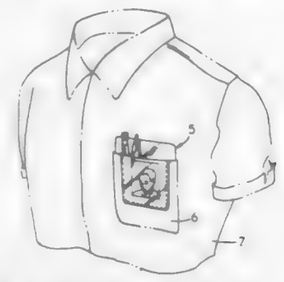
3,371,828
TURNING APPARATUS
Norman E. Elsas, Atlanta, Ga., assignor to Nemo Industries, Inc., Atlanta, Ga., a corporation of Georgia
Continuation-in-part of application Ser. No. 487,717, Sept. 16, 1965. This application Apr. 15, 1966, Ser. No. 549,110
15 Claims. (Cl. 223—43)



1. A textile article turning apparatus comprising an elongated hollow turning duct having an open end, vacuum means connected to said duct for causing a flow of air therethrough from said open end, valve means mounted within said duct between said vacuum means and said open end for controlling the flow of air therethrough, an expansible nozzle mounted on said open end and forming an axial extension of said duct, said nozzle being movable transversely of said duct between a partially collapsed position to permit the open end of a textile article to be positioned thereover and an expanded position to releasably retain a textile article positioned on said nozzle, and means for actuating said valve means alternately between an open and a closed position to cause an intermittent flow of air through said duct to turn an article positioned on said nozzle.

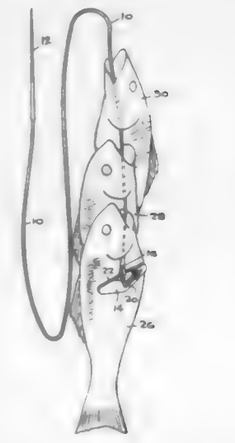
3,371,829
INSERT FOR A POCKET
Wilfred J. Phillips, 4745 Sherwood Drive, Pittsburgh, Pa. 15236
Filed Aug. 9, 1966, Ser. No. 571,346
6 Claims. (Cl. 224—5)

This invention constitutes an insert within a pocket, the insert including two portions, one of which extends within the pocket, and the other of which depends from



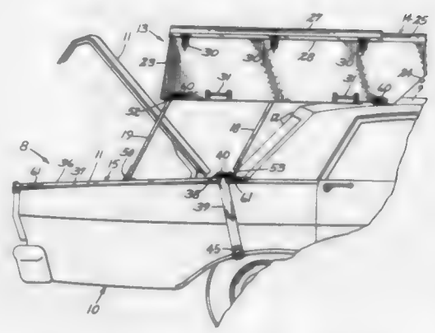
the pocket at the outer surface of the pocket, for displaying and protecting a card through a window therein.

3,371,830
FISH STRINGING DEVICE
William C. Parkman, 123 W. Hunter St. Lakeland, Fla. 33803
Filed May 24, 1967, Ser. No. 641,003
10 Claims. (Cl. 224—7)



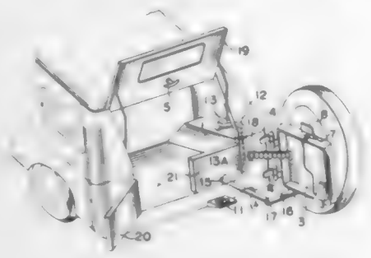
A fish stringer having a fish retainer plate attached to the end of a stringer cord slidable in a slot in the plate to an end portion of the plate to enable removal of the plate through the gills of a fish on the cord.

3,371,831
LUGGAGE CARRIER
Stanley C. Schaeffer, Box 144, Avoca, Minn. 56114
Filed Nov. 25, 1966, Ser. No. 597,051
6 Claims. (Cl. 224—42.1)



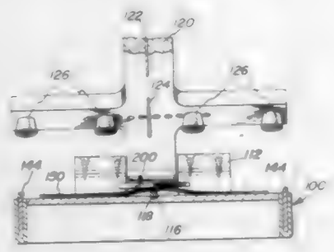
The specification discloses a box-like luggage carrier adapted to be attached in overlying relationship on the rear deck of an automobile or the like and capable of being swung upwardly on a plurality of arms to allow access to the trunk.

3,371,832
MOVABLE SPARE TIRE HOLDER
Kenro Sekino and Yasuo Murase, Toyota-shi, Japan, assignors to Toyota Motor Company Limited, Toyota-shi, Japan, a corporation of Japan
Filed Oct. 11, 1966, Ser. No. 585,881
Claims priority, application Japan, Oct. 18, 1965, 40/64,020; Apr. 21, 1966, 41/25,680
12 Claims. (Cl. 224—42.21)



Spare tire holders on rear-door automobiles have been operable only from the outside of the vehicle. The present invention relates to a spare tire holder that can be operated from inside the automobile and which is effective to swing the spare tire away from the rear door, allowing unimpeded use of the rear door.

3,371,833
GLASS KNIFE
Jerry S. Sutton, 2200 Pinewood Ave., B–3, Baltimore, Md. 21214
Filed Mar. 11, 1966, Ser. No. 533,681
6 Claims. (Cl. 225—2)



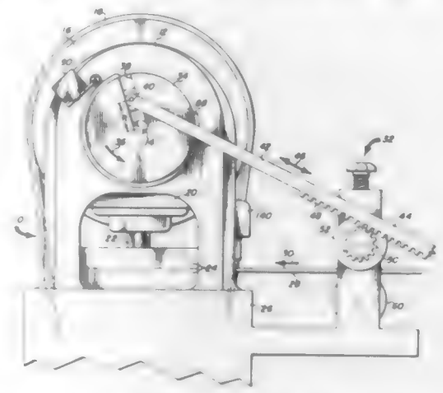
This is a method and especial apparatus for making glass knives, useful in microscopic biology. Essential elements include a base, a round linear fulcrum set in the base, cushion-like cover for the fulcrum to hold the glass precisely in position and a pressure element which swings onto the glass by means of a micrometric pressure applying screw. The fracture of the glass is accurate and the glass free of defects.

ERRATUM

For Class 226—17 see:
Patent No. 3,371,916

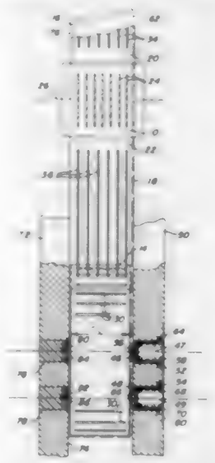
3,371,834
WEB FEED SYSTEM PROVIDING AN AUXILIARY CORRECTING FEED MOVEMENT
Samuel P. Willits and William L. Mohan, Barrington, Ill., assignors to Spartanics, Ltd., Palatine, Ill., a corporation of Illinois
Filed Dec. 16, 1965, Ser. No. 514,228
8 Claims. (Cl. 226—27)

A feed length correcting apparatus for cyclically operating press machinery intermittent strip feed devices operable during a portion of the machine cycle. With a main drive system coupled through an over-running clutch to the feeding elements, an auxiliary feed drive mechanism is also coupled to the feeding elements to impart supplemental motion to effect repositioning of the strip material during intervals when main feed and press are not



acting on the strip, if and when and in an amount desired or, automatically under the control of a sensor scanning a characteristic of the strip material.

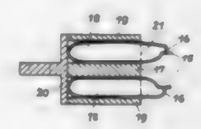
3,371,835
WEB TRANSPORT WITH SKEW CONTROL
Robert A. Pendleton, Dedham, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,900
11 Claims. (Cl. 226—50)



A mechanism for controlling web skew in a web transport wherein at least one capstan defines a curved path portion that is followed by the web. A pressure button bears resiliently against one web edge, making contact with an edge segment that is small relative to the curved path portion defined by the capstan. The action of the pressure button urges the opposite web edge into contact with a fixed guide surface, thus providing web skew control.

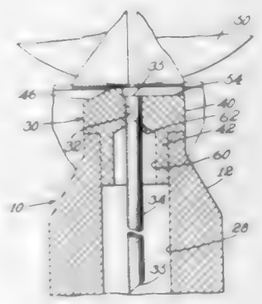
3,371,836
DEVICE FOR MAKING SEMICONDUCTOR ARRANGEMENTS
Hermann Forster, Schwarzenbruck, near Nuremberg, Horst Irmler, Nuremberg, Samuel Pfandler, Behringersdorf, near Nuremberg, and Winfried Schierz, Roth, near Nuremberg, Germany, assignors to Semikron Gesellschaft für Gleichrichterbau und Elektronik m.b.H., Nuremberg, Germany
Filed Aug. 3, 1964, Ser. No. 387,047
Claims priority, application Germany, Aug. 5, 1963, S 86,552
4 Claims. (Cl. 228—40)

1. An apparatus for use in applying terminals to semiconductors in which a resilient U-shaped yoke has the free ends of legs thereof attached to opposite faces of the semiconductor and the closed end of the yoke is cut apart to form the terminals, said apparatus comprising; a bar-like holder, a plurality of recesses extending into one side of the holder, each recess having a depth less than the length of a yoke so that a yoke introduced into a recess closed end foremost will have its free ends exposed, the lateral dimension of each recess being less than the distance across the legs of a yoke when the free



ends of the yoke are in engagement in a yoke when disposed in a recess will have its ends urged resiliently against each other so as to be able to grip a semiconductor therebetween, a member having a cavity therein for treatment material for treating the exposed ends of said yokes when the yokes are in said holder, and cooperating elements of guide means on said holder and member to guide the holder into assembled position with said member so yokes in said holder will have their projecting ends disposed in said cavity of said member.

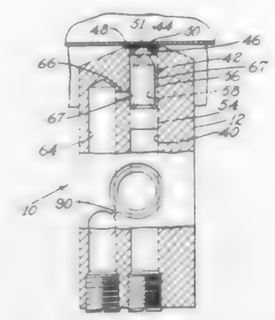
3,371,837
SOLDER APPLICATORS
Frederick S. Sillars, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Dec. 13, 1965, Ser. No. 513,258
7 Claims. (Cl. 228—43)



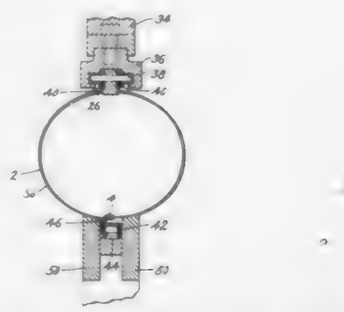
1. In a machine for applying solder to the side seams of moving can bodies, an applicator comprising a base member having a first solder passageway and an orifice member removably mounted on said base member having a discharge passageway of smaller diameter than said first passageway and terminating at an interior portion of the first passageway below the uppermost confine of said first passageway whereby solder discharged from the applicator is drawn from a level which is below the uppermost level of the said first solder passageway.

3,371,838
SOLDER APPLICATORS
Frederick S. Sillars, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Dec. 13, 1965, Ser. No. 513,259
9 Claims. (Cl. 228—43)

1. An applicator for applying solder to the side seams of moving can bodies having means for discharging a stream of solder and means for surrounding said discharge means and said stream with an envelope of pressurized gas thereby to prevent clogging of said discharge means.



3,371,839
SIDE SEAM SOLDERING MACHINES
Frederick S. Sillars, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Continuation-in-part of application Ser. No. 348,932, Mar. 3, 1964. This application July 21, 1964, Ser. No. 385,552
9 Claims. (Cl. 228—44)

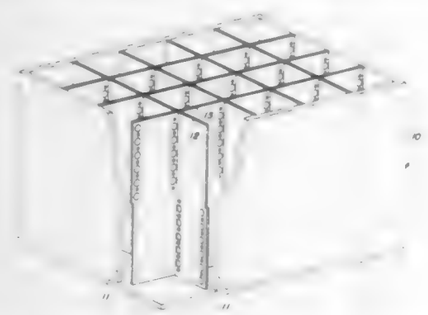


A conveyor chain for use in side seam soldering machines having a plurality of spaced presser lugs which cooperate with feed means for feeding, alining and produring pressure at the overlapping layers of a conventional interlocked container body. The pressure lugs engage the outermost surface of the overlapping portion of the side seam of container bodies at a point spaced from the circumferential terminus of the outer overlapping layer to ensure a close relationship between the overlapping layers of the side seam.

3,371,840
RECEPTACLE SPACER
Wilfred C. Schlager, Chicago, Ill., and James R. Zimmerman, Pontiac, Mich., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Filed May 9, 1966, Ser. No. 548,519
9 Claims. (Cl. 229—15)

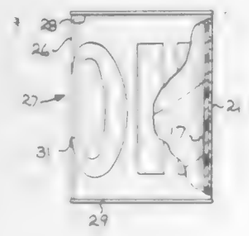
An interlocking cell-forming receptacle spacer of the type having partition members each provided with a plurality of parallel slots extending about half-way in from one edge to permit inverted transverse interfitting. The partition members are made of plastic material and each is provided on both surfaces, by means of suitable forming techniques, with a plurality of pairs of parallel columns of dome-shaped surface projections, each such pair of columns being located between the opposite edge of the partition member and the innermost end of an associated slot and being substantially tangentially aligned with the respective opposite side boundaries of the associated slot.

Upon interfitting of the partition members, each slot boundary-defining portion of each such member is received



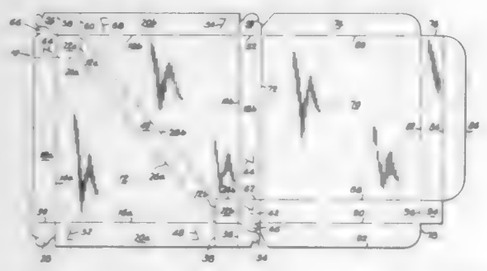
and laterally confined between respective backed-up pairs of columns of such surface projections of a transverse partition member.

3,371,841
CYLINDRICAL ARTICLE
James C. O'Neal, Jr., Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Jan. 3, 1967, Ser. No. 606,929
3 Claims. (Cl. 229—4.5)



This application discloses the construction of a cylindrical article having utility in the manufacture of can-type containers and comprising inner and outer plies of thermoplastic material bonded to one another by a suitable adhesive. The inner and outer plies of the article are formed from spirally-wound strands of thermoplastic material. The application also discloses a spiral-winding method for forming such a cylindrical article in which a cooling medium is circulated through the winding mandrel to reduce frictional forces between the article being formed and the winding mandrel.

3,371,842
FOLDABLE CONTAINERS
Martin M. Hechtmann and Ethel Herbst, New York, N.Y., assignors of one-fourth to Joseph Mandell, New York, N.Y.
Filed Aug. 10, 1966, Ser. No. 571,542
10 Claims. (Cl. 229—33)

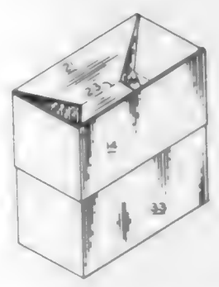


1. A container consisting of a foldable sheet structure which initially has the form of a flat blank and which can be folded from said blank into a container having a flat bottom wall and side walls extending upwardly therefrom, said bottom wall having a periphery defined by two pairs of opposed parallel side edges and said bottom wall also including two pairs of diagonally opposed corners, and said sheet structure including foldable means extending diagonally across said bottom wall between one of said pairs of opposed corners for displacing said bottom wall between an expanded condition where said bottom wall has no folds and the other of said pairs of opposed corners are relatively distant from each other and a contracted condition where said bottom wall is in a partly folded condition and said other pair of opposed corners are closer to each other than in said expanded condition, so that said foldable means of said bottom wall enables the container to assume two different sizes.

3,371,843
TRAY-LIKE CONTAINER
Joseph J. Hainey, Pawtucket, R.I., assignor to Winthrop-Atkins Co., Inc., Middleboro, Mass., a corporation of Massachusetts
Filed Feb. 1, 1966, Ser. No. 524,305
8 Claims. (Cl. 229—34)

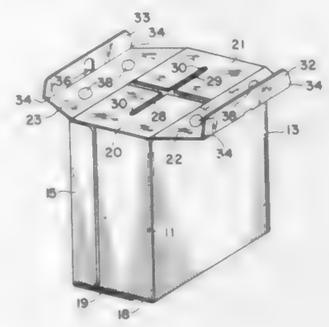
A tray-like container having a flat bottom and hollow rim members peripherally thereof. The rim members are dimensioned so that they can be collapsed to lie flat against the bottom and when erected are automatically connected to each other by interengaging locking elements provided for the purpose.

3,371,844
CONTAINER
Theodore Perrella, 1203 Penn St., Leesburg, Fla. 32748
Filed Dec. 21, 1965, Ser. No. 516,213
6 Claims. (Cl. 229—37)



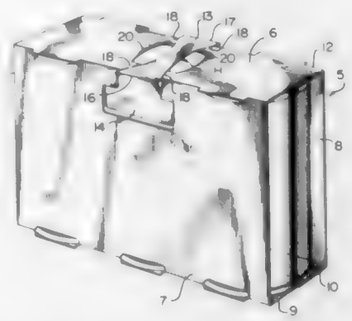
A collapsible container formed from a single blank which may be folded to lie flat for shipping; be erected by pushing the ends of the folded blank toward each other and closed by telescoping the upper portion of the container over the lower portion. The blank comprises lower side and end rectangular panels with bottom forming flaps hingedly connected thereto, upper side and end panels corresponding to the lower side and end panels, and cover forming panels interposed between the upper and lower side and end panels and hingedly connected to both. The cover forming panels are provided with median longitudinal score lines whereby to bend and project inwardly to form the cover when the outer portion of the container is telescoped over the lower. The side cover forming panels are provided with cut out portions to accommodate the infolding end cover forming panels.

3,371,845
RECLOSABLE CARTON
David J. Freiman, Corning, N.Y., assignor to Corning Glass Works, Corning N.Y., a corporation of New York
Filed June 22, 1967, Ser. No. 648,113
4 Claims. (Cl. 229—39)



A carton structure designed for automatic machine sealing after filling, with the overlapping glue-sealed flaps on one end thereof having interlocking tongue and slot portions to lockably reclose such carton once the glue-seal is broken.

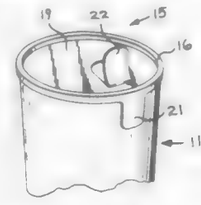
3,371,846
CARRYING HANDLE FOR PACKAGES
Josef Detzel, 37 Brodkorbweg, 896 Kempten, Germany
Filed Feb. 9, 1967, Ser. No. 614,962
10 Claims. (Cl. 229—40)



This disclosure has to do with providing a package with a handle wherein the handle is formed from the material of a carton of the package and is initially integrally connected thereto but is separated therefrom when a lifting force is applied thereto. The handle remains interlocked with the carton at all times.

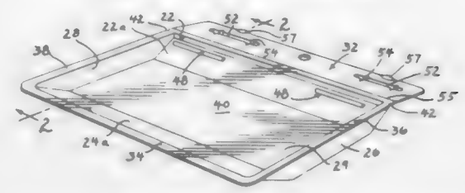
3,371,847
CONTAINER AND CLOSURE MEANS THEREFOR
Edward James Stengle, Jr., Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 3, 1965, Ser. No. 511,532
4 Claims. (Cl. 229—43)

This invention covers a two-piece closure for a composite container or a beaded tumbler having a first member of soft resilient rubber-like material with a depressed central panel located slightly internally of the container and an integrally formed U-shaped flange which snugly engages the container rim and, as a second member, a thin disc of a rigid material which overlies the central panel of the first member and urges the leg of the flange



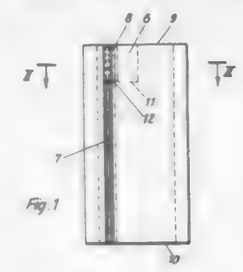
of the first member into sealing engagement with the inside surface of the container wall; also covers the combination of such a closure with a container.

3,371,848
RECLOSABLE PACKAGE
Frank A. Ward and William P. Jacobson, Rockford, Ill., assignors to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois
Filed Oct. 24, 1966, Ser. No. 588,825
15 Claims. (Cl. 229—45)



1. A reclosable package comprising: a container having means defining an open end and an outwardly extending peripheral flange at the open end, a flexible cover member sealed to the flange and providing a sealed closure for the open end, said flange arranged for breaking off one portion thereof from the remainder of the container along a preselected line while the cover member remains sealed thereto, the cover member being peelable from a part of the remainder of the flange as said one flange portion is lifted, first and second interfitting means for holding the cover member in a reclosed position overlying the open end, the first interfitting means being on the one flange portion outwardly of said preselected line and the second interfitting means being on the remainder of the container inwardly of the preselected line, and the one flange portion movable downwardly after peeling of the cover member to a position adjacent the second interfitting means for engagement of the first interfitting means therewith to hold the cover in a reclosed position.

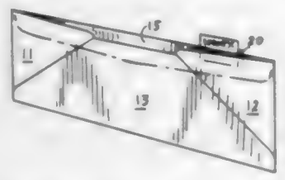
3,371,849
VALVED BAG OF PLASTIC MATERIAL SHEETING
Kurt Rochla, Lengerich, Germany, assignor to Windmöller & Hölscher, Lengerich, Germany
Filed Aug. 19, 1965, Ser. No. 480,898
Claims priority, application Germany, Mar. 11, 1965, W 38,735; May 15, 1965, W 39,164
1 Claim. (Cl. 229—62.5)



1. A valved bag comprising a tube of plastic material, said bag tube having at least one longitudinal tube forming heat seal seam, a tube closing heat seal seam at each

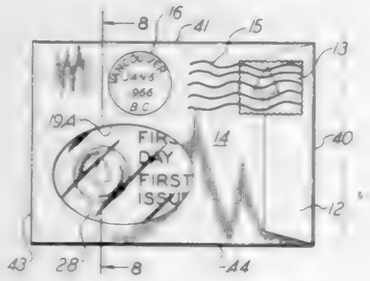
of the two ends thereof, and further comprising an internal valve sleeve of plastics material being secured to said bag tube by means of said tube forming seam, said valve sleeve having two walls which are welded together by a heat-sealed flat seam at least in the region of said tube forming seam, said two walls of said valve are connected by a fold and said flat seam extends along the fold connecting said two walls.

3,371,850
CONVERTIBLE ENVELOPE
Joseph Gorman, 2514 W. Berwyn Ave., Chicago, Ill. 60625
Filed Mar. 7, 1967, Ser. No. 621,268
1 Claim. (Cl. 229—68)



A letter or business paper envelope including a perforated tab integral with the sealable flap of the envelope. When separated from the flap, the tab may be used as a file indicator with the flap tucked in the envelope pocket. When the tab is inserted in the envelope pocket, the flap may be secured to the back of the envelope for mailing.

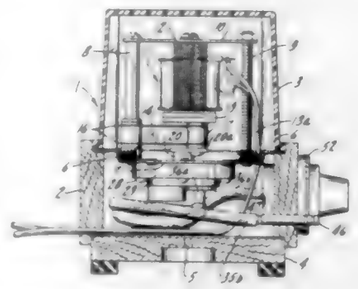
3,371,851
TAMPER-PROOF COIN PACKAGE AND METHOD OF MAKING SAME
Harold B. Silene, Dana Point, and Roger E. Haas, Temple City, Calif., assignors to 99 Coin Company, San Clemente, Calif., a limited partnership of California
Filed May 16, 1966, Ser. No. 550,220
7 Claims. (Cl. 229—92.9)



A coin package and the method of making the package involving an outer envelope comprising a flat tube folded double so as to have a single exterior flap sealable across a single access opening and enclosing a coin holder with an aperture for a coin. The coin holder and coin in the aperture are shielded by a transparent membrane on obverse and reverse sides of the coin such that the coin is visible when the holder and coin are placed in the tubular doubled envelope subsequent to the incising of a window through the envelope after the envelope has been stamped and postmarked.

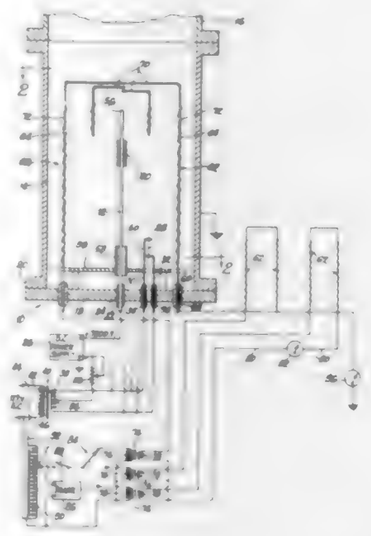
3,371,852
AIR PUMP ASSEMBLY
Harley R. Holt, River Forest, Ill., assignor to Ray-Wayland Corporation, Chicago, Ill., a corporation of Illinois
Filed June 16, 1966, Ser. No. 558,102
8 Claims. (Cl. 230—55)

1. In an air pump assembly, an air pump having a reciprocating shaft and means for supporting said shaft including a pair of spaced, parallel leaf spring elements, each of said elements being fixedly secured adjacent one of their ends to a support and being fixedly secured adja-



cent their opposite ends to said shaft, said elements normally extending in a plane perpendicular to the longitudinal axis of said shaft.

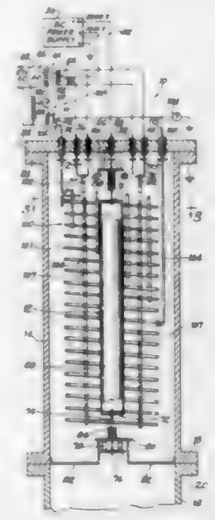
3,371,853
ORBITRON VACUUM PUMP WITH GETTER VAPORIZATION BY RESISTANCE HEATING
Joseph C. Maliakal, Waltham, Mass., assignor to Wisconsin Alumni Research Foundation, Madison, Wis., a corporation of Wisconsin
Filed June 17, 1966, Ser. No. 558,383
19 Claims. (Cl. 230—69)



1. An ion getter vacuum pump,
comprising the combination of a generally cylindrical casing constituting an outer electrode,
means for connecting the interior of said casing to a vacuum system to be evacuated,
a central electrode extending along the axis of said outer electrode,
said central electrode being generally cylindrical and of a small diameter relative to the diameter of said outer electrode,
means for compressing a positive voltage between said inner and outer electrodes to produce a generally cylindrical electric field therebetween,
a thermionic cathode disposed between said inner and outer electrodes and toward one end of said inner electrode for introducing electrons into said electric field with initial angular momentum about said inner electrode,
said electrons traveling in spiral orbits around said inner electrode,
at least one pair of heating rods extending longitudinally in the space between said inner and outer electrodes,

said rods being spaced outwardly of said cathode and inwardly from said outer electrode,
getter material in the form of titanium wire wound around said rods,
said rods of each pair being connected together at one end,
and means for supplying electrical current to the opposite ends of said rods to cause the current to pass along said rods so as to heat said rods and thereby cause vaporization of titanium from said wire,
the evaporated titanium being condensed on the inside of said outer electrode.

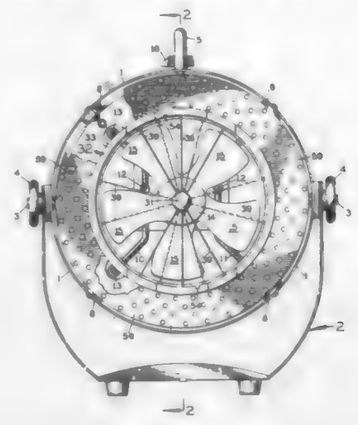
3,371,854
HIGH CAPACITY ORBITING ELECTRON VACUUM PUMP
Raymond G. Herb, Madison, Wis., assignor to Wisconsin Alumni Research Foundation, Madison, Wis., a corporation of Wisconsin
Filed July 27, 1966, Ser. No. 568,170
22 Claims. (Cl. 230—69)



1. In an ion vacuum pump,
the combination comprising a hollow generally cylindrical boundary electrode,
means forming an enclosure for connecting the interior of said boundary electrode to a vacuum system to be evacuated,
an inner electrode disposed centrally in said boundary electrode,
means for impressing a positive voltage between said inner and boundary electrodes to produce a generally cylindrical field therebetween,
and means for introducing electrons into said field between said inner and boundary electrodes with initial angular momentum so that the electrons will travel in spiral orbits around said inner electrode,
said inner electrode comprising a substantially cylindrical member of relatively large diameter,
at least one end of said cylindrical member having a generally axial supporting member of relatively small diameter connected thereto whereby the electric field at said end of said cylindrical member is favorable for efficient orbiting of electrons.

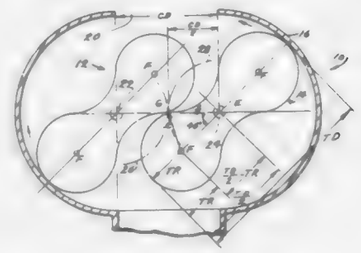
3,371,855
AIR DIRECTING DEVICE
Herbert F. Bruns, 3520 Segovia St., Coral Gables, Fla. 33134
Filed Feb. 25, 1966, Ser. No. 530,139
9 Claims. (Cl. 230—120)

An air directing device consisting of a cylindrical orifice with a power driven fan positioned at one end thereof including a plurality of veins positioned in predetermined relation around the inner periphery of said orifice for cre-



ating a plurality of jet streams of air resulting in a relatively long range discrete coherent column of moving air moving from the device when said fan is energized.

3,371,856
MODIFIED CYCLOIDAL IMPELLER
Francis H. Thelen, Tujunga, and Thomas M. Thomas, Downey, Calif., assignors to Fuller Company, Catasauqua, Pa., a corporation of Delaware
Filed Mar. 24, 1966, Ser. No. 537,209
2 Claims. (Cl. 230—141)

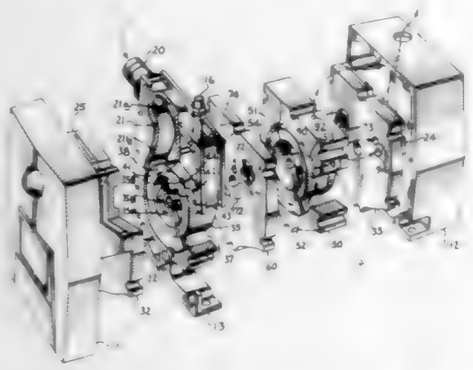


1. Fluid handling apparatus of the rotary positive displacement type comprising a pair of lobed impellers mounted on parallel shafts and rotatable at a constant velocity ratio, each of said impellers having a central waist portion adapted to be mounted on one of said shafts and a plurality of identically shaped lobe portions extending radially outwardly from said waist portion, the profile of each of said impellers consisting of a like plurality of identical convex circular arcs of uniform radius defining said lobe portions and a like plurality of identical concave non-circular curves defining said waist portion, each of said arcs subtending an angle at the axis of the impeller shaft equal to $360°/2n$, where n is the number of said lobe portions, and each of said non-circular curves being generated from a circular arc identical with those defining said lobe portions so that, when said impellers are rotated in opposite directions at the same velocity, there is substantially point contact between said impellers at all positions of relative rotation.

3,371,857
MULTISTAGE VACUUM PUMP
Joseph A. LeBlanc, Jr., Chicago, Ill., assignor to Precision Scientific Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,942
8 Claims. (Cl. 230—152)

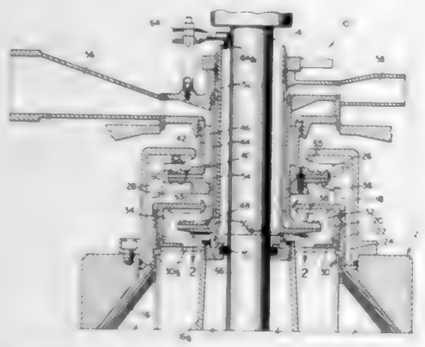
An improved multistage vacuum pump of the internal vane type of substantially any desired capacity may be built from standardized parts by varying the axial dimensions of the rotor, vanes and stator of the intake stage

(i.e., the same radial dimensions are employed throughout for all pump capacities). The desired objectives are achieved by employing a pair of pumping units arranged side-by-side with a separator plate imposed between the two units and a pair of end plates disposed at opposite ends of the two units. In place of separate gas passageways through the pump separator plate ordinarily found in multi-stage vacuum pumps, axial passageways extending completely through the rotors and the separator plate



are provided to achieve stage-to-stage gas passage. Cavities are provided in the end plates and the separator plate in order to permit transfer of gas from the outlet cavity of the intake stage into the rotor hollows and from the hollows of the rotors to the intake cavity of the exhaust stage. Supplementary outlet cavities are provided in order to permit the exhaust of large volumes of gas during the relatively high pressure start up phases of pump operation.

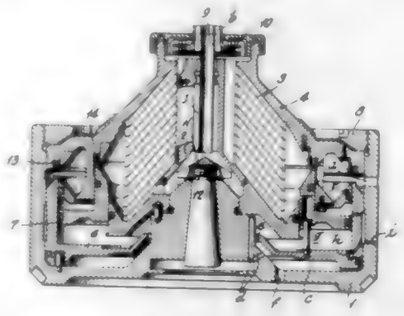
3,371,858
CENTRIFUGE DISCHARGE MEANS
Leonard Shapiro, Upper Darby, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 17, 1966, Ser. No. 535,184
3 Claims. (Cl. 233—14)



In a centrifuge equipped with an annular groove which opens inwardly toward the rotational axis for receiving a skimmer disc, scattering of pasty fluid from the bowl is eliminated by providing the skimmer disc with an axially extending baffle extending into the groove and also by providing the bowl with radial vanes immediately outward of the groove.

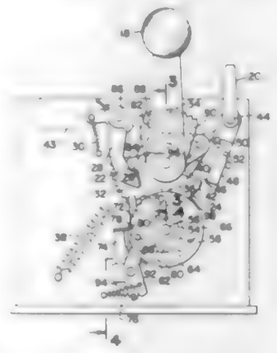
3,371,859
DRUM OF DISC BOWL CENTRIFUGE FOR SEPARATING LIQUID MIXTURE
Ivan Vasilievich Lyskovtsov, Varshavskoe Chaussee, 180, Korpus 2, kv. 30, Moscow, U.S.S.R.
Filed July 14, 1965, Ser. No. 471,935
1 Claim. (Cl. 233—20)

A drum for a disc bowl centrifuge for separating liquid mixtures containing non-fluid fractions, including a body, a holder provided with discs mounted in the body, a working chamber constituted by the spaces between the discs, a reservoir for accumulating the non-fluid fraction arranged behind and concentrically with respect to the working chamber, discharge slots in the body serving to discharge the non-fluid fraction from the reservoir due to centrifugal forces, a first piston within the body for



closing and opening the discharge slots, a second piston operably related to the first piston and body for cutting-off a portion of the reservoir and said second and first pistons alternately moving along the axis of the drum for bringing the cut-off portion of the reservoir into communication with the working chamber and with a receiver for the non-fluid fraction located exteriorly of the drum via the discharge slots.

3,371,860
CONTROL MECHANISM FOR METERING DEVICES
Leif J. Sundblom, Castro Valley, Calif., assignor to Rockwell Manufacturing Company, Statesboro, Ga., a corporation of Pennsylvania
Filed Feb. 1, 1967, Ser. No. 613,333
4 Claims. (Cl. 235—94)

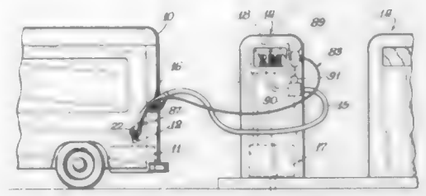


Manual controls and interlock means are provided for sequentially maintaining a display of a registered amount on the face of a computing meter such as a gasoline pump, when the pump is "off," releasing at will a resetting mechanism independent of any movement of the control lever, setting the control lever to a registering position, and winding the reset mechanism for the next reset operation by the return of the control lever to the off position.

3,371,861
DEMAND CONTROL APPARATUS
Elma D. Cudmore and John G. Cudmore, both of 1255 Valley, Bannockburn, Ill.
Filed Oct. 19, 1965, Ser. No. 498,037
11 Claims. (Cl. 235—132)

11. A mechanism for use with a fuel tank having a filling tube with an opening therein, which tank is filled from a source of fluid by a filling apparatus having a rotating measuring means, said mechanism including: a body apart from said apparatus and adapted to be affixed to said tube and having an opening registering with said

fill tube opening when so affixed; demand means attached to said body and adjustable to be preset to indicate the desired quantity of fluid to be added to said container; and drive apparatus detachably connected to said filling



apparatus and connected to said means, said drive apparatus including means, when said filling apparatus is supplying fluid, effective to subtract from the indication on the demand means the amount of fluid measured by said measuring means.

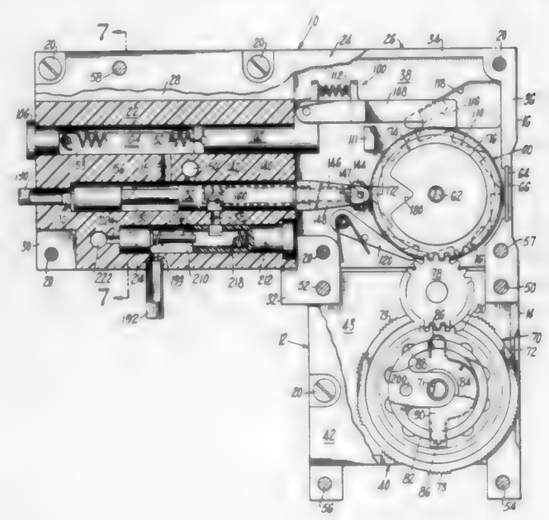
3,371,862
FORCE BALANCE APPARATUS
Hoel L. Bowditch, Foxboro, and Philip H. Sanford, Walpole, Mass., assignors to The Foxboro Company, Foxboro, Mass.
Original application July 2, 1965, Ser. No. 469,259, now Patent No. 3,325,098, dated June 13, 1967. Divided and this application May 22, 1967, Ser. No. 640,075
12 Claims. (Cl. 235—200)

A pneumatic computer for multiplying, dividing, squaring or square-rooting wherein the mathematical result is achieved through balancing two transversely-directed forces, each proportional to a corresponding signal pressure, by an angularly-adjustable reaction element, there being provided a selector plate orientable into different positions to control the pattern of pneumatic connections to the force-producing devices thereby to determine the particular mathematical computation performed.

3,371,863
FLUID-OPERATED COUNTING DEVICE
John H. Bickford, Middletown, Ira B. Crilly, Simsbury, and Igor Blinow, Hebron, Conn., assignors to Veeder Industries Inc., Hartford, Conn., a corporation of Connecticut
Filed June 17, 1966, Ser. No. 558,479
34 Claims. (Cl. 235—201)

A pneumatically operated single wheel predetermining counter adapted to be mounted in a bank thereof to provide a plurality of coaxial counter wheels and a plurality of coaxial predetermining wheels. A reciprocable pneumatic relay valve is adapted to be cycled by an air pulse to connect a transverse passage in the counter providing an air supply plenum to actuate a piston in one reciprocable direction against the bias of a return spring. The return spring, upon the cessation of the air pulse, returns the piston to index the counter wheel. A cam is provided on the counter wheel to control the reciprocable motion of the relay valve and to provide a transfer pulse to the adjacent higher order single wheel counter in the bank when the counter wheel is in its "9" position.

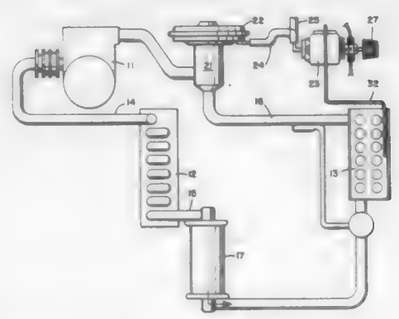
A reset valve is interposed in the transfer passage and is adapted to be pneumatically actuated against the bias of a return spring to close off this passage. For this purpose there is provided a second transverse passage in the counter providing a reset plenum, and the counter wheels are adapted to be reset by (1) connecting the reset plenum to a source of air pressure, (2) pneumatically actuating the relay valve of the lowest order single wheel counter of the bank and (3) supplying air pulses to the air supply



plenum. The transfer cam on the counter wheel provides for retaining the counter wheel in its "9" position such that all of the counter wheels will then be indexed to "0" by the operating piston return springs when the reset operation is discontinued.

The predetermining section of the counter comprises a predetermining rotor with an axially extending passage which is adapted to be aligned with passage sections in the housing to provide an air pulse when the preselected count is reached.

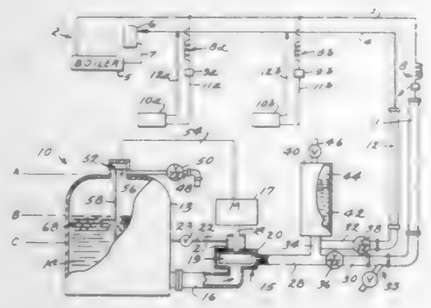
3,371,864
VALVE REGULATOR MECHANISM
James U. Daly and George P. Saliaris, Worthington, Ohio, assignors to Ranco Incorporated, Franklin County, Ohio, a corporation of Ohio
Filed Dec. 15, 1966, Ser. No. 602,102
3 Claims. (Cl. 236—86)



A vacuum regulator **35** and an expansible type thermostatic element **36** are supported on a frame comprised of two side plates **96**, **97** interconnected by a face plate **115**. The vacuum regulator is adapted to be connected to a source of vacuum which may vary, such as the intake manifold of an intake manifold of an internal combustion engine, not shown, through a tube **25** and is adapted to draw a vacuum in a tube **24** which has a subatmospheric pressure which is regulated so that it varies only in accordance with temperatures sensed by the element **36**. The regulation of the vacuum in tube **24**

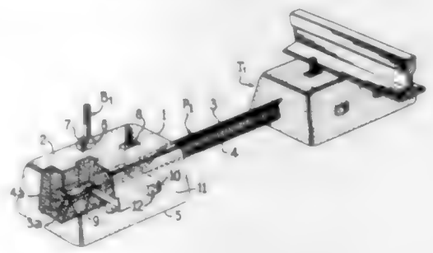
is effected by providing a chamber **43** in communication with the tube **24** and having a valve port **51** to control the connection of the chamber with the tube **25** and the source of vacuum. The port **51** is adapted to be closed by a valve **70** on a flexible diaphragm **56** which forms one wall of the chamber **43**. The valve **70** is adapted to close on a port **78** which is formed on a disc **71** attached to the diaphragm and which surrounds the port **51**. When the port **78** is open, atmosphere is admitted into the chamber. The disc **71** and the central portion of the diaphragm **56** are shifted to open and close one or the other of the ports **51** or **78** by a bail structure attached to the disc **71** in the form of legs **76**, **77**, which extend through apertures in the diaphragm, and a pin **80** attached to the legs. The pin **80** is positioned by the action of a liner **37** pivoted between the side plates **96**, **97** and which engages the element **36**. A spring **101** biases the lever **37** to the element **36** and the pressure imposed by the lever on the element is selectively variable by a lever **138**, to which one end of the spring is attached, which lever is movable about its pivot by a cam disc **153**. The lever **37** is connected with the pin **80** by a deflectable arm **81**, the angular position of which can be finely adjusted by a screw **113** arranged to deflect the arm according to rotary adjustment of the screw. The vacuum regulator is calibrated in one respect by this adjustment.

3,371,865
DEAERATING APPARATUS
Gene W. Ross and David S. Ross, Lorain, Ohio, assignors, by mesne assignments, to Ritter Pfaudler Corp., Rochester, N.Y., a corporation of New York
Filed May 20, 1966, Ser. No. 551,677
8 Claims. (Cl. 237—68)



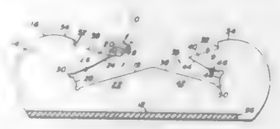
1. Liquid degasifying apparatus comprising:
a degasification tank for containing a batch of liquid which is to be degasified;
vent valve means in communication with the top of said tank for sealing said tank against ingress of fluid when closed and for passing gases out of said tank when open;
a liquid receiving conduit for receiving liquid from said tank; and
means for producing a vacuum in said tank thereby to degasify liquid in said tank and for conducting substantially completely degasified liquid from said tank to said liquid receiving conduit, said means including a pump for withdrawing liquid from said tank whereby when said vent valve means is closed a degasifying vacuum may be produced in said tank, said pump having an inlet disposed below the liquid level in said tank and an outlet, said outlet being connected to said liquid receiving conduit, a holdup tank of lesser volume than said degasification tank and having an upper and a lower portion, said lower portion containing a liquid and being in communication with said liquid receiving conduit, said upper portion containing a gas cushion compressible by liquid in said lower portion and sealed from the atmosphere; and a liquid control valve in said liquid receiving conduit and located more remotely from said pump than the point of communication between said conduit and said holdup tank;
whereby when said vent valve and control valve are closed and said pump is operated, the first-pumped portion of liquid which is withdrawn liquid from said degasification tank is forced into said lower portion of said holdup tank against said gas cushion and whereby when said liquid control valve is subsequently opened, substantially completely degasified liquid is passed from said degasification tank through said liquid control valve.

3,371,866
REINFORCED CONCRETE RAILWAY TIE
Roger Paul Sonneville, 5 Rue Maurice Ravel, Saint-Cloud, Seine-et-Oise, France
Filed July 6, 1965, Ser. No. 469,739
Claims priority, application France, Jan. 13, 1965, 1,723
4 Claims. (Cl. 238—58)



Railway tie comprising two spaced blocks of reinforced concrete, a steel stay having two ends embedded in the two blocks, the stay being in the form of an L-section member which consists of two flanges and is so disposed in the space between the two blocks that the plane bisecting the dihedron formed by the two flanges is substantially horizontal.

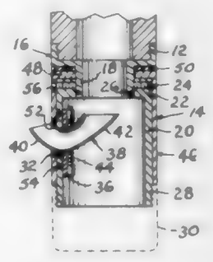
3,371,867
RAILWAY TIE ANCHOR
Adam Gehnert, 500 E. Benham St., Glendive, Mont. 59330
Filed Nov. 14, 1966, Ser. No. 593,864
10 Claims. (Cl. 238—315)



A railway tie anchor having wall portions upstanding from a base, each of said wall portions having at least one slot identical to a slot in the other, each slot intersecting the upper edge of the wall and extending toward the base at an angle therewith, the slot conforming generally to the contour of the rail flange portion to be gripped, with the vertical height of the anchor being such that when installed on a rail a portion thereof extends into abutting relationship with a rail supporting cross tie to anchor the tie longitudinal of the rail.

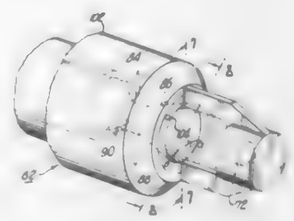
3,371,868
FAUCET FOUNTAIN
Bobby R. Abbott, 3808 SW. 40th Place, Oklahoma City, Okla. 73119
Filed July 18, 1966, Ser. No. 566,111
5 Claims. (Cl. 239—27)

1. A drinking fountain attachment for water faucets, comprising: a tubular body having coupling means at one end for connection with a faucet, said body having an opening in its wall; a door hingedly connected to the inner wall of said body and swingable toward and away from the opening; a conduit projecting through said door, said conduit having one upturned end portion intersecting the



stream of water flowing from said faucet when the latter is in use, said conduit having an opposite upturned end portion directing a portion of the stream of water outwardly and upwardly of said body as a drinking fountain stream when the door is in closed position; and means for opening and closing said door.

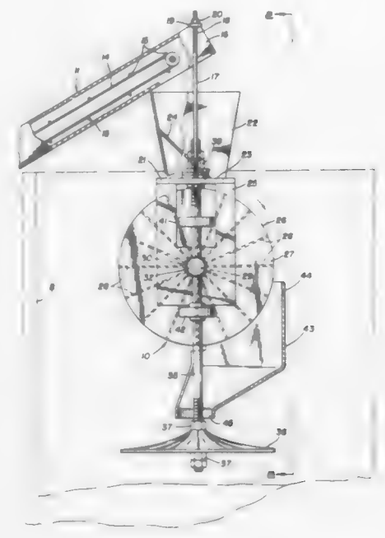
3,371,869
COMPRESSIBLE FLUID SONIC PRESSURE WAVE ATOMIZING APPARATUS
Nathaniel Hughes, Bronx, N.Y., assignor to Sonic Development Corporation of America, Yonkers, N.Y.
Original application Dec. 23, 1963, Ser. No. 332,502, now Patent No. 3,240,254, dated Mar. 15, 1966. Divided and this application Oct. 19, 1965, Ser. No. 511,010
3 Claims. (Cl. 239—102)



The atomizing apparatus comprises a nozzle having a diverging outlet section for accelerating a compressed gas to supersonic velocities. A cavity resonator member is positioned downstream from the diverging outlet section to amplify the shock waves created by the supersonic gas flow from the nozzle. Liquid to be atomized is injected into the boundary layers of the gas stream flowing in the nozzle so as to form the nozzle walls either with or without the assistance of solid metal. Liquid to be atomized also is injected into the gas stream outside of the nozzle. The liquid is atomized by the sonic pressure waves and other forces. The resulting spray has a high degree of uniformity of droplet particles size. The pertinent portions of the description in this divisional application are those describing FIGURES 6 through 8 and 11.

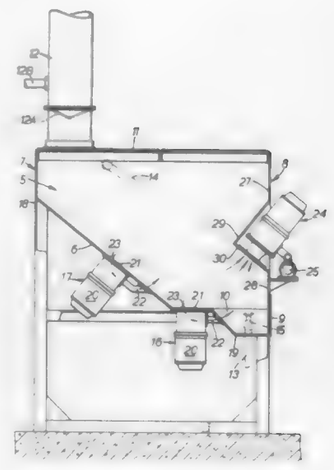
3,371,870
MATERIAL DISTRIBUTOR ATTACHMENT
Herbert W. Harrer, Rte. 1, New Washington, Ohio 44854
Filed June 28, 1965, Ser. No. 467,550
6 Claims. (Cl. 239—684)

A distributor for particulate materials having a paddle wheel driven by the gravitational flow of materials from a hopper and a rotary, material spreader arranged to be



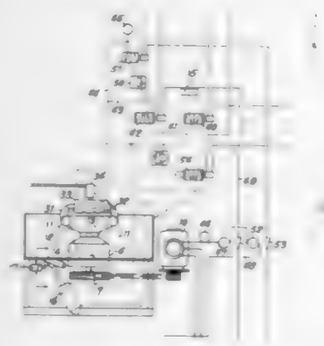
driven by a friction drive operating off of the paddle wheel.

3,371,871
WASTE DISPOSAL INSTALLATIONS
Thomas Cropper Ryley Shepherd, Arbour Hill, Herefordshire, Ross-on-Wye, England
Filed May 20, 1965, Ser. No. 457,402
5 Claims. (Cl. 241—43)



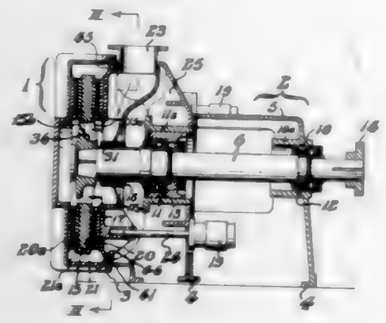
A waste disposal installation for the disposal of solid waste material particularly from office buildings or blocks of flats. The waste, together with water, is fed down a duct to be delivered on a sloping wall of a disposal chamber which leads down to a sump. Reducing apparatus in the wall of the chamber above the sump breaks up the large articles of waste and agitates the water in the chamber so that the reduced waste is dispersed in the water. The water containing dispersed waste passes out of an outlet above the reducing apparatus and is fed via a comminutor to drain. A grid may be positioned across the chamber above the comminuting apparatus with an overflow pipe leading from the chamber above the grid.

3,371,872
MIXER-GRINDER
Robert André Marcel Ronceray, 122 Ave. des Champs Elysees, Paris 8eme, France; Lena Sarah Yeomans, Andree Jacqueline Laure Ronceray, Francoise Monique Mary Ronceray, and Pierre Robert Ronceray, heirs of said Robert A. M. Ronceray, deceased
Continuation-in-part of application Ser. No. 365,993, May 8, 1964. This application Feb. 18, 1966, Ser. No. 528,513
Claims priority, application France, July 30, 1963, 26,753, Patent 89,802
3 Claims. (Cl. 241—132)



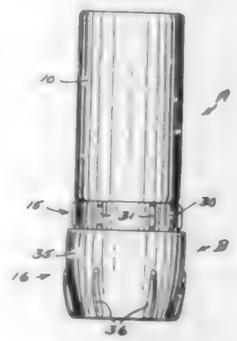
1. A mixer-grinder of the type described, comprising a stationary tank;
a driving unit consisting of a motor located outside of the tank and a reduction gear unit placed within said tank and having an output shaft;
an arm connected to the output shaft of the reduction gear unit;
at least two working members carried by said arm, one of said two working members being movable into and out of working position at any given time, said one working member being moved by said motor;
a power cylinder connected to said working members for controlling said movement into and out of said working position;
a source of air under pressure and a system controlling the flow of said air from said source to said power cylinder so that the power developed by the motor will be substantially constant during the operation of said one working member.

3,371,873
REFINING APPARATUS
Keith V. Thomas, 613 W. State St., Trenton, N.J. 08618
Continuation of application Ser. No. 297,737, July 23, 1963. This application Mar. 24, 1966, Ser. No. 537,244
14 Claims. (Cl. 241—163)



1. A refining apparatus comprising:
(A) a main frame including a stress receiving member,
(B) a rotatable drive shaft mounted in said main frame for rotational movement about its main axis,
(C) said stress receiving member of said main frame having a forwardly facing first flange, said stress receiving member being designed such that said flange will exhibit radial deflection symmetry relative to said main axis when subjected to radially symmetrical forces parallel to said main axis,
(D) a casing having a rearwardly facing second flange, said second flange being attached to said first flange at a sufficient number of spaced points to ensure that said casing cannot deflect independently of said stress receiving member, said casing being designed so as to exhibit radial deflection symmetry relative to said main axis of said drive shaft when subjected to radially symmetrical forces parallel to said main axis,
(E) a non-rotatable first refining plate attached to and supported by said casing, said plate having a first refining surface perpendicular to said main axis of said drive shaft, said plate being supported by said casing so that said plate cannot deflect independently of said casing,
(F) a rotatable plate support disc supported on the front end of said drive shaft for rotation with said drive shaft, said rotatable support disc being designed to exhibit radial deflection symmetry relative to said main axis of said drive shaft when subjected to radially symmetrical forces parallel to said main axis,
(G) a second refining plate having a second refining surface disposed parallel to and facing said first refining surface, said second refining plate being attached to and supported by said rotatable support disc so that said second refining plate cannot deflect independently of said rotatable support disc, and
(H) loading means to apply in a radially symmetrical fashion a force to said rotatable plate, said force being parallel to said main axis and in a direction tending to cause said refining surfaces to bear against one another,
whereby said refining surfaces will remain parallel to one another and perpendicular to said main axis of said drive shaft whenever axial deflections are sustained by said member, casing, disc, and/or plates.

3,371,874
PEPPER MILL
Stuart L. Reeves, 1440 SW. 67th 73159, and Clyde A. Reeves, 8601 NW. 18th 73127, both of Oklahoma City, Okla.
Filed June 3, 1965, Ser. No. 461,035
10 Claims. (Cl. 241—168)

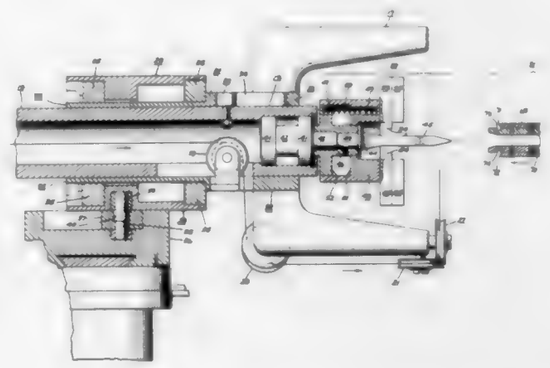


1. In a pepper mill, the combination of a first body portion, a second body portion, grinding means, and mounting means for operable attachment of said grinding means to said second body portion; said first body portion including a housing having means for attachment of said first body portion to a container, passageway means for enabling passage of material from an attached container to said second body portion, and a cylindrical peripheral portion, an endless groove extending about said cylindrical peripheral portion of said housing, and means operably connected with said grinding means; said second body portion including a guideway for receiving material passing through said first body portion from an attached container and guiding the same to said grinding means, a sleeve portion having a cylindrical inner face provided with a plurality of tabs projecting inwardly therefrom toward the axis of said cylindrical inner face, said tabs of said second body portion being received within said endless groove of said first body portion in juxtaposition to provide means for freely rotatable attachment of said second body portion to said first body portion; and said grinding means including a pair of cooperating members operably disposed for grinding action on rotation of one of said body portions with respect to the other through cooperative interaction of one of said cooperating members with said mounting means and cooperative interaction of the other of said cooperating members with said means of said first body portion operably connected with said grinding means.

3,371,875
LINER FOR CRUSHERS
Rudolph J. Gasparac, Milwaukee, and Arnold P. Szaj, Hales Corners, Wis., assignors to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 21, 1965, Ser. No. 499,427
5 Claims. (Cl. 241—299)

The invention relates to an improvement in bowl liners for crushers in which helical wedge receiving surfaces are employed, adjacent surfaces being helically disposed in opposite directions, whereby to provide a self-locking effect in response to the rotation of the bowl liner in either direction.

3,371,876
COIL WINDING MACHINE
Albert F. Wilcox, Yoder, Ind., assignor to General Electric Company, a corporation of New York
Filed Jan. 24, 1966, Ser. No. 522,753
8 Claims. (Cl. 242—9)



A flyer type winding machine for winding coils on a stationary coil form. A rotatable spindle carries the flyer that not only rotates with the spindle but also moves longitudinally along the spindle. A spindle arbor is positioned at one end of the spindle and is capable of being fixed in position in nonrotatable relationship with respect to the spindle. A turret arbor is nonrotatably supported on the machine for longitudinal movement relative to the spindle arbor. The turret arbor and the spindle arbor have cooperating and mating pieces which are securely locked when the turret arbor is advanced into engagement with the spindle arbor to provide the stationary coil form. The cooperating and mating pieces consist of a wedge and flange on the spindle arbor and consist of expandable jaws and flange on the turret arbor which permit a coil form to be adjusted to the desired shape and dimensions.

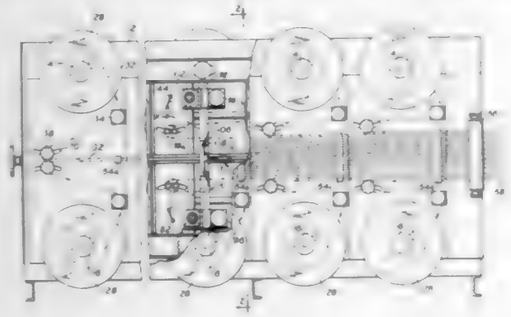
3,371,877
METHOD FOR PACKAGING MULTI-STRAND ROVING
Jerome P. Klink, James C. Belue and James H. Sears, Anderson, S.C., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,866
9 Claims. (Cl. 242—18)

This invention relates to a multistrand roving and to a method of and apparatus for forming and attenuating streams of mineral material into fibers, segregating the fibers into groups or strands and winding a roving comprising the groups or strands in a package to provide a package with ends in parallel planes normal to the axis of the package, the method including compacting the strands or groups at the package ends whereby the package is of cylindrical shape throughout its length.

3,371,878
PAYOFF STAND
Oscar G. Garner, Westfield, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed Nov. 16, 1964, Ser. No. 411,431
8 Claims. (Cl. 242—45)

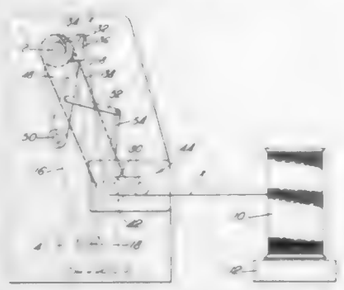
1. Wire strand supply apparatus including, in combination, a frame having a strand feed zone along which all strands from the apparatus are advanced substantially horizontally and substantially parallel to one another to a discharge end of the apparatus, the upper and lower limits of said feed zone being at a height from a floor for convenient handling of the strands during string up and change over by an operator standing on the floor, a plurality of rows of spindles supported by and extending

substantially horizontally from the frame including one row at a level above said feed zone and another row at a level below said feed zone, the spindles extending outwardly toward the operator, spools on the respective spindles for holding the strands of wire, guide means over which strands from the respective spools on the spindles pass to the strand feed zone, the guide means including a strand payoff guide for each spool and over which a strand passes as it comes from the spool, other guide means for the strand from each payoff guide including a



tensioning roll around which the wire strand passes beyond the payoff guide to said strand feed zone, the tensioning roll being in such position that the wire strand moves substantially horizontally and generally parallel to the strands in said feed zone and to the strands at all of the other tensioning rolls as the strand approaches and leaves said tensioning roll, and means for mounting each tensioning roll for movement substantially parallel to the wire strands in said feed zone and in accordance with the tension of the strand for obtaining uniform tension in the strands in said strand supply apparatus.

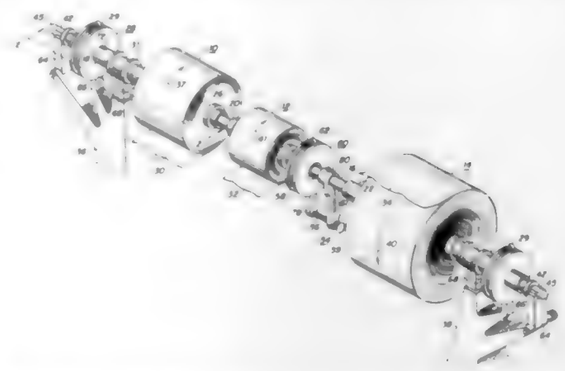
3,371,879
YARN WINDING APPARATUS
Moore Hill, Belfast, Northern Ireland, assignor to James Mackie & Sons Limited, Belfast, Northern Ireland
Filed July 16, 1965, Ser. No. 472,553
Claims priority, application Great Britain, July 20, 1964, 29,490/64
3 Claims. (Cl. 242—45)



A yarn winding or spooling machine having haul pulleys positioned to act upon the yarn between the let-off and take-up package spindles to positively drag yarn from the rotating let-off package, the haul pulleys being driven by a variable speed mechanism, means being provided to increase the speed of the haul pulleys and hence the rate of delivery of the yarn to the take-up package, as the diameter of the package being wound increases.

3,371,880
PAPER ROLL HOLDER
William J. Clisham, 18 Boyd St., Bangor, Maine 04401
Filed Jan. 10, 1966, Ser. No. 519,726
5 Claims. (Cl. 242—55.3)

This invention relates to a paper roll holder that permits each of a plurality of paper rolls mounted on a common shaft to pay off paper at a rotation rate that is independent of the rotation rate of the other rolls. Means

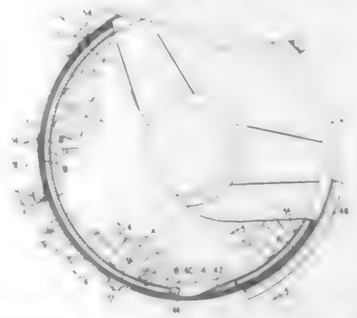


are provided to position each roll axially along the shaft and independently retard the rotation of each roll.

3,371,881
MAGNETIC RECORDING AND PLAYBACK APPARATUS
Charles F. Rose, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 15, 1965, Ser. No. 487,534
12 Claims. (Cl. 242—55.12)

A fast forward mechanism for magnetic recording and playback apparatus includes a linkage provided to vary the bias between a clutch plate and drive pulley for the tape reel to control the rate of rotation of the reel.

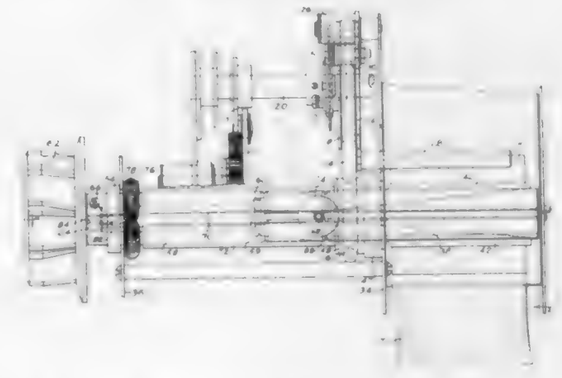
3,371,882
TOGGLE LATCHING REEL COVER WITH A SLIDING DOOR
Anthony W. Orlando, Highland, N.Y., Ronald R. Jacobsen, Golden, Colo., and Stanwood W. Nutter, Poughkeepsie, and George Popp, Pleasant Valley, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 8, 1966, Ser. No. 577,883
7 Claims. (Cl. 242—55.13)



1. A protective cover for a tape reel having flanges comprising an expandable split-ring member adapted to surround the outer circumference of the flanges, toggle means secured to the ends of said split-ring member adapted to draw the ends of said ring member together to clamp the ring member on the circumference of said flanges, tape passage means formed in said ring adjacent one end thereof, movable door means secured to said ring and adapted to be moved into open and closed positions with respect to said passage means, and pneumatic means

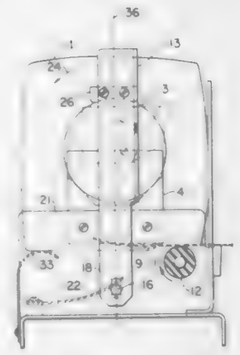
for transporting the end of the tape through said door means in said open position.

3,371,883
TAPE REWIND
Robert C. Hoffman, Park Ridge, and Raymond M. Faber, Chicago, Ill., assignors to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 10, 1966, Ser. No. 519,779
11 Claims. (Cl. 242—67.3)



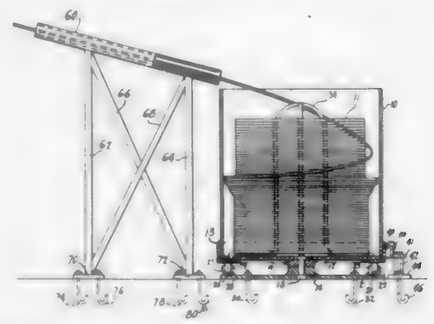
1. A driven tape rewind mechanism for a business machine comprising in combination, a rotatable mandrel on which the tape is wound, means rotatably supporting said mandrel, said mandrel having a first porition on which the tape is wound, said first portion being radially slotted, finger plates movably mounted in said slots to project therefrom so as to be engaged and gripped by the tape being wound on said first mandrel portion, a hollow shaft arranged coaxially with said mandrel and having a camming means in the end thereof adjacent said mandrel, said finger plates having camming surfaces adapted to be engaged with said shaft camming means to project said finger plates outwardly to tape engaging position, said mandrel having a lost motion connection with said hollow shaft to permit axial lost motion therebetween sufficient to engage and disengage said shaft camming means and said camming surfaces, and a means slidably enclosing the adjacent ends of said hollow shaft, said mandrel, and said finger plates.

3,371,884
CASSETTE
Henry N. Fairbanks and Daniel H. Robbins, Rochester, N.Y., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Aug. 4, 1966, Ser. No. 570,209
16 Claims. (Cl. 242—71.1)



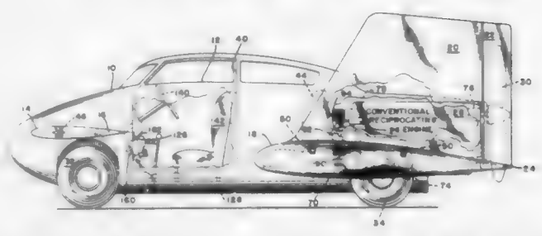
A specially designed "throwaway" cassette is disclosed which is particularly well adapted for storing large amounts of photosensitive web material to be fed into a photocopy machine. The cassette configuration is such that a cassette-mounted roller is not needed and the web driving force remains constant as the material is consumed. A rubber roller external to the cartridge coacts with a bearing surface on the cartridge for driving the strip material from the cartridge.

3,371,885
REINFORCING WIRE DISPENSER
Howard N. Douglas, 20 Circle Drive, Chico, Calif. 95926
Filed May 3, 1966, Ser. No. 547,339
2 Claims. (Cl. 242—129)



A dispenser for heavy stiff reinforcing wire which includes a reel support frame secured for rotation said frame including a substantially cylindrical container, the walls of the cylinder extending substantially above the height of the roll of reinforcing wire therein, and an elongate guide angularly disposed with respect to the axis of the cylinder for directing wire from the interior of the cylinder wall through the director and to the point of use that the stiffness of the wire acts automatically to brake the rotation of the wire support frame is disclosed.

3,371,886
AIRCRAFT ADAPTED FOR HIGHWAY USAGE
Robert O. Schertz, 12 E. 2nd St., El Paso, Ill. 61738
Filed Jan. 14, 1966, Ser. No. 520,732
17 Claims. (Cl. 244—2)

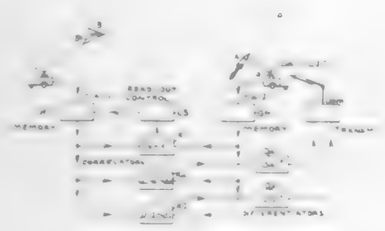


An aircraft adapted for highway travel has a canard configuration; a removable forward horizontal stabilizer; rear foldable main load-carrying wings; a side opening cabin door between horizontal stabilizer and main wings; wheel means used for highway travel, takeoff and landing, and retractible during flight; a power plant used for highway travel and flight, and controls having dual highway and flight usage.

3,371,887
APPARATUS AND METHOD FOR GUIDING A FIRST TRAVELLING BODY RELATIVE TO A SECOND TRAVELLING BODY
Arno Welti, Zurich, Switzerland, assignor to Albiswerk Zurich A.G., Zurich, Switzerland, a corporation of Switzerland
Filed Mar. 23, 1966, Ser. No. 536,833
Claims priority, application Switzerland, Mar. 26, 1965, 4,244/65
11 Claims. (Cl. 244—3.11)

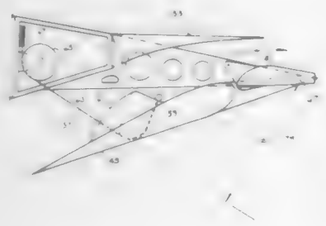
A first tracker tracks a first travelling body to continuously obtain the coordinates of the travel path points of the first body and to provide the coordinates as first path

data. A first memory records the first path data pointwise in accordance with the coordinates thereof. A second tracker separate from the first tracker tracks a second travelling body to continuously obtain the coordinates of the travel path points thereof and to provide such coordinates as second path data. A second memory separate from the first memory records the second path data pointwise in accordance with the coordinates thereof. A



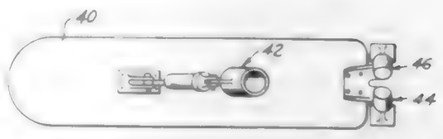
data processor connected to the first and second memories seeks in the path of travel of the second body a point having a predetermined coordinate in a given relation to the same coordinate of a point in the path of travel of the first body and provides guidance commands from other coordinates of the same points in the paths of travel of the first and second bodies. The guidance commands are then transmitted to the first body.

3,371,888
INVERTING FLAP SYSTEM
Alberto Alvarez-Calderon, Av. Salaverry 3465, Orrantia del Mar, Lima, Peru
Filed July 12, 1965, Ser. No. 471,274
25 Claims. (Cl. 244—42)



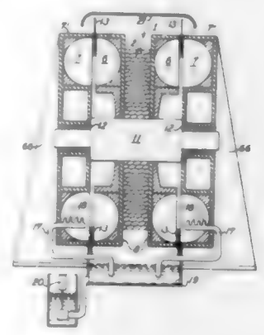
1. A primary airfoil having an upper surface, a trailing edge portion, a trailing edge and a lower surface; an inverting airfoil mounted on said primary airfoil adjacent to said trailing edge, said inverting airfoil being adapted to be inverted by angular motion from a high-speed retracted position faired in said trailing edge portion of said airfoil to an extended position in which said inverting airfoil increases the effective area and chord of said primary airfoil; said primary and inverting airfoils being further characterized in that means are provided to move said inverting airfoil with respect to said primary airfoil comprising bracket means attached to said inverting airfoil with said bracket means having a root portion and a protruding portion, cable means attached to one of said bracket means and inverting flap at a location adjacent to said root portion and extending to said primary airfoil, with said cable means resting against said protruding portion when said flap is in said extended position, and with said cable means extending directly from said location adjacent to said root portion to said primary airfoil in a direction away from the protruding portion of said bracket when said inverting flap is retracted.

3,371,889
STEERABLE LANDING SKID
Donald J. Fecher and Robert A. Price, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed June 6, 1966, Ser. No. 555,636
4 Claims. (Cl. 244—50)



A steering device for a non-rotatable ground-engaging vehicle skid, such as a landing skid for an aircraft, which includes a movable ground-engaging mechanism for transmitting a positive lateral thrust against the ground to change the direction of movement of the skid with respect to the ground. The desired lateral thrust can be provided by a ground-engaging rotatable wheel, or by a pair of angularly disposed reciprocal ground-engaging pistons or "kickers."

3,371,890
BRAKING DEVICE FOR MOVING BODIES
Jean Merle, La Tronche, France, assignor to Societe Grenobloise d'Etudes et d'Applications Hydrauliques, Grenoble, France, a corporation of France
Filed Oct. 5, 1965, Ser. No. 493,165
Claims priority, application France, Oct. 5, 1964, 4,726; Oct. 23, 1964, 4,735; Mar. 31, 1965, 4,788
27 Claims. (Cl. 244—110)

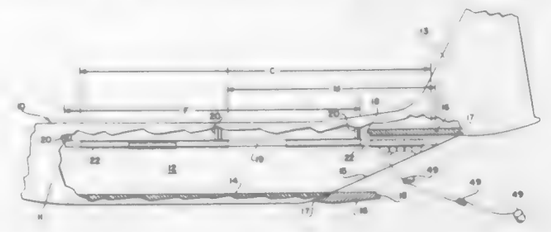


A braking device for decelerating landing aircraft composed of a drum with a landing cable wound thereon and a rotary air brake comprising an associated stator and rotor, each having on a side thereof a plurality of cells with their openings disposed in opposed, spaced relation to the cell openings of the other, and said stator and rotor being in direct communication with the surrounding atmosphere. Means are provided to regulate the flow of the atmospheric air between the stator and rotor. The air brake is preferably cooled by atomization.

3,371,891
LOADING, CONVEYING AND EJECTING MECHANISM FOR AIRCRAFT
Stanley F. Brader, Sr., and Charles L. Kuhn, Marietta, and Oliver F. Snow, Atlanta, Ga., assignors to Lockheed Aircraft Corporation, Los Angeles, Calif.
Filed Sept. 16, 1965, Ser. No. 487,676
10 Claims. (Cl. 244—137)

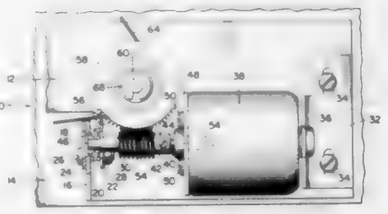
This system provides a structurally sound and stable extensible and retractable aerial delivery conveyor within an aircraft cargo compartment. The entire assembly is mounted in the aircraft overhead structure thereby providing a clear, unobstructed cargo compartment. Means is provided for hoisting and conveying desired bundles

from strategically located storage bins in the cargo compartment of the delivery position beyond the cargo ramp



and automatically release them in sequence at a predetermined time interval without the use of conventional floor rollers or extraction chutes.

3,371,892
MECHANICAL MOUNTING APPARATUS
Ronald C. Miller, Norristown, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 12, 1966, Ser. No. 578,573
7 Claims. (Cl. 248—2)



1. A mounting arrangement for a driving member having an output means passing through the longitudinal axis thereof for engaging a load comprising,

mounting means having a mounting portion perpendicular to said longitudinal axis of said driving member,

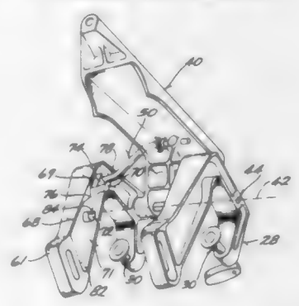
low friction rotational means mounted upon said mounting portion in line with said longitudinal axis of said driving member,

first restraining means for restraining the lateral motion of said driving member while allowing relative motion along said longitudinal axis,

second restraining means for restraining the radial motion of said driving member while allowing relative motion along said longitudinal axis, and

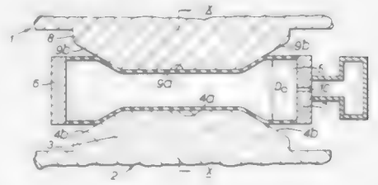
said output means attached to said low frictional rotational means arranged for engaging said load and transferring the forces associated therewith to said low friction rotational means rather than said driving member.

3,371,893
RELEASABLE ARRANGEMENT FOR RETAINING OUTBOARD MOTOR IN ELEVATED POSITION
Clarence E. Blanchard, Jr., Kenosha, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Apr. 8, 1966, Ser. No. 541,158
9 Claims. (Cl. 248—4)



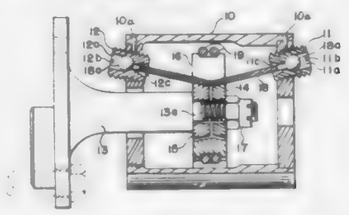
Disclosed herein is means including a support arm mounted on a swivel bracket for pivotal movement relative thereto and engaged in a guideway in a transom bracket for automatically and releasably retaining the swivel bracket in an elevated position in response to swivel bracket pivotal movement.

3,371,894
RESILIENT MOUNTING DEVICES
Michael Carl Hartnell-Beavis, Drymen, Scotland, assignor to Yarrow and Company, Glasgow, Scotland, a British company
Filed Feb. 2, 1966, Ser. No. 524,419
Claims priority, application Great Britain, Feb. 9, 1965, 5,650/65
4 Claims. (Cl. 248—9)



Rotary coupling in which relative rotation between two co-axial members compresses one set of gas filled flexible tubes interposed between concave bearing surfaces on ribs projecting from the two members and allows a second such set to expand. The increase in contact area and pressure of the set of tubes compressed causes the coupling to become stiffer as the displacement from equilibrium increases. The coupling accommodates misalignment of the axes of the two members by rolling of the tubes.

3,371,895
VIBRATION-DAMPING AND LOAD-SUPPORTING APPARATUS
Stephen L. Speranza, Jr., Elmont, N.Y., assignor to Aeroflex Laboratories Incorporated, a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,434
7 Claims. (Cl. 248—20)

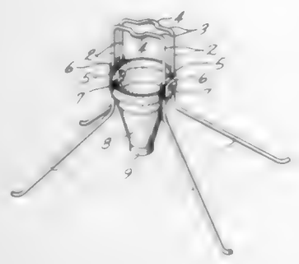


A vibration-damping and load-supporting apparatus for interconnecting a supporting member and a supported member comprises a box-like frame connected to one of the members and having in each of two parallel opposed faces a group of substantially equi-angularly spaced adjustable ferrules for anchoring opposed ends of a group of stranded wire cables extending between the opposed faces. An elongated strut is coaxially located in the frame and includes clamping means for securing an intermediate portion of each of the cables to the strut. The cable lengths, extending in opposite directions from the strut, are oppositely inclined at an acute angle to the axis of the apparatus and are prestressed approximately to the normal static load to be supported.

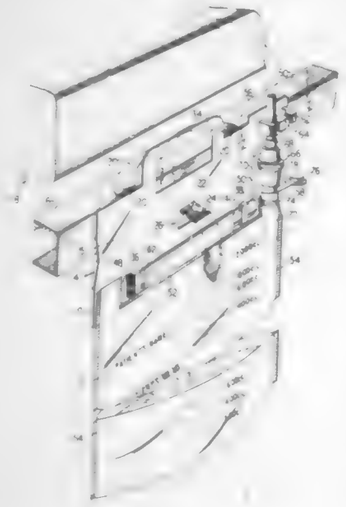
3,371,896
CLAMPING CHRISTMAS TREE STAND
James P. Cox, 17660 SE. Alder, Portland, Oreg. 97223
Filed Nov. 19, 1965, Ser. No. 508,816
1 Claim. (Cl. 248—46)

Crossbars forming the tops of two pivotally connected U-shaped members are pressed toward each other to

clamp a pole, such as a Christmas tree trunk, between them. Each U-shaped member includes an arched portion and legs diverging downwardly away from the arched portion. Pivots connect opposite sides of the arched portions and support a cup between the arched portions to receive the lower end of a pole or trunk. The arched portions are arranged in substantially parallel planes with the legs diverging downwardly away from such planes.



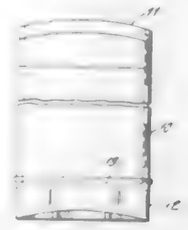
3,371,897
DRAIN BAG SUPPORT ASSEMBLY
Frank J. Serany, Jr., Pompton Plains, and John C. Vasta, Clifton, N.J., assignors to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York
Filed July 22, 1965, Ser. No. 474,107
8 Claims. (Cl. 248—95)



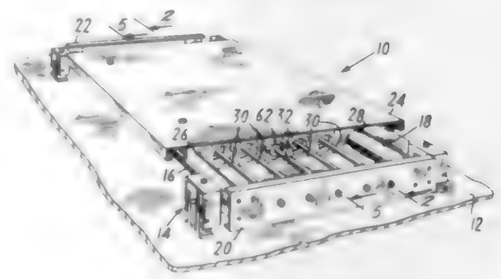
A support for a drainage bag intended to receive body fluids, the support comprising a flexible strap for use in hanging the support from a bed rail or the like and the support having clamping means guiding a drainage tube leading to the bag and means for removably attaching a bag to the support.

3,371,898
GOLF BAG BOTTOM HAVING VENTING OPENINGS
John P. Murray, Jr., Princeton, N.J., assignor to Atlantic Products Corporation, Trenton, N.J., a corporation of New Jersey
Filed June 10, 1966, Ser. No. 556,662
5 Claims. (Cl. 248—96)

A golf bag bottom has a curved bottom with reinforcing ribs extending across the curved bottom. Venting openings are placed in the lowermost point of the curved bottom to drain water from the bag and permit air into the bag. The bottom has a generally rectangular configuration and rectangular walls extending upwardly from the periphery of the bottom.

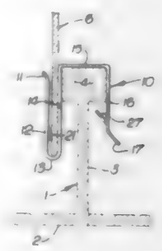


3,371,899
SHOCK ABSORBING APPARATUS
John Algot Johnson, 9 Sheridan Drive, Short Hills, N.J. 07078
Filed Aug. 13, 1965, Ser. No. 479,433
10 Claims. (Cl. 248—119)



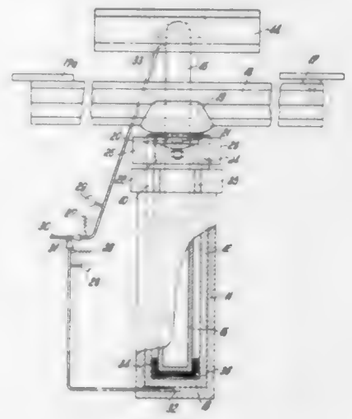
A shock absorbing apparatus including a load-supporting platform slidably mounted on guides carried by vertically extending shock dampening elements for dissipating vertical and laterally directed high frequency shocks, the load-supporting platform being biased by means of pre-stressed springs to an equilibrium position on the guides, the springs being arranged to oppose low frequency shocks tending to displace the platform lengthwise of the guides and including braking means interposed between said platform and said guides which have a low static coefficient of friction which increases as the speed of displacement of the platform relative to the guides increases to thereby dissipate shock and ease restoration of the platform to the equilibrium position on the guides.

3,371,900
UNITARY DOUBLE-DETENT CONNECTOR FOR LIGHTING FIXTURES
Arthur F. Jacobs, Los Angeles, Calif., assignor to Prudential Lighting Corporation, Los Angeles, Calif., a corporation of California
Filed Feb. 14, 1966, Ser. No. 527,264
6 Claims. (Cl. 248—343)



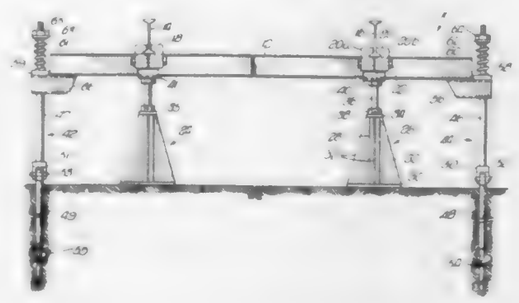
A unitary, double detent connector including an upright U whose outer leg includes a detent angularly inclined toward the base of the U to frictionally grasp an imperforate marginal edge of a lighting fixture at any desired portion of its length, and an inverted U having an inwardly extending detent for receiving and retaining the head of a T-bar of a grid-type ceiling, for removably positioning a lighting fixture on such ceiling.

3,371,901
SUPPORT
Karl M. Groetschel, Stolzestrasse 44, Bochum, Germany
Continuation-in-part of application Ser. No. 322,606, Nov. 12, 1963. This application Aug. 25, 1964, Ser. No. 392,002
Claims priority, application Germany, Aug. 29, 1963, G 38,575; June 29, 1964, G 40,953; Austria, May 14, 1964, A 4,234/64
31 Claims. (Cl. 248—354)



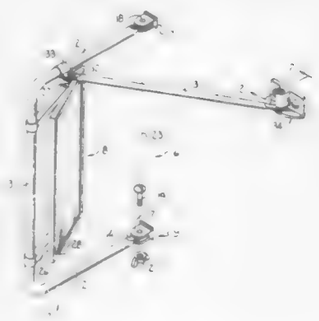
1. A support device for supporting the roof of a mine in underground mining operation and of the type which can be used by itself or as a component of a support assembly, said device comprising, in combination:
an external prop including a cylinder and a hollow piston disposed therein which is open at the top;
an inner prop carried within said hollow piston and being telescopically movable independently of the hollow piston thereby to define a coaxial support, said props being of approximately the same length;
independent cap means provided on each of said props and arranged to be effective upon different regions of the roof of a mine; and
means for placing the props under the same pressure by a pressure medium and in a sequence which is selectable.

3,371,902
MOBILE HOUSE STABILIZER
George J. Hartwick, Box 758, Rte. 1, Waukegan, Ill. 60085
Filed July 26, 1966, Ser. No. 567,885
6 Claims. (Cl. 248—354)



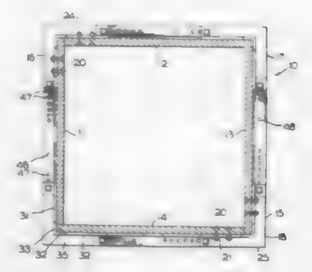
1. A stabilizer system for a mobile house or similar vehicle, comprising a main beam member for supporting the chassis of said mobile house, means for clamping the chassis members of said mobile house to said main beam member, said means for clamping being slideably mounted upon said main beam member and moveable along the length thereof for registry with said chassis members, supporting means for maintaining said main beam member above ground level in a substantially horizontal attitude, and a pair of tension members, one of said tension members being positioned at each end of said main beam member outboard of said supporting means, and each of said tension members being secured at one end to the ground and having at its other end resilient means for exerting a groundward force upon the end of said main beam member.

3,371,903
BRACE ROD FOR REARVIEW MIRRORS
Maurice J. Thompson, 1632 E. 14th St., Oakland, Calif. 94606
Filed Aug. 17, 1966, Ser. No. 572,973
7 Claims. (Cl. 248—486)



1. A bracing device of the character described for use with a mirror supporting bracket pivotally attached to a vehicle, comprising an axially extending rod, a housing adapted to be secured to a vehicle, means in said housing for receiving one end portion of said rod and pivotally supporting the same, means on the other end portion of said rod for pivotal connection to said bracket, means resiliently retaining said rod in said housing and permitting withdrawal of the same upon a predetermined force applied to the rod by pivotal movement of said bracket.

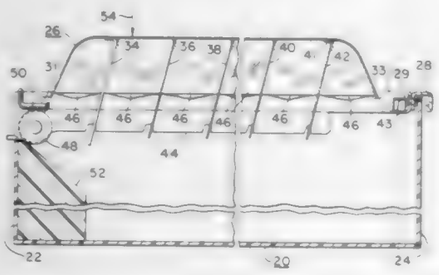
3,371,904
FORM FOR CONCRETE COLUMNS
John L. Low III, P.O. Box 1348, Laurel, Miss. 39440
Filed Oct. 23, 1965, Ser. No. 503,858
8 Claims. (Cl. 249—48)



1. A form for pouring a concrete column comprising four upwardly extending substantially flat panels, the panels being arranged whereby they enclose an upwardly extending four sided cavity for receiving unset concrete

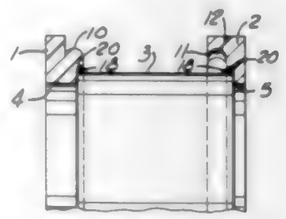
mix with adjacent panels being at approximately right angles to each other to thereby provide four substantially 90° corners at the edges thereof, first and second column clamps, one of the clamps being retained on the outer surface of a first of said corners and the other being retained on the outer surface of a second of said corners, the first and second corners being oppositely disposed, each of the clamps including a pair of elongated, substantially flat transversely extending portions, the transversely extending portions being substantially shorter than the width of the panels and lying in upright intersecting planes which form an approximately 90° internal angle at the intersection, the internal surfaces of the transversely extending portions conforming with and being positioned on the outer surfaces of the said oppositely disposed corners whereby one horizontally extending portion is on an edge portion of each of the four panels, means for securely attaching hte horizontally extending portions to the panels whereby the panels forming the first and second corners are retained at right angles to each other and the first and second corners are maintained substantially square, a pair of spaced substantially flat reinforcing portions extending outwardly from the external surfaces of the pair of horizontally extending portions of each clamp, the pair of spaced reinforcing portions extending longitudinally along and embracing the pair of horizontally extending portions and forming an approximately 90° angle therewith, the spaced reinforcing portions having aligned openings therein alongside each of the horizontally extending portions, means for retaining the edges of the panels forming the third and fourth corners at right angles to each other and thereby maintaining the third and fourth corners substantially square, and means for connecting the retaining means for the edges of the panels forming the third and fourth corners to each of the column clamps, the connecting means including elongated members which are inserted between the spaced reinforcing members, the said elongated members having openings therein aligned with the openings in the spaced reinforcing members, and fastening means inserted through the aligned openings in the spaced reinforcing members and the openings in the said elongated members.

3,371,905
ICE EJECTOR TRAY AND BUCKET
Roland J. Bunnell, Durham, N.C., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,904
7 Claims. (Cl. 249—69)



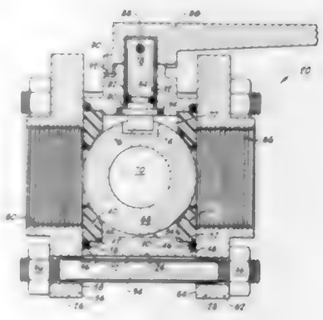
1. A frozen liquid ejecting assembly including a long mold for frozen liquid and a long collecting receptacle for receiving in inverted position said mold, said collecting receptacle and inverted mold having interengaging means adjacent one end for supporting said end of said mold upon said receptacle, the opposite end of said collecting receptacle being constructed to extend outside the path of any downward movement of said mold, said mold being provided with a movable grid, and interengaging cam and cam follower means between said mold and said receptacle for moving said movable grid to release frozen liquid from said mold for delivery into said receptacle.

3,371,906
IRIS VALVE
Richard P. Lubold, Indiana, Pa., assignor to Link-Belt Company, a corporation of Illinois
Filed Jan. 14, 1965, Ser. No. 425,391
10 Claims. (Cl. 251—4)



An iris valve having a flexible sleeve connected at spaced annular positions therealong to the bores of a plurality of rings at least one of which may be mounted on a tubular member and the other having relative rotary movement to twist the sleeve and close the bores of the rings. Adjacent faces of the rings having concave and convex bearing sockets disposed axially of the rings which when flexed are snapped into and out of mating interengagement. The aligned annular surfaces on the bores of the rings are spaced axially of said bearing surfaces to which said sleeve positions are secured. Thus the bearing surfaces are wholly contained within the rings themselves and one or the assembly of the rings may be detachably secured to a tubular member through which material is to pass and which is valved by the iris sleeve. The flexing of a ring will disengage the bearing surfaces of the rings for quick repair or replacement and the sleeve may be made integral with the rings and of the same material thus protecting the bearing surfaces.

3,371,907
FLEXIBLE BALL VALVE SEALS
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73129
Filed Sept. 27, 1965, Ser. No. 490,354
16 Claims. (Cl. 251—175)

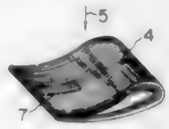


A ball valve having an annular seal in the downstream end of the valve chamber formed of an elastomer. The inner diameter of the seal is less than the diameter of the valve outlet, and the seal is anchored at its outer periphery in the valve chamber, whereby the seal is deflected into the outlet as the valve ball moves downstream to minimize the degree of contact between the valve ball and seal and minimize the force required to open and close the valve.

3,371,908
TURBINE BLADING COMPONENTS AND PROCESS OF PRODUCING THE SAME

Satoru Mito and Hiroshi Yoshida, Yokohama-shi, Satoshi Ote, Tokyo-to, and Kazumi Shimotori, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Denki Kabushiki Kaisha, Kanagawa-ken, Japan, a joint-stock company of Japan

Filed Nov. 1, 1966, Ser. No. 591,330
Claims priority, application Japan, Nov. 2, 1965, 40/66,922
3 Claims. (Cl. 253—77)

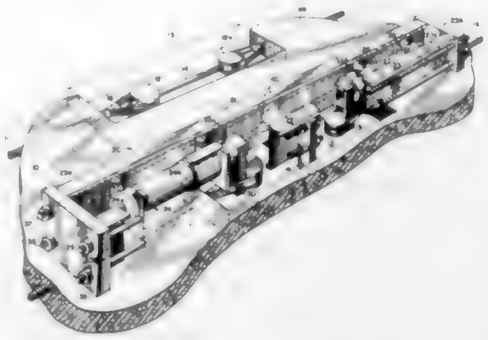


A turbine blade for use in a turbine having a fibrous crystalline structure on all of the working surfaces of its body sections no less than a fiberization of 10 and existing along an entire longitudinal axis of the blade. The fiberization is oriented in a direction, on the body of the blade, substantially parallel to a direction of flow of the operating or working fluid relative to the blade.

3,371,909
HYDRAULIC APPARATUS FOR APPLYING TENSION TO CABLES

Frederick M. Stinton, Glen Ellyn, Ill., assignor, by mesne assignments, to F. M. Stinton, Inc., Hinsdale, Ill., a corporation of Illinois

Filed Nov. 23, 1966, Ser. No. 596,579
10 Claims. (Cl. 254—29)



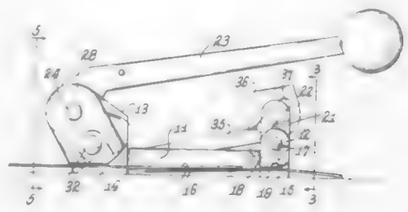
First and second hydraulic jacks are mounted within a rigid, unitary frame for applying a prestressing force to collinear cables embedded in concrete and extending into a common, central pocket in the concrete. Each of the jacks has a fixed component attached to the frame and a movable component adapted for opposing motion longitudinally of the cables that are to be tensioned. Each of the movable components is provided with means for engaging and holding its associated cable; and when the jacks are expanded, the movable components are forced in opposing motion thereby pulling the cables together and applying tension to each cable.

3,371,910
STRAP STRETCHING TOOL

Nicholas L. Johnen, 10664 Wakefield, Westchester, Ill. 60153

Filed Mar. 23, 1967, Ser. No. 625,551
10 Claims. (Cl. 254—79)

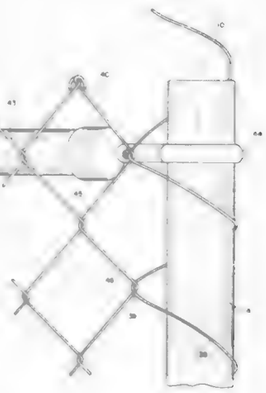
A strap stretching tool having a spaced pair of strap gripping elements operably connected to each other so as to be movable jointly or independently for releasing and gripping related ends of a strap and a hand operated lever to actuate one of the strap gripping elements to draw the strap taut about an object preliminary to final securement.



3,371,911
CHAIN LINK FABRIC FASTENER

Rudolph Edgar Parisien, Box 807, Montreal Road, R.R. 1, Ottawa, Ontario, Canada

Filed Apr. 4, 1966, Ser. No. 539,905
Claims priority, application Canada, Mar. 15, 1966, 954,746
2 Claims. (Cl. 256—47)

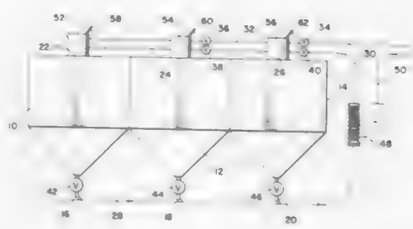


A fastener for securing chain link fence to a supporting post, the fastener being in the form of a helix, each coil of which has an extended portion to engage the mesh of the chain link fence. The fastener is inserted over the upper end of the post in the manner of a cork-screw while a free lower end is guided through successive adjacent meshes of the chain link fence.

3,371,912
RECIRCULATING PARTICULATE SOLIDS BLENDER

Lee F. Samler, Baltimore, and Evan V. Briggs, Millersville, Md., assignors to National Plastic Products Company, Inc., Odenton, Md., a corporation of Maryland

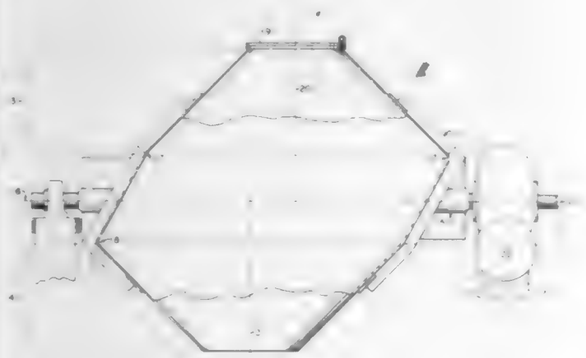
Filed Jan. 5, 1967, Ser. No. 607,542
7 Claims. (Cl. 259—4)



The present disclosure relates to a recirculating blender for particulate solids and, more particularly, to a system for the blending of particulate solids which has large capacity and versatility and is particularly useful in the

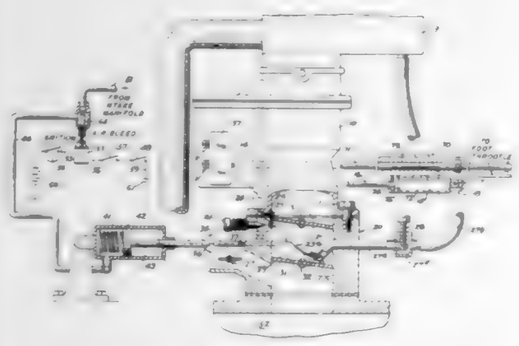
blending of plastic materials and additives, such as pigments, pigmented pellets, stabilizer and/or plasticizer concentrates. A blender having compartments in parallel is provided having recirculating conveying means so that solid particles can be recirculated from the bottom of all the compartments simultaneously to the top of one of the compartments along with fresh feed for a given period of time, and then shifted to the top of another compartment to provide sequential feeding to each compartment while there is provided simultaneous discharge from all compartments.

3,371,913
MIXER
John L. Muench, Sr., 8 Chestnut Place, Short Hills, N.J. 07078
Filed Feb. 14, 1967, Ser. No. 615,981
6 Claims. (Cl. 259—81)



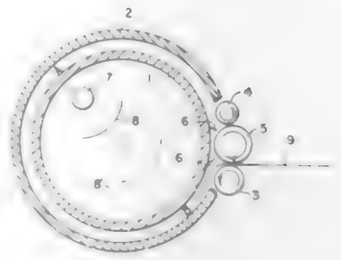
A mixer having a generally tubular middle section of its mixing chamber in non-perpendicular intersection with the horizontal axis of rotation of the mixing chamber.

3,371,914
FUEL FEED SYSTEM
Brooks Walker, 1280 Columbus Ave., San Francisco, Calif. 94133
Filed Mar. 20, 1967, Ser. No. 624,636
12 Claims. (Cl. 261—41)



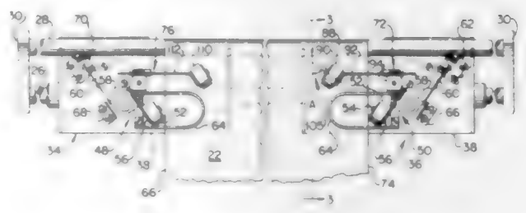
A carburetor having means for introducing a stream of rich fuel and air mixture and a stream of air into the induction conduit on the downstream side of the throttle valve, and means for mixing said streams below said valve and away from the wall of said conduit. A second valve is also provided downstream of said throttle valve and mixing means along with means to close said second valve and open an auxiliary air inlet valve during high speed decelerations.

3,371,915
TREATMENT MACHINE FOR HEAT TREATMENT OF SENSITIVE MATERIAL
Michio Kawamura and Katsuhisa Ueda, Tokyo, and Yoshizo Ikegami and Kuniomi Abe, Hyogo, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan, a corporation of Japan
Filed Aug. 12, 1966, Ser. No. 572,088
Claims priority, application Japan, Aug. 13, 1965, 40/49,111
1 Claim. (Cl. 263—6)



A heater for light sensitive material to be heat treated, having a nonrotatable drum. The surface of the drum is provided with an uneven temperature distribution by means of a heat source and a mirror within the drum.

3,371,916
AUTOMATIC TRACKING CONTROL APPARATUS FOR MAINTAINING ALIGNMENT OF A MOVING WEB
Walter J. Jaeger and Chester G. Jones, Kettering, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Sept. 3, 1965, Ser. No. 484,815
4 Claims. (Cl. 226—17)

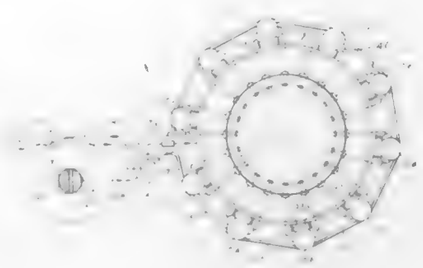


An automatic tracking control apparatus for maintaining alignment of a moving web which utilizes correction rollers having axes of rotation positioned at an acute angle relative to the intended direction of travel of the web, so as to shift the web laterally to restore it to the intended direction of travel. The apparatus also includes sensing rollers having axes of rotation positioned at an acute angle relative to the intended line of direction so as to detect lateral shifts in the web and to actuate the appropriate correction roller.

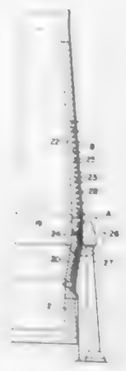
3,371,917
APPARATUS FOR FEEDING FUEL INTO A BLAST FURNACE
Lauritz E. Mylting, Ardmore, Pa., assignor to Buell Engineering Company, Inc., Lebanon, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 471,765, June 4, 1965. This application Oct. 21, 1965, Ser. No. 499,744
28 Claims. (Cl. 266—29)

1. Apparatus for feeding solid fuel into a blast furnace comprising means including feed pipes entering each of the tuyeres for continuously discharging gas streams under

pressure into the furnace through the tuyeres, means for varying the pressure of the gas stream in the feed pipe to each tuyere in accordance with the pressure in the furnace adjacent to that tuyere to maintain a substantially constant rate of gas flow through the feed pipes into the several tuyeres, and means for introducing solid fuel into the gas stream through each feed pipe at an individually controlled rate of introduction for each tuyere.



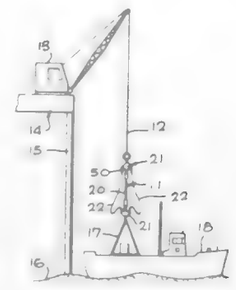
3,371,918
BLAST FURNACE CONSTRUCTION
Kumao Ueshima, Takayuki Imaida, and Hiroshi Nakasono, Kitakyushu, Japan assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan
Filed May 14, 1965, Ser. No. 455,526
Claims priority, application Japan, May 20, 1964, 39/28,073
4 Claims. (Cl. 266—43)



A blast furnace having a single continuous shell, a brick wall of uniform thickness above the tuyere and positioned within the shell, the brick wall being divided at the belly of the furnace into an upper and lower brick wall, a ring of plates on the inside of the shell at the line of division and supporting the load of the brick wall above the ring of plates, a plurality of supporting members fixed to the external surface of the shell at the belly along the periphery of the shell, and supporting means supporting said members.

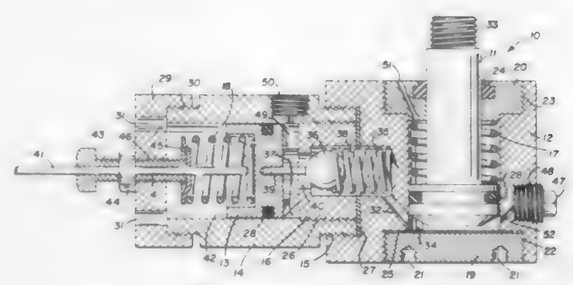
3,371,919
LOAD ABSORBING SNUBBING DEVICE
Burt S. Minor, La Habra, Calif., and James Newton, Lafayette, La., assignors to Bettis Rubber Company, Whittier, Calif., a corporation of California
Filed Nov. 24, 1965, Ser. No. 509,500
6 Claims. (Cl. 267—73)

The application discloses a load absorber device having a pair of hanger assemblies adapted to be connected in a line or cable, a plurality of elongated elastic tension members connected between the hanger assemblies and



flexible snubber members connected between the hanger assemblies.

3,371,920
WORKPIECE ENGAGING AND SUPPORTING DEVICE
Richard J. Shea, Spring Valley, Calif., assignor to Rohr Corporation, Chula Vista, Calif., a corporation of California
Filed June 10, 1965, Ser. No. 462,830
1 Claim. (Cl. 269—23)

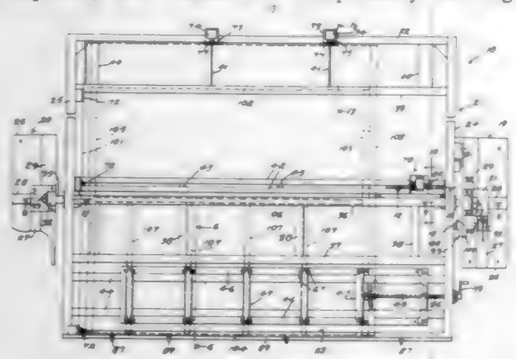


A workpiece support responds to hydraulic pressure sufficient to cause the same to move and engage the workpiece but insufficient to lift it. Once engaged, the hydraulic pressure is permitted to build up in accordance with a predetermined loading of the workpiece on the support. This pressure buildup closes a valve for preventing release of the hydraulic fluid which then becomes the means of support for the workpiece. If the workpiece is displaced away from a previous position, the hydraulic fluid displaces the workpiece support correspondingly to provide continuous engagement with the workpiece. When the workpiece is removed, the valve is released draining the entrapped fluid and permitting removal of the support device from the workpiece.

3,371,921
MACHINE FOR ASSEMBLING WINDOW AND DOOR FRAMES
Frank A. Hollomon, Silver Spring, Md., and Kenneth H. Pizer, Morton, Pa., assignors, by mesne assignments, to Hydro-Air Engineering, Inc., St. Louis, Mo., a corporation of Missouri
Filed Oct. 22, 1965, Ser. No. 501,266
8 Claims. (Cl. 269—25)

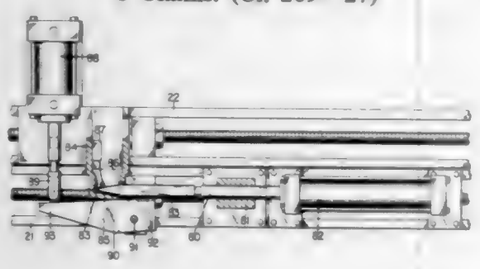
1. A frame assemblying machine comprising a table top of open work construction adapted to support elements constituting the parts of a window or door frame including cripples, adjustable cripple locator means mounted in and forming a part of said table top for supporting the cripples and including a plurality of aligned pairs

of upright locator elements between which the cripples are disposed, and means for reciprocally moving said



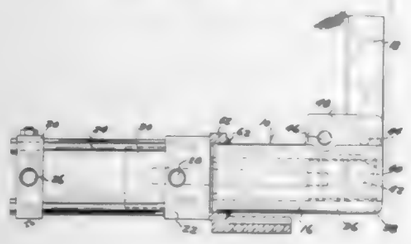
cripple locator means relative to the table top for varying the positions of said locator elements and the cripples engaged thereby relative to the table top.

3,371,922
ADJUSTABLE CLAMP MECHANISM FOR MOLDING FRAMEWORK
Jose R. Puente, Rochester, N.Y., assignor to Leaming Plastics, Inc., Canandaigua, N.Y.
Original application Feb. 5, 1965, Ser. No. 430,638, now Patent No. 3,287,765, dated Nov. 29, 1966. Divided and this application June 30, 1966, Ser. No. 561,913
6 Claims. (Cl. 269—27)



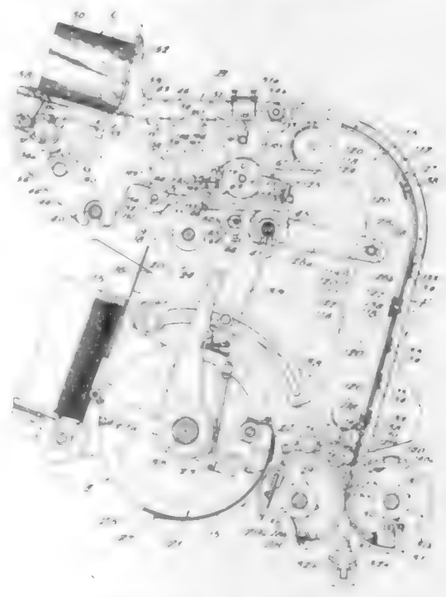
A latching mechanism for closing two elements from an ajar position uses a movable latch bar on one element, a latch receiver on the other element, a lever mounted on the latch receiving element, and a powered lever arranged on one of the elements for levering against the latch to force the elements closed. The latch and its receiver are surfaced to cam the elements together as the latch is slid home, and the latch and lever are powered pneumatically. The arrangement is useful in closing normally ajar frames for holding sheets of material for molding operations.

3,371,923
MOUNT FOR CYLINDER OPERATED POWER CLAMP
Leland F. Blatt, Grosse Pointe Woods, Mich. (24121 Mound Road, Warren, Mich. 48091)
Filed Aug. 17, 1965, Ser. No. 480,372
4 Claims. (Cl. 269—32)



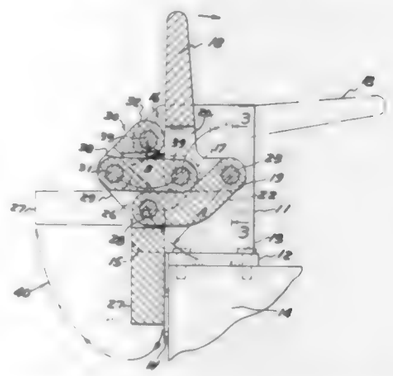
A cylinder operated power clamp system and a mounting means therefor, the system including aligned first and second cylinders with their respective pistons interconnected, and a clamp actuated by said pistons; a mounting means including a base leg and an upright mounting leg, the latter having a bore receiving and supporting one cylinder, and a plurality of threaded holes to receive tie rods to secure the other cylinder thereto; said cylinders adapted for independent angular adjustment relative to said mounting leg.

3,371,924
APPARATUS FOR TIPPING INSERTS INTO A SADDLE STITCHED BOOK
Earle A. Nelson, Park Forest, and Louis Kostal, Lombard, Ill., assignors to R. R. Donnelley & Sons Company, a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 532,334
10 Claims. (Cl. 270—53)



Insert tipping apparatus for a signature feeding station of the type wherein a signature is opened by cooperating feed rollers and dropped on the saddle. A glue carrying insert is timely fed into the rollers in association with the signature, whereby the rollers press the insert onto the signature.

3,371,925
TOGGLE CLAMP WITH UNUSUAL RISING ACTION
Leland F. Blatt and Paul R. Williams, Grosse Pointe Woods, Mich., assignors to I. S. I. Manufacturing, Inc., Warren, Mich.
Filed Aug. 4, 1965, Ser. No. 477,271
4 Claims. (Cl. 269—91)



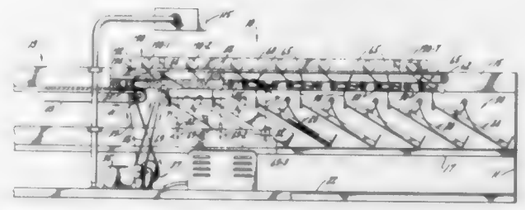
A toggle clamp with handle on a first pivot and work securing arm, with spaced portions thereof, each pivotally mounted through separately located pivotal links connected to pivot through different arcs, to constrain pivotal

movements of said arm to a resultant path in a relatively confined area, and with a third link interconnecting said arm and handle for effecting opening and closing movements of said arm on opening and closing movements of said handle.

ERRATUM

For Class 270—53 see:
Patent No. 3,371,924

3,371,926
DOCUMENT SORTING AND DISTRIBUTING SORTER APPARATUS
Eugene A. Anderson, 414 W. Taylor Road, Lombard, Ill., 60148, and Alfred Anderson, 460 S. York St., Elmhurst, Ill. 60126
Filed Oct. 24, 1965, Ser. No. 504,552
7 Claims. (Cl. 271—52)



1. Apparatus for receiving, automatically sorting and depositing documents directly from a source comprising, in combination, a receiving platform adapted to align documents placed thereon in a single file and feed the so aligned documents for sorting and depositing; an elongated sorting and depositing deck adjacent said receiving platform so as to receive documents therefrom, said deck having a plurality of normally closed gates, each defining the entrance to a bin for segregating documents, means for automatically opening a particular gate to receive a predetermined number of documents, means disposed near the entrance to each bin and connected with each said gate for counting documents passed therethrough and for closing said gate when the proper number of documents have so passed, and means for moving said documents in a single file along said deck to an open gate.

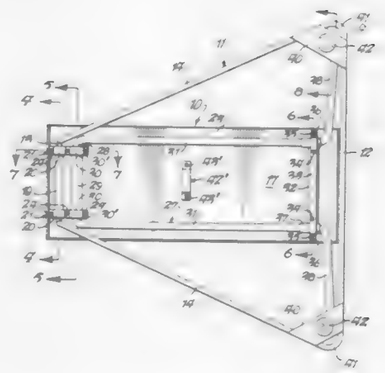
ERRATUM

For Class 271—74 see:
Patent No. 3,371,929

3,371,927
JUMPING DEVICE TOY
John W. Ryan, Bel Air, and Warren Dale Kabot, Manhattan Beach, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Aug. 25, 1965, Ser. No. 482,561
5 Claims. (Cl. 272—57)

A jumping device having an upright staff provided with stirrups or steps on which a rider can stand while grasping the upper end of the staff, and a lower ground engaging end. Ground engaging leg means, having laterally spaced ground engaging portions, are pivoted to the staff and a block of rubber-like material is secured to the leg means and the staff, to be distorted in shear upon relative pivotal movement between leg means and staff, to yieldably bias the former to a predetermined position.

3,371,928
SPRINGBOARD
Charles W. Buddo, 2 Blythdale Road, Toronto, Ontario, Canada
Filed Nov. 4, 1963, Ser. No. 321,011
3 Claims. (Cl. 272—66)

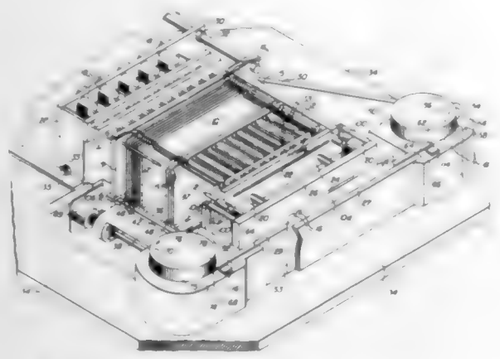


3. A free standing springboard comprising a unitary rod-like frame having first and second ends connected by connecting leg portions, an elongated platform having opposite sides and first and second ends with said second end of said platform being located proximate said second end of said frame and with said opposite sides lying inwardly of said connecting leg portions of said frame, means connecting said first end of said platform to said first end of said frame for pivotal movement thereabout with said first end of said frame and said first end of said platform being substantially coextensive, elongated spring means connected to the undersurface of said platform and having downwardly inclined laterally extending leg portions with outer ends extending outwardly beyond said opposite sides of said platform toward said connecting leg portions at said second end of said platform with said second end of said frame extending laterally outwardly beyond said sides of said platform at said second end thereof, and plate means secured to said frame proximate the junction of said second end and said connecting leg portions for slidingly supporting said outer ends of said elongated spring means.

3,371,929
RECORD PROCESSING APPARATUS
Michael S. Shebanow, Medfield, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 13, 1965, Ser. No. 471,579
18 Claims. (Cl. 271—74)

Apparatus for returning selected record cards to their normal, randomly accessible storage location, suspended above a reference plane. The mechanism includes a plate having a plurality of holes through which vacuum pressure is applied. A selected card travels in edgewise contact with the reference plane and covers up successive holes of the plate as it arrives at the latter. The applied vacuum pressure is effective to arrest the card at a predetermined point on the plate. The plate is capable of lifting the card

in a direction substantially normal to the direction of the card travel, to a position where an aperture in the plate comes into registry with card removal means. The latter



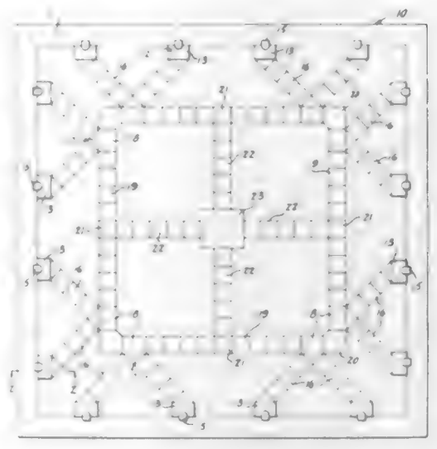
is operative from the rear of the plate to return the card to its storage location in a direction substantially normal to both the direction of card travel and the direction of card lift.

3,371,930
EXTENSIBLE NIGHT STICK
Yoshio Shiga, 128 2-chome, Nakamachi Nerima-ku, Tokyo-to, Japan
Filed Oct. 6, 1965, Ser. No. 493,325
1 Claim. (Cl. 273—84)

The present invention relates to a night stick, and more particularly to an extensible night stick convenient for a policeman to carry and use for self-defense.

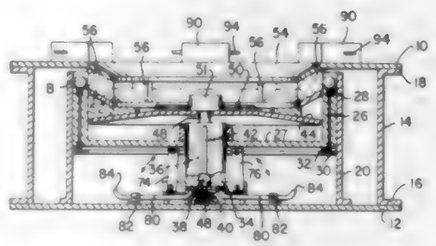
3,371,931
GAME BOARD HAVING PLURAL PATHS AND TOKEN-RECEIVING POCKETS
Robert Carlton Saunders, Rte. 7, Box 519, Roanoke, Va. 24015
Filed May 17, 1965, Ser. No. 456,203
4 Claims. (Cl. 273—134)

A game board bounded by a plurality of side edges and having a playing surface including indicia defining paths over which playing pieces are moved, and wherein pockets are formed in the board, the pockets having ends opening into the playing surface and being adapted to selectively receive a token game piece therein; each pocket being positioned intermediate an edge of the board and a terminal end of selected ones of the paths, and each pocket having a hinged closure member extending across its open end and being secured to the board, the closure members be-



ing movable to conceal or expose a token disposed in its associated pocket.

3,371,932
RANDOM MIXING AND DISPENSING AMUSEMENT DEVICE
Edmund J. Kranz, 1426 Buckingham, Toledo, Ohio 43607
Filed Mar. 17, 1965, Ser. No. 440,360
6 Claims. (Cl. 273—144)

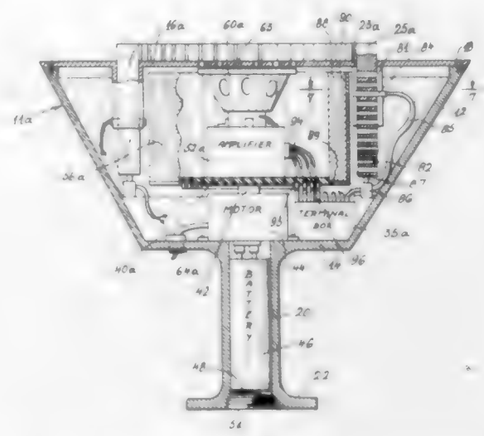


An amusement device having a plurality of spherical playing pieces supported on an annular supporting member and a plurality of sets of playing piece propelling means for forcing selective ones of the playing pieces off of the supporting member to a visible position. Typically, the playing pieces are provided with indicia of a conventional deck of playing cards.

3,371,933
SOUND PRODUCING DEVICE
Dorothea M. Weitzner, 8 E. 62nd St., New York, N.Y. 10021
Filed Oct. 19, 1965, Ser. No. 497,776
3 Claims. (Cl. 274—1)

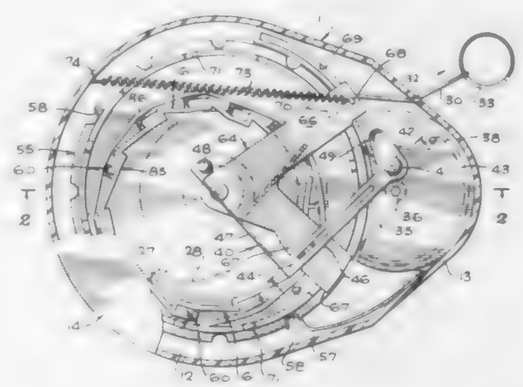
The disclosure describes a sound producing device in the form of a compact unit which can be stood on a table. Inside a casing is a rotatable drum carrying magnetic tracks around its periphery. Elongated push-buttons exposed at the top of the casing are movable inside the casing to close switches connected in circuit with mag-

netic pick-up heads carried by the push-buttons in selected bores spaced longitudinally of the push-buttons. A loud-



speaker inside the drum projects sound upwardly through the apertured top of the casing.

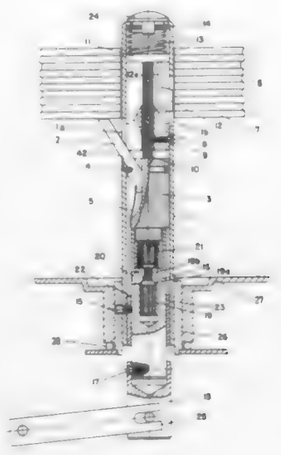
3,371,934
PHONOGRAPH DEVICE
Golda A. Duncan, North Hollywood, and Robert N. Aleson, Sylmar, Calif., assignors, by direct and mesne assignments, to Lorraine Industries, Inc., Bridgeport, Conn.
Filed Feb. 28, 1966, Ser. No. 530,588
13 Claims. (Cl. 274—1)



The application discloses means in a mechanical phonograph device for playing sections of a phonograph record in predetermined sequence upon successive operations of the device. The means includes an apertured control disk over the record through which the needle extends, a means for advancing the disk each time the device is operated, and a means for limiting each operating cycle.

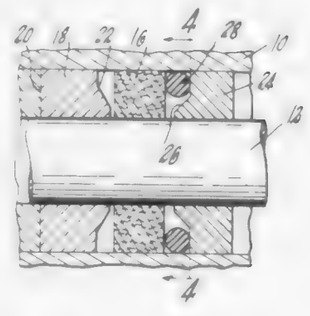
3,371,935
STACKING ARBOR FOR AUTOMATIC RECORD CHANGERS
Richard Kieninger, St. Georgen, Black Forest, Germany, assignor to Perpetuum-Ebner Fabrik fuer Feinmechanik und Elektrotechnik Steidinger & Co. Kom. Ges., St. Georgen, Black Forest, Germany
Filed Oct. 18, 1966, Ser. No. 587,483
Claims priority, application Germany, Oct. 21, 1965, P 37,928
10 Claims. (Cl. 274—10)

A stacking arbor for an automatic record changer having clamping and supporting members movable radially and vertically relative to each other which are operated by control means located in the stacking arbor and movable between two end positions by the control mechanism of the record changer, and locking means which in the absence of any record on the stacking arbor are moved



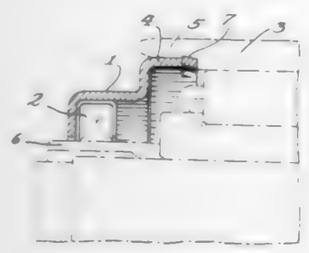
to a locking position in which the control means are locked in one of the end positions thereof to initiate stopping of the record changer.

3,371,936
HIGH PRESSURE PACKING
Alfred J. Beaudette, Wrentham, Mass., assignor to Harwood Engineering Co., Walpole, Mass., a corporation of Massachusetts
Filed Mar. 31, 1965, Ser. No. 444,146
2 Claims. (Cl. 277—117)



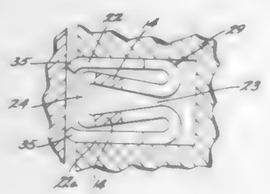
The disclosure of the invention comprises a packing for a high pressure cylinder unit interposed between the cylinder and piston walls including an annular leather packing, ring type headers of a hard non-yielding material having leather packing confining faces supporting each of the downstream and upstream sides of said leather packing, each said header having the leather packing confining face thereof extending between the cylinder and piston walls sloped inwardly toward the opposing header, said leather packing being conformed to provide a relatively short section of said leather packing engaging said piston peripheral surface and a substantially longer external surface engaging the internal peripheral surface of said cylinder, and an O-ring confined between the upstream face of said leather packing, the outer portion only of the leather packing confining face of the adjacent header and said internal peripheral surface of said cylinder, spring means interposed between said cylinder and piston walls at the upstream side of said packing for maintaining an initial pressure against said upstream header, O-ring, and leather packing, and shoulders on the internal surface of said cylinder engaging respectively the downstream header and said spring at the upstream side of the packing confining the packing assembly therebetween.

3,371,937
SEALING DEVICE FOR BEARINGS
Osamu Maeda, Nishiku, Osaka, Japan, assignor to Toyo Bearing Manufacturing Company Limited
Filed June 7, 1965, Ser. No. 461,899
Claims priority, application Japan, Mar. 20, 1965, 40/16,394
4 Claims. (Cl. 277—189)



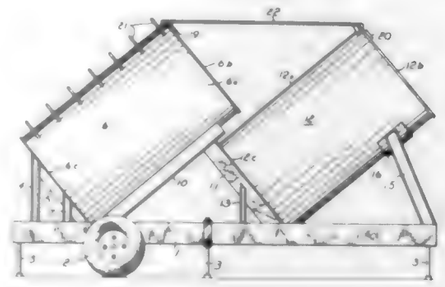
A bearing assembly for a railway car truck is shown with an outer race having a counterbore provided with an endless groove to releasably receive a seal casing having a cylindrical section for interference fit within the counterbore. The seal casing has a set of integral tongue portions in partly severed relation thereon and projecting in outwardly inclined relation at circumferentially spaced locations to confront endwise against the shoulder for resisting axial extraction of the seal casing from the outer race, the tongues being resiliently inwardly deflectable in response to an axial retraction force that is determined by the amount of projection of the tongues. In another embodiment, a second set of integral tongues are provided in alternating axially spaced relation to the first set and of lesser projection to provide the aforementioned interference fit with the counterbore.

3,371,938
PISTON RINGS
Douglas W. Hamm and Kenneth J. Nisper, Muskegon, Mich., assignors to Muskegon Piston Ring Company, Muskegon, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 426,573, Jan. 19, 1965. This application Aug. 16, 1965, Ser. No. 482,028
8 Claims. (Cl. 277—200)



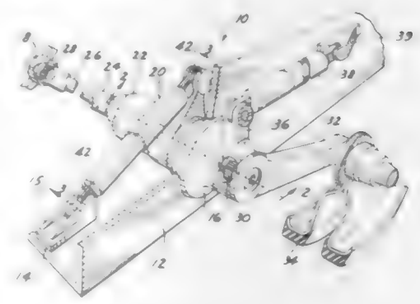
A one-piece piston ring having sides consisting of a plurality of independent segments joined to each other only through the central body portion of the ring. The central body portion consists of struts, each of which has a pair of straps integral with a different segment. The struts are bent into an outwardly extending loop projecting generally to the outer face of the ring with the sides of the loop generally parallel to the plane of the segments. The two straps forming each strut are joined by a circumferentially extending tie bar which is arranged with the greater of its cross-sectional dimensions lying in the plane of the sides of the loop. The preceding description is not to be construed as a limitation upon the scope of the invention.

3,371,939
MOBILE BULK MATERIAL HANDLER
August G. Welk, Spokane, Wash., assignor to Welk Brothers Metal Products, Inc., Spokane, Wash., a corporation of Washington
Filed Apr. 11, 1966, Ser. No. 541,695
3 Claims. (Cl. 280—5)



1. A portable tank assembly for handling bulk materials comprising:
a frame having supporting wheels and pedestals for transporting the assembly supporting it at selected locations;
a plurality of cylindrical tanks on the frame arranged in inclined overlapping relationship to each other, each tank having all of its walls inclined to the horizontal at least 38 degrees;
supports on the frame extending up to the tanks and joined to the ends and the sides thereof;
a filling inlet to each tank at the top thereof; and
an outlet valve at the bottom of each tank.

3,371,940
VEHICLE VARIABLE HEIGHT SUSPENSION SYSTEMS
Alex H. Sinclair, Southfield, and Ted Kozowyk, Detroit, Mich., assignors to the United States of America as represented by the Secretary of the Army
Filed June 15, 1966, Ser. No. 559,045
4 Claims. (Cl. 280—43.23)

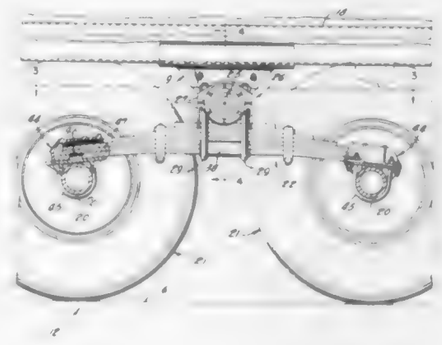


An apparatus for actuating and controlling the variable ground clearance of tracked or wheeled vehicles, comprising an hydraulically actuated road arm.

3,371,941
AXLE ASSEMBLY FOR DUMP TRUCKS
L. V. Preddy, Jr., Dallas, Tex., assignor to Dye Trucking Company, Dallas, Tex., a corporation of Texas
Filed June 13, 1966, Ser. No. 557,232
8 Claims. (Cl. 280—104.5)

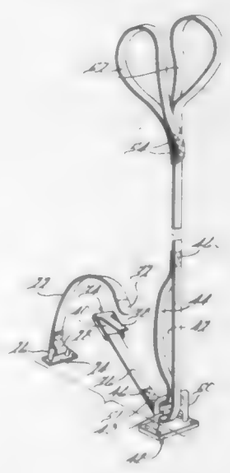
1. In a vehicle having a body and having a dual axle wheel unit, the combination of a wheel unit including a pair of axles arranged in tandem relation to each other, a pair of leaf spring units extending across the top sides of said axles and having their opposite ends connected thereto, respectively, and a trunnion shaft supporting said body for rocking movement about a transverse axis

and having its opposite end portions journaled in bearings therefor clamped to the top sides of said spring units intermediate their ends, said bearings each including a pair of semi-cylindrical clamping members loosely encircling the adjacent end of the trunnion shaft and having means clamping them together, and to the corresponding spring unit, a metal sleeve immediately surrounding said end portion of the shaft and providing a bearing for rotative adjustment of the shaft relative thereto, and a



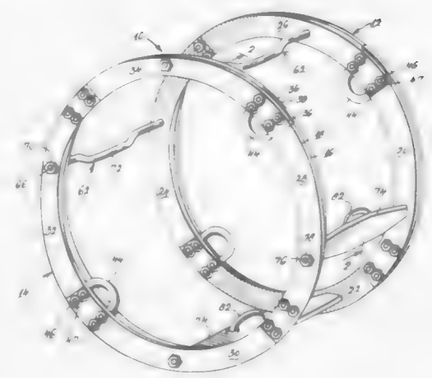
yieldable cylindrical element, formed of molded resilient material, immediately surrounding the sleeve and positioned between the sleeve and said clamping members said cylindrical element having an outside diameter greater than the inside diameter of the clamping members and frictionally engaging said sleeve and said clamping members and means in said end portions of said trunnion shaft communicating with the inside of said sleeves for lubricating said sleeves and the opposing surfaces of said shaft.

3,371,942
COMBINATION SEAT BELT AND UPPER TORSO RESTRAINT
Vincent A. Buck, Huntington Woods, and Edmund G. Nagle, Bloomfield Hills, Mich., assignors to Allen Industries, Inc., a corporation of Delaware
Filed Sept. 1, 1966, Ser. No. 576,667
7 Claims. (Cl. 280—150)



1. A combination seat belt and upper torso restraint for an occupant of a seat of a vehicle, the seat including a seat back and a seat proper mounted on the vehicle framework comprising first anchoring means on the vehicle framework, first strap means connected to said first anchoring means and adapted to extend upwardly and over the waist region of an occupant, second anchoring means on the vehicle framework, second strap means formed with loop means disposed intermediate of the ends thereof, said loop means engageably connected to said second anchoring means and providing relative longitudinal movement of said second strap means between a first stop position and a second stop position spaced therefrom as defined by the length of said loop means, one end portion of said second strap means adapted to extend upwardly and rearwardly of the seat back and forwardly adjacent the upper edge thereof and formed with engaging means for engaging an occupant's upper torso, the other end portion of said second strap means adapted to extend forwardly around an occupant's waist region and further including coacting means thereon for engaging mutual coacting means on the end portion of said first strap means for adjustably tensioning said first and said second strap means.

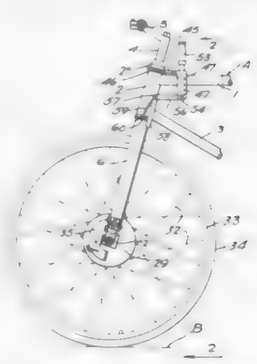
3,371,943
COLLAPSIBLE TUMBLING WHEEL
Herman F. Turgetto, 57—23 Catalpa Ave., Ridgewood, N.Y. 11227
Filed Mar. 9, 1966, Ser. No. 533,076
5 Claims. (Cl. 280—206)



This invention relates generally to certain new and useful improvements in an occupant-propelled tumbling and rolling apparatus through the medium of which the occupant is given exercise.

The apparatus has an open-work frame or wheel characterized by a pair of coplanar axially aligned hoops or rings, means for joining the rings rigidly together and means in the space between the hoops for accommodating the occupant in a stretched position.

3,371,944
VARIABLE AXIS CENTER WHEEL
James W. Daniels, Rte. 3, Box 200W, Tallahassee, Fla. 32301
Filed Apr. 8, 1966, Ser. No. 541,208
8 Claims. (Cl. 280—229)



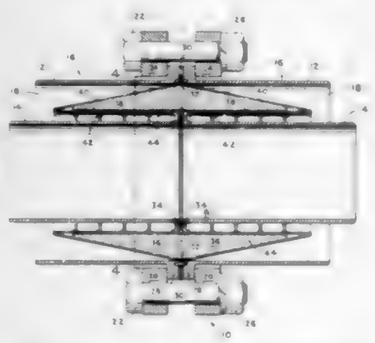
1. A variable axis center wheel comprising a wheel rim, an axle, a tubular axle housing rotatably supported on and having said axle extending therethrough, a hub

having a pair of spaced apart side walls, means connecting said hub to said wheel rim, both of said hub side walls having a straight edged opening therethrough, said axle housing having straight recesses in both ends thereof with said hub side wall edges slideably positioned therein, a locking trip plate pivotally mounted on one of said hub side walls and having a tooth, said axle housing having side slots each capable of receiving said locking trip tooth therein for retaining said axle housing at a given position relative to said hub, said locking trip plate having a pair of lateral flanges, operable means capable of engaging one of said locking trip plate flanges as desired to pivot said locking trip plate disengaging said tooth from one of said axle housing side slots at a time and resilient means tending to retain said tooth in one of said axle housing side slots at a time.

3,371,945
ADJUSTABLE LIFT LINK
Kenneth C. Adams and Gerald W. Bernhoft, Wauwatosa, Wis., assignors to Allis-Chalmers Manufacturing Company, Wauwatosa, Wis.
Filed June 6, 1966, Ser. No. 555,602
4 Claims. (Cl. 280—461)

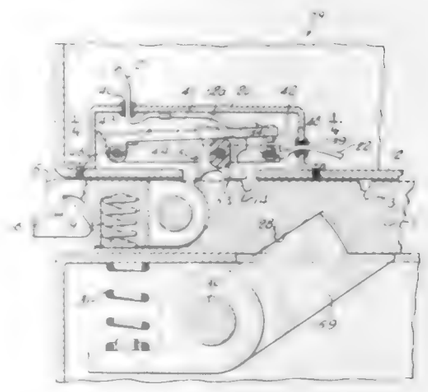
An adjustable lift link for use with hitching devices on a tractor.

3,371,946
CRYOGENIC COUPLING
Gustave A. Bleyle, Jr., 6 Russet Lane, Lynnfield, Mass. 01940; Arthur Sullivan, 15317 DePauw St., Pacific Palisades, Calif. 90272; Ross D. Randall, Pukham Hill Road, Sherborn, Mass. 01770; and Henry W. Boger, 67 Woodland Road, Westwood, Mass. 02090
Filed Nov. 2, 1965, Ser. No. 506,029
11 Claims. (Cl. 285—47)



A cryogenic coupling for double-walled vacuum insulated cryogenic conduits in which the inner seal for the inner conduit includes a spacing ring thicker than the outer seal spacing ring to prestress a bellows member operative to mechanically space the inner conduit from the outer conduit. The inner seal is a one-way seal, acting against pressures within the inner conduit, and will allow pressure built up in the space between mated coupling members (each having a bellows member) to be released into the inner conduit. Additionally, an annular seal spacer is designed to be placed on one of the mating coupling members to hold the spacer in place while mating the couplings. Further, an insulating member conforming to the contour of the opposed bellows members forming the mating coupling members is utilized, which insulating member is a one piece unitary fiberglass insulator having its fibers oriented circumferentially with respect to the axis of the coupling and which is coated with a porous material to allow gases to pass through the insulator and thus allow gases into the spaces between the interstices of the glass fibers.

3,371,947
SAFETY LOCK
James Robert Gridley, 2 Drawbridge Drive, Albany, N.Y. 12203
Filed Feb. 4, 1966, Ser. No. 525,158
8 Claims. (Cl. 292—144)

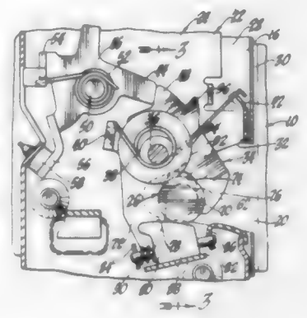


1. A door locking mechanism comprising in combination a housing, a bolt slidably mounted in said housing and having a plurality of grooves in one surface thereof, switch means comprising a pair of contact points, a pair of hinged contact point supporting members, ratchet cam means rotatably mounted on one of said contact point-supporting members and in operative contact with the grooved surface of said bolt and electro-mechanical means controlled by said switch means for exerting a pull on said bolt.

3,371,948
CLOSURE LATCH
Alfonsas Velavicius, Dutroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 9, 1966, Ser. No. 526,092
4 Claims. (Cl. 292—216)

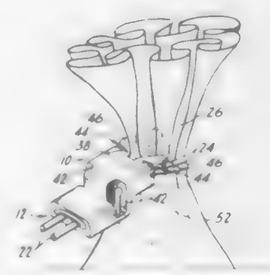
A door lock includes a latch frame and a fork type bolt is pivotally mounted on this frame by a pivot stud for movement between latched, unlatched and intermediate latched positions. A coil torsion spring surrounds the pivot stud and is interconnected between the latch bolt and the frame to bias the bolt to unlatched position. A releasable detent is engageable with either one of two shoulders of the bolt to retain the bolt in latched or intermediate latched positions.

A striker pin includes a shank and an unlatched flanged head. When the bolt is in either latched position, the shank of the striker is received within the bolt throat and the flanged head of the striker is engaged by both a spring biased wedge and a torus of mechanical rubber



to locate the shank of the striker within the bolt throat. The torus is supported by the coils of the torsion spring which surround the bolt pivot.

3,371,949
BAG SEAL INCLUDING A UNITARY, DEFORMABLE SEALING ELEMENT WITH DEFORMABLE BAG GRIPPING ARMS
Winfred M. Brooks, West Orange, and Sigurd M. Moberg, East Orange, N.J., assignors to E. J. Brooks Company, Newark, N.J., a corporation of New Jersey
Filed Sept. 1, 1966, Ser. No. 576,684
4 Claims. (Cl. 292—308)



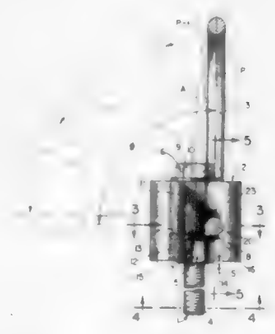
A bag sealing device comprising a cord which extends through passages in the body portion of a lead block providing a loop portion engageable about a bag neck or the like; the block having inelastic integral spaced fingers in side by side relationship for disposition at opposite sides of the bag neck, and having opposed gripping surfaces to engage the neck of the bag therebetween. When the loop portion is tightened the bag neck is forcefully wedged between the surfaces causing the fingers to bend away from each other, and tangentially engage adjacent parts of the bag neck and to hold the bag neck tightly between the fingers.

3,371,950
TENNIS BALL RETRIEVER AND STORAGE UNIT
Jacob Stap, 542 Elm St., Deerfield, Ill. 60015
Filed Aug. 3, 1966, Ser. No. 570,013
7 Claims. (Cl. 294—15)

A device for retrieving a multiplicity or a single tennis ball from a tennis court playing surface, which device automatically stores a multiplicity of tennis balls, characterized by a receptacle having a grate in its bottom of relatively rigid bars spaced apart slightly less than the diameter of a used tennis ball so that the receptacle may be placed over the balls resting on a court and pushed downwardly on the court surface automatically squeezing the balls into the receptacle, raising balls already in the receptacle thereabove and retaining all of the retrieved balls in the receptacle until manually poured or removed

from the open upper end of the receptacle; in preferred form, there being a handle above the receptacle for manipulation by a person standing upright on the playing surface.

3,371,951
MATERIAL HANDLING FITTINGS
John G. Bryant, 15 Ridgewood Road, Radnor, Pa. 19087
Continuation of application Ser. No. 479,796, Aug. 16, 1965. This application Dec. 19, 1966, Ser. No. 611,510
8 Claims. (Cl. 294—82)

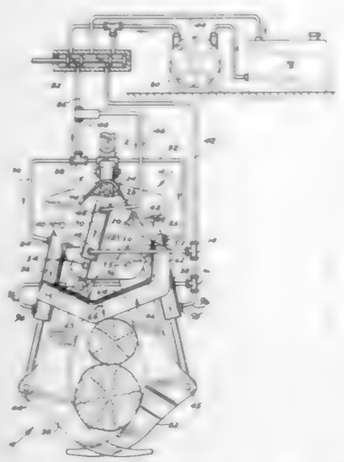


A materials handling fitting including a rotatable eye and a ring-like means on the eye and movable with respect thereto, the eye and the ring-like means cooperating whereby the fitting is aligned with respect to the loading and the lifting means to maximize the use of the tensile and compressive characteristics of the metal comprising the fitting.

3,371,952
LOG GRAPPLE WITH GRIPPER MEANS
Richard H. Hunger, Ashland, Wis., assignor to Beloit Corporation, Beloit, Wis. a corporation of Wisconsin
Filed Oct. 24, 1965, Ser. No. 504,553
10 Claims. (Cl. 294—88)

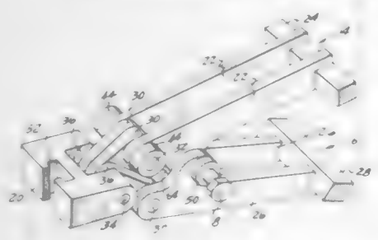
Log grappling apparatus having a pair of coopertaing jaws pivotally connected to a supporting head, and hydraulically actuated between a spread apart position and a log grapple position. A hydraulically actuated gripper arm is mounted on the head and has a pair of angled portions whereby a force is applied to the logs toward

the opening end of the jaws regardless of the number of logs between the jaws. A hydraulic circuit actuates



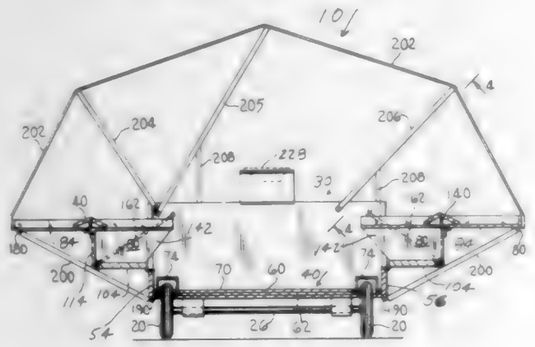
the gripper arm to apply a force to the logs after the jaws are in the log grapple position.

3,371,953
GRIPPER
Leland F. Blatt, Grosse Pointe, Mich. (24121 Mound Road, Warren, Mich. 48091)
Continuation-in-part of application Ser. No. 550,193, May 16, 1966. This application Mar. 16, 1967, Ser. No. 623,668
5 Claims. (Cl. 294—88)



A power cylinder-operated heavy duty jaw-type gripper is constructed to withstand and apply extremely high gripping forces by the provision of a rigid compact mechanism which is fully supported in all directions to substantially reduce stresses and deflections.

3,371,954
CAMPING TRAILER
Ivar F. Larsson, 198 Long Hill Road, Oakland, N.J. 07436
Filed Jan. 12, 1966, Ser. No. 520,271
4 Claims. (Cl. 296—23)

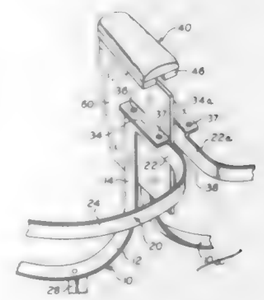


The disclosure is of a camping trailer which includes the usual body including a floor, front and rear walls, and two side walls. A folding bed assembly, comprising first and second beds, is built into a hinged panel in each side wall in such a way that the beds are completely inside the trailer when they are closed, and they open sideways when they are to be used. In each bed assembly, the first bed is built on the hinged panel in each side wall of the trailer as a base and has a mattress floor spaced from the side wall panel to provide a first storage space therebetween. The second bed is hinged to the first and includes a mattress floor which is spaced from the mattress floor of the first bed when the bed assembly is closed, to provide a second storage space therebetween.

3,371,955
SAFETY SHADE
Jeff M. Herrington, Sr., 1724 E. Brainard St., Pensacola, Fla. 32503
Filed Oct. 19, 1965, Ser. No. 497,804
13 Claims. (Cl. 296—97)

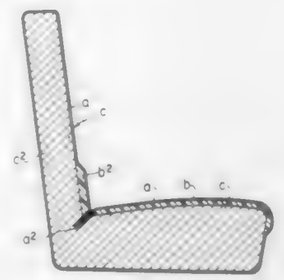
An adjustable light shielding structure for installation in the interior of a vehicle is provided which possesses improved shading capabilities without the concomitant interference with the comfort of a driver or passenger in other respects, particularly during summer driving. The adjustable and substantially continuous safety shade comprises a central visor, an outer auxiliary visor possessing articulated panels, hinges for pivotally connecting the outer auxiliary visor adjacent the outer extremity of the central visor and the adjoining articulated panels to each other, and means adapted for connecting the central visor to a vehicle.

3,371,956
CHAIR-TABLET ARM CONSTRUCTION
John Wilberforce Noel Jordan, Sheerness, Kent, England, and James J. Chierchiaro, Easton, Pa., assignors to J. G. Furniture Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 28, 1966, Ser. No. 590,413
11 Claims. (Cl. 297—162)



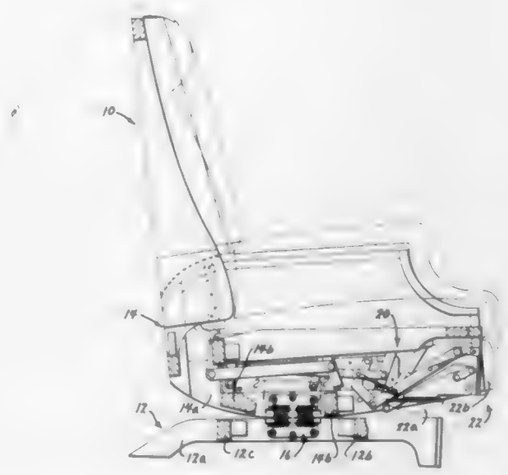
An arm rest and writing tablet assembly for disposition between the frames of two adjacent chairs, the assembly comprising means for securing it to at least one of the chairs, hinge means for pivotally mounting a movable arm rest or cover about a transverse axis, and hinge means on the bottom of the cover and extending longitudinally thereof for pivotally mounting a writing tablet on the bottom of the cover in a position to move in between the two chair frames when the cover is in covering relation therewith.

3,371,957
LOOSE COVERS FOR SEATS AND THE LIKE
Alexander J. Cook, Oldham, England, assignor to Medlock Manufacturing Company Limited, Oldham, England, a company of Great Britain
Filed June 14, 1966, Ser. No. 557,528
Claims priority, application Great Britain, June 17, 1965, 25,780/65
1 Claim. (Cl. 297—219)



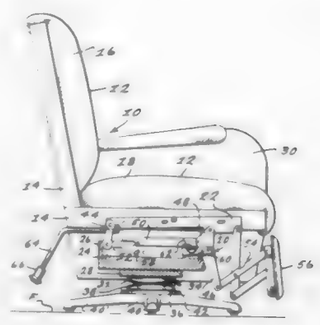
A loose cover especially for automobile and like seats comprises an envelope for stretchable textile material capable of fitting over the seat and back portions of different size seat assemblies and having a pad of foamed plastic bonded to the underside of the envelope overlying said seat portion to non-slidably grip the seat portion while the remainder of the envelope is free to stretch and slide on the assembly in accord with driver movements and the like. Where the seat assembly is an arm chair, non-slip pads are bonded to the envelope overlying the arms.

3,371,958
COMBINATION RECLINING AND ROCKING CHAIR
Daniel F. Caldemeyer, Vanderburgh County, and Lloyd O. Caldemeyer, James B. Mosier and John T. Gates, Evansville, Ind.; said Mosier and said Gates assignors to National Furniture Manufacturing Co., Inc., Evansville, Ind., a corporation of Indiana
Filed Aug. 10, 1965, Ser. No. 478,568
4 Claims. (Cl. 297—269)



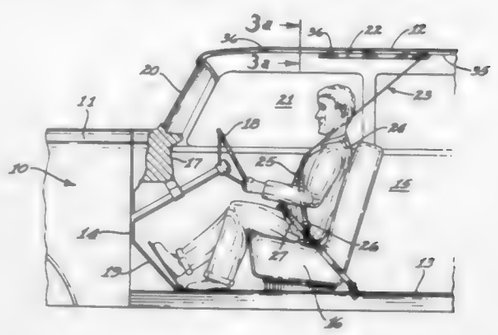
A combination reclining and rocking chair characterized by a movable seat and back carrying frame portion having side members directly mounted on the side members of a fixed base frame portion and including a concealable foot rest arrangement which permits high-legged styling.

3,371,959
STOP MEANS FOR A RECLINER CHAIR
Samuel E. Gordin, Fort Smith, Ark., assignor to Hickory Spring Manufacturing Co., Inc., Hickory, N.C., a corporation of North Carolina
Filed Nov. 4, 1966, Ser. No. 592,032
6 Claims. (Cl. 297—310)



This invention relates generally to stop means for recliner chairs of the type having a selectively tiltable body-supporting structure mounted on a base member for rocking motion with respect thereto, wherein the stop means is mounted on the body-supporting structure and is operative to prevent rocking of the body-supporting structure when it is in a fully reclined position while permitting rocking thereof in all other positions, and is especially applicable to swivel-type recliner chairs wherein the stop means is operative in any facing direction of the body-supporting structure.

3,371,960
VEHICULAR SAFETY HARNESS APPARATUS
Leon F. Bayer, 1640 E. Bethany Home Road, Phoenix, Ariz. 85016, and Jack L. Bayer, 9021 N. 18 Drive, Phoenix, Ariz. 85020
Continuation-in-part of application Ser. No. 343,391, Feb. 7, 1964. This application Apr. 18, 1966, Ser. No. 552,661
10 Claims. (Cl. 297—386)

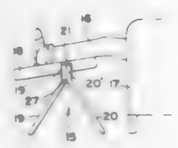


This invention is concerned with safety harness apparatus for use in vehicles, such as motor cars or aircraft. The safety apparatus is of the hydraulic type, and is constructed to permit free normal movements of the operator. However, any sudden forward movement of the operator causes the apparatus to lock and to hold him firm. Added features of the invention include a means for reducing excessive stress on the operator in the event he is thrown forward with a high rate of speed, such as upon impact with another vehicle. Also, an added feature is the provision of means for adapting the apparatus to be used in conjunction with seat ejection mechanisms in aircraft, and to provide means for drawing the pilot firmly back against the seat, when such ejection is effectuated.

3,371,961
FITTING FOR MOUNTING HEADRESTS
Billie E. Colgan, Sunland, Calif., assignor to American Safety Equipment Corp. of California, Sherman Oaks, Calif., a corporation of California
Filed Jan. 30, 1967, Ser. No. 612,594
4 Claims. (Cl. 297—397)

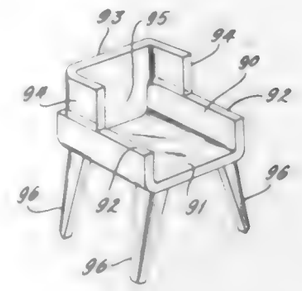
An improved fitting construction for mounting round or rectangular cross-section headrest supporting frame members to round bar or flat sheet metal framing of vehicle seat backs. A base member with a concave surface to abut round frame members of vehicle seat back constructions and a crown portion to receive and mount round or flat headrest support frame members or bars with an associated thumb screw is provided with an additional cooperating, reinforcing and base enclosing housing or bell to fit over the base member, the base member crown portion protruding through an aperture in the housing or bell to receive and mount a headrest supporting frame member, to continuously bear against flat seat back framing about said base member and to transmit loading on the headrest into said seat back frame about said base member.

3,371,962
LEG RESTS
John Bellock, 71 Essex Drive, Tenefly, N.J. 07670
Filed Mar. 13, 1967, Ser. No. 622,683
5 Claims. (Cl. 297—439)



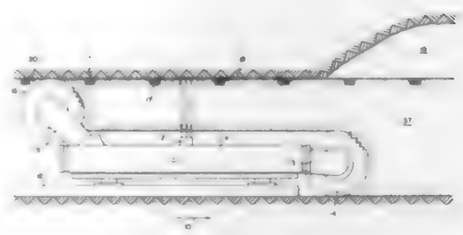
Two identical U-shaped members arranged in downwardly divergent relation, form a stand for a panel which they straddle. The distal end portion of each of the arms of said members, extend vertically upwards. Those on one of said members, act as stops for those on the other. There are two small plates, positioned between the side edges of the panel and said distal end portions of the U-members. Said distal portions of one of the U-members, being secured to said plates respectively. Said panel being mounted on pintles extending from said plates, for swinging movement about an axis spaced a distance from the center of gravity of the panel. The panel is separable from the assembly. The stand is compactly foldable. Upon assembly to use condition, the plates are preferably within the confines of the side edges of the panel, and said distal end portions of the U-members, are within the confines of the plates.

3,371,963
MANUFACTURE OF FURNITURE
Forrest D. Weller, East Alton, Ill., assignor to Alton Box Board Company, Alton, Ill., a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,635
7 Claims. (Cl. 297—445)



Furniture parts cut from paper tubes having parallel sides with intervening rounded corners.

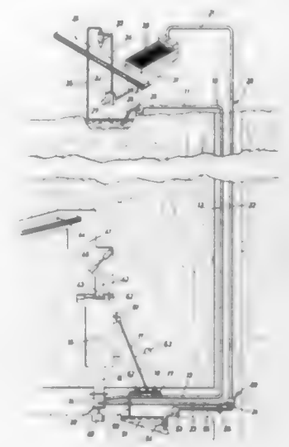
3,371,964
METHOD AND APPARATUS FOR SCANNING AND MONITORING THE ROOF OF SEAMS MINED BY CUTTING MACHINES
Karl-Heinz Weber, Witten-Heven, Germany, assignor to Gebr. Eickhoff, Maschinenfabrik and Eisengiesserei m.b.H., Bochum, Germany, a corporation of Germany
Filed June 20, 1966, Ser. No. 558,727
Claims priority, application Germany, June 30, 1965, E 29,612
5 Claims. (Cl. 299—1)



1. Method of scanning and monitoring the roof of a seam mined by a cutting machine having a support arm carrying a cutting tool for cutting the seam along a face thereof and following the seam roof to expose the latter as the cutting machine advances along the face of the seam, said method comprising the steps of producing a first signal in response to the inclination of said support arm while cutting along the seam face is in progress, scanning a portion of the seam roof exposed by a previous cut along the face of the seam by means of ultrasonic altimeter means disposed on the cutting machine, producing a second signal responsive to said ultrasonic altimeter means, and recording continuously the difference between said first and second signals while cutting along the seam face is in progress.

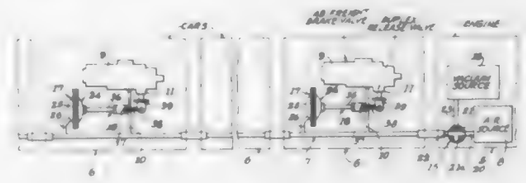
3,371,965
HYDRAULIC HOISTING OF DISCRETE SOLIDS
James A. MacLellan, Manitoba, Canada, assignor to Sheritt Gordon Mines Limited, Toronto, Canada, a company of Ontario
Filed June 10, 1966, Ser. No. 556,738
10 Claims. (Cl. 302—14)

A hydraulic hoist for discrete solids including liquid supply and solids hoisting conduits extending from above the ground to a solids loading level beneath the surface and a pump for discharging liquid under pressure into the supply conduit for circulation up the hoisting conduit. A loading system at the lower level includes a first chamber for receiving solids at atmospheric pressure and an associated loading chamber which receives solids from the



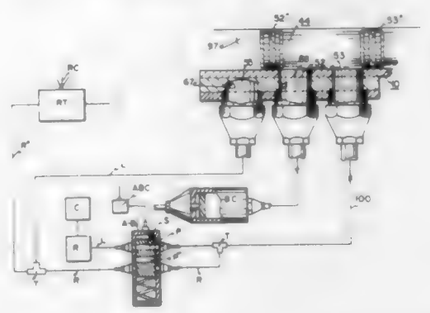
first chamber and introduces them into the hoisting conduit at a velocity at or near the hoisting velocity while permitting uninterrupted circulation of liquid through the liquid supply and hoisting conduits.

3,371,966
BRAKE-BLEEDING SYSTEM
Loren P. Conover, 802 E. Virginia Ave., Glendora, Calif. 91740, and Hubert W. Gibbins, 3402 S. Lamar, Amarillo, Tex. 79109
Filed Jan. 25, 1967, Ser. No. 611,644
6 Claims. (Cl. 303—69)



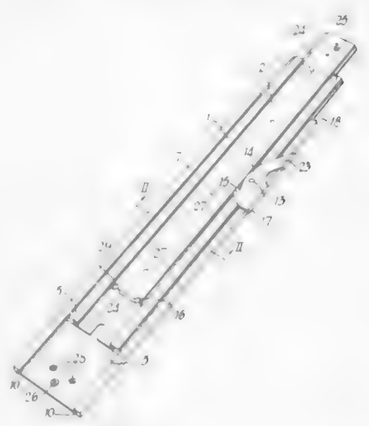
Bleeding air brakes of a train of railroad cars (particularly freight cars) from the engine instead of the common practice of bleeding the brakes of the cars, one at a time, by hand operation.

3,371,967
VALVE STRUCTURE
Ivan A. Farnworth, 441 S. State, Orem, Utah 84057
Filed Dec. 27, 1966, Ser. No. 606,515
11 Claims. (Cl. 303—69)



1. A valve including, in combination, structure defining a valve chamber including an inner wall and, disposed therethrough, a medial function port, a source port disposed on one side thereof, and an exhaust port disposed on the remaining side thereof, all of said ports being mutually longitudinally spaced with respect to each other; a valve shuttle longitudinally slideably disposed within said chamber and having a medial portion spaced from said inner wall and a pair of mutually spaced, transverse valve lands disposed on respective opposite sides of said medial portion and slideable and sealingly engaging said inner wall, said valve lands being mutually spaced apart, and said chamber being so dimensioned that in valve neutral position said function and source ports are disposed between said valve shuttle lands and in valve operating position one of said lands is sealingly disposed between said function and source ports, interrupting communication therebetween, and the remaining valve land is disposed beyond said exhaust port, providing communication between said exhaust port and said function port, said remaining valve land during valve neutral position being sealingly disposed between said function and exhaust ports, said structure also being provided with an auxiliary outlet port disposed between said valve lands during valve neutral position and situated beyond said valve lands of said valve shuttle at valve operating position, said structure also being provided with an auxiliary inlet port disposed beyond said valve shuttle with respect to its valve lands during valve neutral position and also during valve operative position; auxiliary valve means for selectively providing communication between said auxiliary inlet port and said auxiliary outlet port for urging said valve shuttle into valve operating position; control means for selectively operating said auxiliary valve means; return means for returning said valve shuttle from valve operating position to valve neutral position when fluid pressure at said source port is reduced; and stop means for determining valve shuttle neutral position when said valve shuttle is returned thereto by said return means.

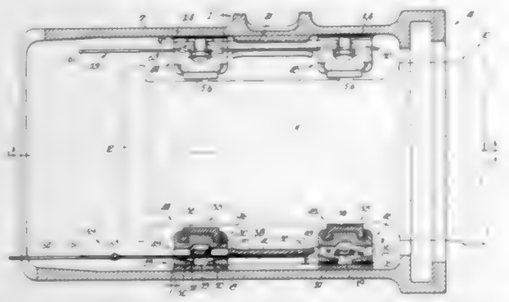
3,371,968
EXTENSION SLIDE
George Albert Loake, Walton-on-Thames, England, assignor to Southborough Group Limited, a British company
Filed Mar. 19, 1965, Ser. No. 441,083
Claims priority, application Great Britain, Mar. 24, 1964, 12,494/64
2 Claims. (Cl. 308—3.6)



An extension slide for a filing cabinet drawer has three slide members mounted one inside another by ball, or plain nylon, bearings arranged in lateral gaps between the slide members and protected externally by tongue-and-groove seals, the intermediate and outermost slide members being channel-shaped. A releasable latching member co-operating with a lateral guiding surface of the innermost slide member is pivoted on the intermediate member

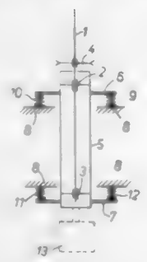
and can engage behind one end of each of the innermost and outermost members to lock the slide in its fully extended condition.

3,371,969
RAILWAY CAR JOURNAL BOX CONSTRUCTION
Edward Payson Smith, Winnetka, and Finn Jensen, Riverdale, Ill., assignors to Illinois Railway Equipment Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 9, 1965, Ser. No. 446,901
18 Claims. (Cl. 308—40)



Journal guide supports on the inner vertical side walls of a railway journal box are arranged to receive downwardly movable journal guides by means of cooperating vertically extending T-slot and T-member means which hold the journal guides in a preliminary manner for subsequent receipt of individual keys to hold the journal guides fixedly in operative position.

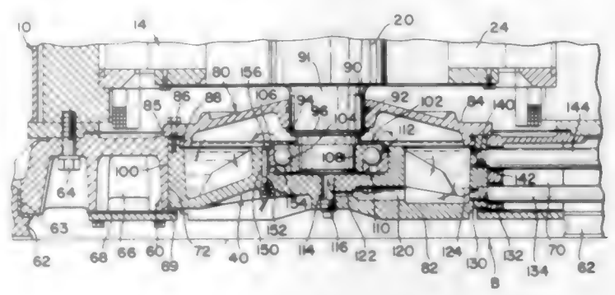
3,371,970
MOUNTING FOR HIGH-SPEED VERTICAL SHAFTS
Karl Beerli, Niederuster, Zurich, Switzerland, assignor to Spindel-, Motoren- und Maschinenfabrik A.G., Uster, Zurich, Switzerland
Filed July 5, 1966, Ser. No. 562,685
Claims priority, application Switzerland, July 8, 1965, 9,576/65
16 Claims. (Cl. 308—140)



1. A mounting for high-speed vertical shafts, including: a vertical shaft; two support means spaced along the length of the shaft for supporting the shaft; first means for resiliently mounting each of said support means for horizontal and vertical movement on a further support; and second means for permitting inclination of the shaft with respect to at least one of said support means; and bearing means for permitting rotation of the shaft.

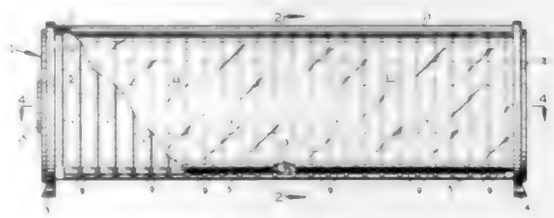
3,371,971
BEARING STRUCTURE FOR A VERTICAL MOTOR-GENERATOR UNIT
Alex Bozsvai, Chagrin Falls, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 1, 1966, Ser. No. 524,266
12 Claims. (Cl. 308—187)

There is provided a bottom end plate for a vertical motor-generator unit which includes a bearing housing connected onto the shaft of the motor and generator and adapted to be slipped into an opening in the bottom end plate. This housing includes a bearing chamber with a lower inlet and an upper opening, a thrust bearing in the



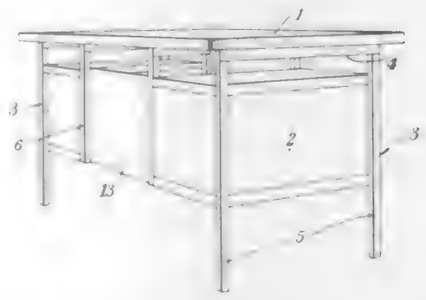
chamber, a reservoir around the chamber and in communication with the inlet and means for maintaining a lubricant level in the reservoir above the upper opening. In this manner, the bearing pumps lubricant through the thrust bearing.

3,371,972
SELECTIVE REEL DISPENSER
Jacque Fresco, 3112 SW. 23rd St., Miami, Fla. 33133
Filed Mar. 7, 1967, Ser. No. 621,305
6 Claims. (Cl. 312—17)



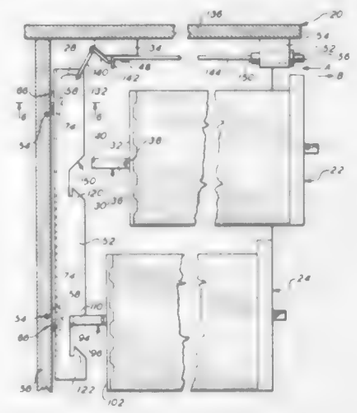
A device for storing reels in parallel relation and selectively dispensing same by depressing indexed tabs corresponding to the reels.

3,371,973
OFFICE FURNITURE AND TABLES
René Vincens, Neuville-les-Dieppe, Seine-Maritime, France, assignor to Societe Civile de Recherches et d'Etudes Industrielles, Neuville-les-Dieppe, France
Filed Aug. 1, 1966, Ser. No. 569,152
Claims priority, application France, Aug. 23, 1965, 29,126, Patent 1,456,004
3 Claims. (Cl. 312—194)



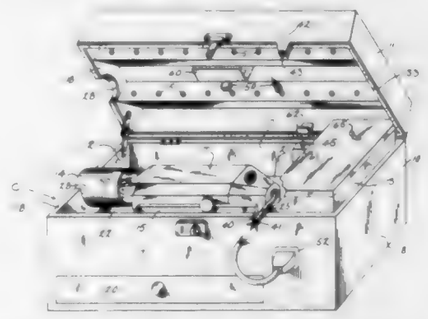
An article of metallic office furniture comprises two rigid leg-forming frames of inverted U-shape, a top recurred to the base portions of the frames, two intermediate U-shaped frames which have their base portions recurred to the top and are similar and parallel to the leg-forming frames but have shorter legs, and cabinets carried by cooperating support elements on the legs of the leg-forming frames and of the intermediate frames.

3,371,974
COMPONENT INTERLOCKING AND LOCKING APPARATUS FOR CABINETS
Raymond J. Vermeersch, Burlington, Iowa, assignor to The Leopold Company, Burlington, Iowa, a corporation of Delaware
Filed Feb. 13, 1967, Ser. No. 615,642
16 Claims. (Cl. 312—218)



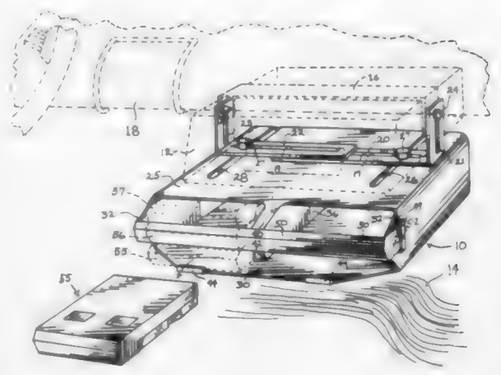
An interlocking apparatus for locking all components, except one, within the confines of a cabinet upon initial movement of any one component from a position confined within the cabinet towards a position extending therefrom, and for locking all components within the cabinet in response to actuation of a lock. A strap and associated lock-bar are provided for each component, with the strap disposed on its component for engagement with a cam surface on its associated lock-bar, and with latching hooks disposed on said associated lock-bar, for engagement with the straps disposed on the other components. As the component and its strap begin to move away from the associated lock-bar, the lock-bar falls due to gravity and its latching hooks engage the straps on the other components to prevent movement thereof. One of the lock-bars also has disposed thereon a set of locking hooks disposed to engage the straps of all the components upon actuation of said one lock-bar in response to operation of a lock, to thereby lock all the components against movement.

3,371,975
COOLING AND CARRYING BOX FOR ELECTRIC TOOLS AND APPLIANCES
Henry E. Meltzer, 1745 Flett St., Racine, Wis. 53403
Filed Feb. 21, 1967, Ser. No. 617,558
5 Claims. (Cl. 312—236)



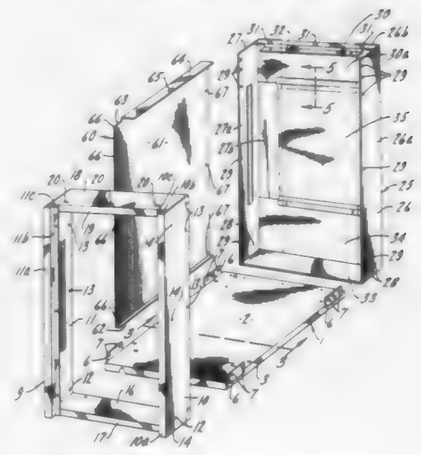
An apparatus and cooling box for holding, carrying and cooling portable electrically driven tools and appliances such as barber clippers, small electric drills, grinders, etc. The box being of a substantially rectangular shape having a hinged lid at its upper end. A compartment in said box and electric motor carrying a suction fan adjacent one end of said compartment. The wall opposite the motor and suction fan being provided with a screened aperture. The appliance being set in the compartment between the aperture and motor and switch actuating means operable by the opening and closing of the lid to start the motor when the lid is closed and to circulate air about the appliance for cooling the same. The box being also provided with an exhaust opening adjacent the suction fan. The electric circuit arrangement also providing means whereby the source of current to the electric appliance can be cut off when the lid is closed and electric motor actuated.

3,371,976
AUTOMOTIVE STEREO CARTRIDGE HOLDER
Theodore Ritz, Jr., 9939 Deering, Livonia, Mich. 48150
Filed June 21, 1966, Ser. No. 559,174
7 Claims. (Cl. 312—245)



An automotive stereo cartridge holder is disclosed for use in an automobile passenger compartment which is closed except at the front thereof and which has a retainer bar dividing the front opening into a top front opening through which stereo cartridges are inserted into said holder and into a bottom front opening through which stereo cartridges are removed from said holder, and lift-over stop means preventing movement forwardly out of the holder of the lowermost stereo cartridge, and the retainer bar preventing such forward movement of the other stacked stereo cartridges stored in said holder.

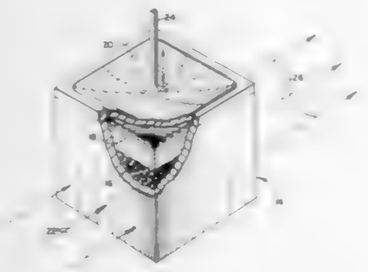
3,371,977
CABINET ASSEMBLY
James M. McCabe, Chicago, Ill., assignor to Coe Laboratories, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 5, 1965, Ser. No. 445,627
5 Claims. (Cl. 312—257)



1. For use in forming undercounter cabinets, a generally rectilinear base formed of sheet metal and having a relatively flat upper surface, a plurality of brackets spaced-

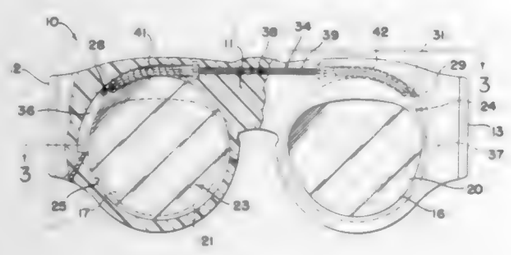
ly upstanding from said surface, a forward frame member formed of sheet metal and slidable along and about a forward portion of said base and having spaced vertical strips overlying some of said brackets, a rear frame member formed of sheet metal and slidable along and about a rear portion of said base and having spaced vertical strips overlying others of said brackets, said strips and brackets having apertures alignable when said strips are in position on said base, each of said vertical strips being of substantial greater width than thickness, each of said frame members including upper and lower horizontal strips joining said vertical strips, the vertical strips of said forward frame member extending forwardly of its horizontal strips to form a door frame.

3,371,978
PRESSURE-SENSITIVE OPTICAL CELL
Edwin Matovich, Costa Mesa, Calif., assignor to North American Aviation, Inc.
Filed Feb. 12, 1964, Ser. No. 344,292
5 Claims. (Cl. 350—160)



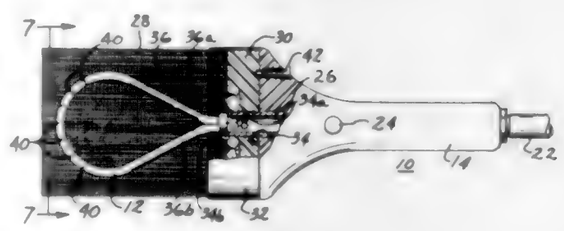
A transparent housing contains a compressible liquid, the index of refraction of which varies as a function of pressure. Immersed in the liquid are a plurality of particles of transparent incompressible material. When appropriate pressure is applied to the fluid, its index of refraction changes to match that of the material, thereby permitting transmission of light through the cell. When such matched index condition does not exist, incident light is scattered by the interfaces between the particles and the liquid.

3,371,979
FLUID-FILLED VARIABLE DENSITY POLARIZING SUNGLASSES
Ronald J. Catanzaro, % William Beaumont General Hospital, 7417-B Hume St., El Paso, Tex. 79930
Filed Apr. 15, 1963, Ser. No. 273,057
1 Claim. (Cl. 351—49)



1. A variable density sunglass comprising a frame providing right and left eye apertures and including a bridge portion,
a first light polarizing lens fixedly secured in each of said apertures,
a second light polarizing lens rotatably mounted in each of said apertures and spaced from said first lens,
a third lens fixed y secured in each of said apertures on the side of said second lens opposite to said first lens,
said lenses having identical indices of refraction,
adjustable means mounted in said bridge portion of said frame and being operably connected to said second lens, whereby said second lens may be rotated relative to said first and third lens,
said first and third lenses with said frame defining a chamber,
fluid means disposed in said chamber and immersing said second lens,
said fluid having a refractive index closely approximating the refractive indices of said lenses,
said bridge portion including a cavity in communication with said fluid chambers,
said adjustab'e means comprising an elongated member longitudinally slidably disposed in the cavity in said bridge portion of said frame,
said member having end portions extending into said fluid chamber in each of said right and left apertures,
means securing each of said end portions respectively to one of said second lenses,
sealing means secured to said elongated member and said frame whereby the cavity in said bridge portion is isolated from said fluid chambers,
said sealing means comprising an extensible flexible tubular seal in each of said fluid chambers and surrounding a portion of said end portions of said member,
each of said seals having one end secured to said member and the other end secured to said frame adjacent to the juncture of said cavity and said chambers whereby the interior of said tubular seals is in communication with said cavity and the exterior of said tubular seals is exposed to the fluid in said chambers.

3,371,980
LIQUID COATING MATERIAL APPLYING APPARATUS
Stephen F. Stefely, 1729 N. Lotus Ave., Chicago, Ill. 60639
Filed Oct. 22, 1965, Ser. No. 501,748
8 Claims. (Cl. 401—285)



Liquid coating material applying apparatus includes a brush formed of a support block and bristles. A disperser introduces liquid coating material into the bristles and includes a continuous, apertured polyvinyl chloride tube having its ends joined to form a loop among the bristles. An enlarged portion is attached to the ends of the tube, and the loop is deformable so that it can be inserted into the brush through an opening in the support block. The enlarged portion engages the support block and holds the loop within the brush.

CHEMICAL

3,371,981
CYCLOHEXENOTHIAZOLE AZO DYES DYEING OF METALLIZED POLYOLEFINS
Shinya Itoh, Kyoto, Yoshitaka Kubota, Ohtsu-shi, and Masao Iizuka, Yokohama, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,640
Claims priority, application Japan, Apr. 7, 1964, 39/19,316
4 Claims. (Cl. 8—4)

Applicants dye metallized polyolefin fibers and other shapes with a metallizable cyclohexenothiazole azo dye with an OH group in the ortho position to the azo group on the coupler.

3,371,982
PROCESS FOR IMPROVING THE DYEABILITY OF POLYOLEFINS
Abraham Kutner, Newark, Del., assignor to Hercules, Incorporated, a corporation of Delaware
No Drawing. Filed Jan. 29, 1964, Ser. No. 341,093
4 Claims. (Cl. 8—97)

The dyeability of polyolefin articles with metal complexing dyestuffs is improved by treating the article with an organoaluminum compound such as triethyl aluminum and then hydrolyzing the treated article prior to or during the dyeing step. By this process, a fine dispersion of the hydrolysis product of the organoaluminum compound is produced in situ throughout the article.

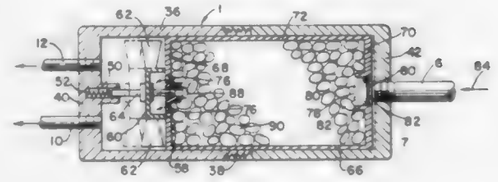
3,371,983
PREWETTING CELLULOSIC FABRIC BEFORE INTRODUCTION TO DEHYDRATING SOLUTION OF FORMALDEHYDE REACTANT IN A CONTINUOUS PROCESS
Richard P. Barber, Mooresville, and Vernon C. Smith, Greensboro, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Continuation-in-part of application Ser. No. 136,418, Sept. 5, 1961. This application Dec. 4, 1961, Ser. No. 156,859
11 Claims. (Cl. 8—116.4)

1. A continuous process for increasing the wet wrinkle recovery of a cellulosic fabric comprising treating the fabric with an aqueous medium in which water is the sole essential liquid until the fabric contains 10–100% of its own weight of added water, substantially immediately thereafter passing the wet fabric into a dehydrating solution of formaldehyde at a temperature up to 90° C. for a period of up to 5 minutes whereby the formaldehyde reacts with said fabric to improve the wet wrinkle recovery, washing the thus treated fabric with water and then drying said fabric.

3,371,984
AIR FRESHENER
Joseph Patrick Kelly, Staten Island, N.Y., and George Herbert Fuller, Colonia, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 6, 1963, Ser. No. 307,015
9 Claims. (Cl. 21—53)

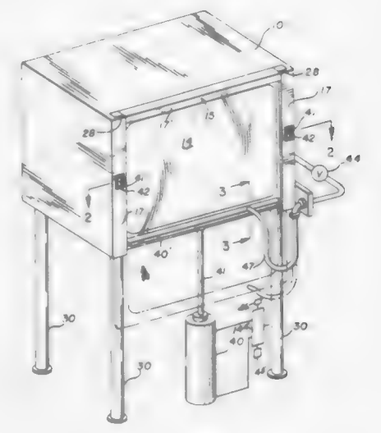
Solid air odorizing compositions, and such compositions in tablet form. The compositions contain a hydrated salt which loses some water of hydration when air is passed thereover at a rate of at least about 25 cubic feet per minute, and a perfume intimately admixed therewith.

3,371,985
VAPORIZER DEVICE
Edward W. Wyka, 716 Bermuda Road, West Babylon, N.Y. 11704
Filed Sept. 16, 1964, Ser. No. 396,849
5 Claims. (Cl. 21—91)



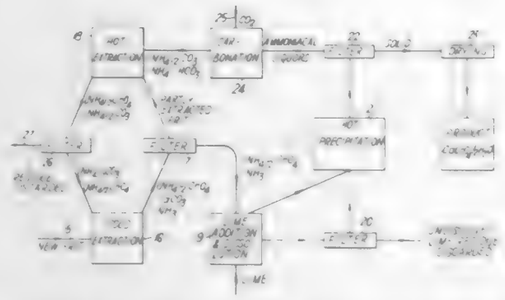
A disinfectant-crystal vaporizing device having a hollow cylindrical casing, a cylindrical cartridge removably received within the casing, said cartridge containing disinfectant crystals. An impeller assembly is rotatably and slidably mounted within the casing to sealingly cover outlet openings disposed through one end of the cartridge. When air is forced into said cartridge through an inlet opening at the other end thereof, the impeller assembly will be caused to rotate and uncover said outlet openings, to thereby permit egress of disinfectant vapors and to accomplish the uniform mixing thereof.

3,371,986
DOOR AND SEALING ARRANGEMENT THEREFOR
Gilbert G. Brown, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Filed Feb. 24, 1964, Ser. No. 346,726
5 Claims. (Cl. 21—98)



The present invention relates to a sterilizing chamber having a surface around the door and an inflatable seal which is controlled by pressure within the chamber so that the seal will not be released nor will the door be opened until the pressure within the chamber has fallen below a predetermined value. The chamber is characterized by a double wall connected together by a member that defines the surface on which the inflatable seal rests.

3,371,987
PROCESS FOR THE PRODUCTION OF CALCIUM CHROMATE
Clifford Alfred Vessey and James Thomson Farquhar, Harrogate, England, assignors to Associated Chemical Companies Limited, Harrogate, England
Filed July 20, 1964, Ser. No. 383,638
4 Claims. (Cl. 23—56)



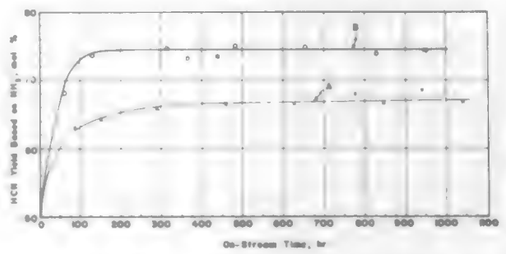
A process for the recovery of chromium values as calcium chromate from a roasted mix containing alkaline earth metal chromate comprising the steps of partly leaching said roasted mix in a first leaching step with a leach liquor containing, in a dissolved state, ammonia and carbon dioxide to yield an aqueous solution containing ammonium chromate and a partially extracted insoluble mix. The insoluble material is then removed to obtain a liquor containing, in a dissolved state, ammonia and ammonium chromate. This liquor is treated, at room temperature, with lime to yield an aqueous solution containing dissolved calcium chromate and ammonia. The calcium chromate-ammonia containing aqueous solution is then heated to a temperature sufficient to precipitate calcium chromate, the solid calcium chromate is separated from the mother liquor containing dissolved calcium chromate and ammonia, and the separated calcium chromate precipitate is then dried. The mother liquor which contains dissolved calcium chromate and ammonia is cooled and carbonated to give a suspension of calcium carbonate in a solution containing ammonium bicarbonate and ammonium chromate. The partially extracted roasted mix which resulted from the first leaching step is then leached with the carbonated mother liquor to yield an extracted residue and a leach liquor containing, in a dissolved state, ammonia, carbon dioxide and ammonium chromate. The extracted residue is then discarded, and the leach liquor is utilized to leach a fresh quantity of roasted mix.

3,371,988
METHOD OF BENEFICIATING CLAY BY REMOVAL OF TITANIUM IMPURITIES
Robert N. Maynard and Bobby Ray Skipper, Cochran, and Nathan Millman, Macon, Ga., assignors to J. M. Huber Corporation, a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 625,022, Mar. 22, 1967. This application Aug. 25, 1967, Ser. No. 663,221
10 Claims. (Cl. 23—110)

This disclosure covers a method of beneficiating kaolin clay by removing titanium impurities from a clay slurry. The process produces clays with a higher brightness than is possible with conventional treatment of the same clay.

3,371,989
CATALYST ACTIVATION
Bingham Y. K. Pan, Texas City, Tex., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Nov. 22, 1963, Ser. No. 325,584
3 Claims. (Cl. 23—151)

An improvement in the process for the production of hydrogen cyanide by the vapor-phase reaction of ammonia, natural gas and air in the presence of a platinum gauze catalyst which comprises activating the catalyst by passing the reactants in specified mole ratios and temperatures through it at a specific mass flow rate in the range from 1.28 to 1.45 lb./hr./layer of gauze/sq. in. of gauze surface until a maximum yield of hydrogen cyanide is obtained.



3,371,990
PRODUCTION OF HYDROGEN CYANIDE
Lawrence J. Krebaum, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 48,362, Aug. 9, 1960. This application July 19, 1963, Ser. No. 296,376
10 Claims. (Cl. 23—151)

1. The process for producing hydrogen cyanide which consists essentially of reacting an organic mononitrile with hydrogen at a temperature within the range from about 600° C. to about 850° C.

3,371,991
STABILIZATION OF WET PROCESS PHOSPHORIC ACID BY HEATING UNDER PRESSURE AND WITHOUT EVAPORATION
Frank J. Sergeys, Kensington, and Casimer C. Legal, Jr., and Gordon J. Turner, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Jan. 6, 1964, Ser. No. 335,749
5 Claims. (Cl. 23—165)

Wet process phosphoric acid is stabilized by heating the acid for a relatively short period of time to above its boiling point under pressure while preventing volatilization. After cooling, the recovered wet process phosphoric acid may be shipped or stored over an extended time period without appreciable post-precipitation or sedimentation.

3,371,992
FORMATION OF CRYSTALLINE PYROPHOSPHORIC ACID
Chung Yu Shen, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,501
16 Claims. (Cl. 23—165)

Crystalline pyrophosphoric acid is formed by adding seed crystals of same to a dispersion of liquid polyphosphoric acid (78–82% P_2O_5) in a non-aqueous solvent. The temperature of this dispersion is then maintained at below the melting point of crystalline pyrophosphoric acid until conversion to the crystalline form is complete.

3,371,993
METHOD OF MAKING MAGNESIUM OXIDE FIBERS
Marshall H. Norwalk, Watkins Glen, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 21, 1964, Ser. No. 419,970
12 Claims. (Cl. 23—201)

Fibrous crystalline magnesium oxide is produced by reacting aluminum and magnesium oxide at a temperature of at least 1300° C. to form magnesium metal vapor which is further reacted with oxygen to form the fibrous product.

3,371,994
PRODUCTION OF PHOSPHINE
Edward James Lowe and Frederick Arthur Ridgway, Stourbridge, England, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Apr. 1, 1963, Ser. No. 269,727
Claims priority, application Great Britain, Apr. 4, 1962, 12,942/62
6 Claims. (Cl. 23—204)

1. A method for manufacturing phosphine which comprises mixing phosphorus with a strong aqueous solution of an acid selected from the group consisting of orthophosphoric acid and condensed phosphoric acids at a temperature above 250° C., and collecting the evolved phosphine, wherein when white phosphorus is used as starting material conversion thereof to red phosphorus is allowed to proceed until a quantity of white phosphorus, between 0.1 and 4% by weight of the total phosphorus, remains, whereupon this quantity is maintained by continuous addition of further white phosphorus, water also being added as required, the reactants being agitated at least after the point of 50% conversion has been reached.

5. A method for manufacturing phosphine which comprises mixing phosphorus with a strong aqueous solution of an acid selected from the group consisting of orthophosphoric acid and condensed phosphoric acids at a temperature above 250° C., and collecting the evolved phosphine, wherein when white phosphorus is used as starting material conversion thereof to red phosphorus is allowed to proceed until about 50% of the white phosphorus has been converted to red phosphorus, the residual white phosphorus is then distilled off until the amount of white phosphorus which remains is between 0.1 and 4% of the total amount of phosphorus present, the red phosphorus is allowed to react while, at the same time, white phosphorus is added to maintain the presence at all times of an amount of white phosphorus between 0.1 and 4% of the total amount of phosphorus present.

3,371,995
METHOD OF MAKING MACROSCOPIC SILICON CARBIDE FIBERS WITH A SILICA SHEATH
Wallace W. Pultz, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed July 9, 1965, Ser. No. 470,729
9 Claims. (Cl. 23—208)

1. A method for manufacturing macroscopic fibers containing beta-silicon carbide crystals with a surface sheath of silica comprising the steps of providing a mixture of carbon and silica in a molar ratio ranging between about 1:1 to 5:1 in a reaction chamber, contacting said mixture at a temperature ranging about 1300°–1550° C. with an atmosphere containing at least one halide gas selected from the group consisting of hydrogen fluoride, hydrogen chloride, hydrogen bromide, and silicon tetrachloride, the halide gas having a partial pressure ranging about 25–350 mm. of mercury, maintaining said temperature and atmosphere for a period of time sufficient to attain the desired fiber formation after which the fibers are cooled to room temperature.

3,371,996
DIAMOND GROWTH PROCESS
Henry J. Hibshman, 6 Crabapple Lane, Plainfield, N.J. 07060
Filed Jan. 20, 1964, Ser. No. 338,766
5 Claims. (Cl. 23—209.1)

Diamonds are grown from diamond seed particles by contacting the seed particles with a gas consisting essentially of CO in the presence of catalytic amounts of at least one metal selected from the group consisting of the precious metals and nickel at temperatures in the range of 600° C. to 1100° C. and at pressures of 1 to 2000 atmospheres.

3,371,997
PROCESS FOR MAKING HIGH STRUCTURE CONDUCTIVE CARBON BLACK
Merrill E. Jordan, Walpole, and John F. Hardy, Andover, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
No Drawing. Filed Dec. 30, 1964, Ser. No. 422,432
9 Claims. (Cl. 23—209.4)

The present invention provides a method for producing high structure, conductive carbon blacks which broadly comprises a two-stage carbon forming reaction. In the first stage, a carbon black aerosol is produced by the well known furnace process, i.e., a hydrocarbon make fuel is charged into a heated zone wherein cracking or incomplete combustion thereof occurs. It is important that the carbon black aerosol effluent produced in said first stage, (1) comprise a substantial quantity of hydrocarbonaceous materials representing at least about 1% by weight of the carbon black product, and (2) have a temperature of at least about 1200° F. In the second stage of the present process, sufficient acetylene is charged into the above-described aerosol to (1) raise the temperature thereof to at least about 2250° F., and (2) provide an acetylene based carbon black product representing at least about 10% by weight of the total black product. The temperature rise realized in said second stage not only serves to produce carbon black from the acetylene charge but also to further decompose the hydrocarbon residue forming part of the first stage reaction products.

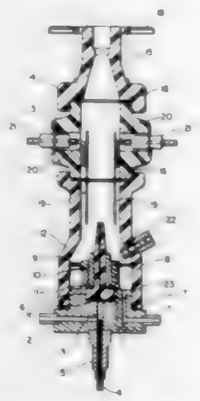
3,371,998
PROCESS FOR THE REMOVAL OF BROMINE, AIR AND CO_2 FROM SALINE WATER
William P. Schambra, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 6, 1965, Ser. No. 453,828
5 Claims. (Cl. 23—218)

This invention relates to a process for the removal of bromine, air and CO_2 from seawater which comprises adjusting the pH of such water with an acid to a value of 3.0–4.0, admixing chlorine with the acidified water to achieve an oxidation potential of about 0.9–1.00 volt and applying sufficient vacuum to said treated water to remove CO_2, air and bromine therefrom.

3,371,999
PURIFICATION OF BY-PRODUCT SULFUR FORMED FROM CHLORINATION PROCESSES
Adam E. Skrzec, West Nyack, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
Filed May 25, 1965, Ser. No. 458,701
7 Claims. (Cl. 23—224)

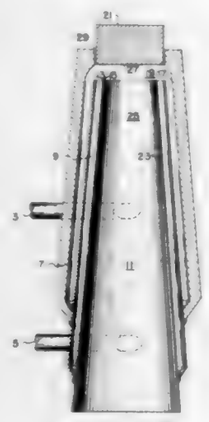
1. The method of removing iron and sulfur chlorides from the sulfur by-product formed in the manufacture of carbon tetrachloride by the chlorination of carbon disulfide which comprises passing the sulfur by-product in the form of molten droplets counter-currently through a dilute, basic aqueous medium, the temperature of which is above the melting point of sulfur whereby the iron and sulfur chlorides are extracted from the droplets, collecting the reconstituted molten sulfur after passage through the aqueous medium and allowing it to solidify.

3,372,000
FLAME IONIZATION DETECTOR
William S. Gallaway, Fullerton, and Arthur C. Seibel, Garden Grove, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Feb. 27, 1964, Ser. No. 347,749
6 Claims. (Cl. 23—254)



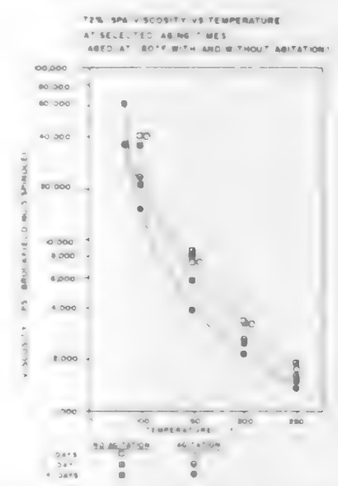
A detector is disclosed having a nonconducting jet with two parallel plate electrodes placed generally above it, in a nonconducting chamber out of contact with the flame and extending slightly below the tip of the jet and of sufficient length and area to insure substantially complete collection of both positive ions and electrons. The remainder of the parts are also of nonconducting material insofar as possible. An auxiliary ignition jet may be spaced below and to the side of the main jet. A dual burner circuit employing such a detector is illustrated.

3,372,001
APPARATUS FOR PRODUCING METAL OXIDES
Charles B. Wendell, Canton, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed Dec. 6, 1963, Ser. No. 328,693
3 Claims. (Cl. 23—277)



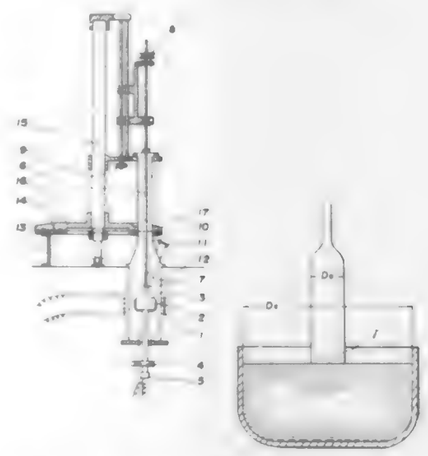
1. An improved burner comprising a laterally enclosed, internally unobstructed frusto-conical main chamber, at least two concentric frusto-conical shells positioned about and uniformly spaced from the lateral walls of said frusto-conical chamber so as to form at least two concentric annuli around said chamber along the major portion of its length beginning at the small end thereof, the space between the inner shell and the chamber being closed at the large end of said inner shell and the space between the two shells being closed at the larger end of the outer shell, while the small end of the outer shell extends beyond the small ends of both the inner shell and said chamber and then terminates in a full end closure thus defining a confined premixing space communicating directly with the small ends of the main chamber and both annuli, inlet means into each of said annuli to cause spiraling of gases introduced thereinto and means for readily adjusting the volume of said confined premixing space.

3,372,002
VISCOSITY REDUCTION OF WET PROCESS SUPERPHOSPHORIC ACID
Robert C. Mazurek and Phillip E. Hynson, Lakeland, Fla., assignors, by mesne assignments, to Armour Agricultural Chemical Company, a corporation of Delaware
Filed Dec. 2, 1965, Ser. No. 514,431
3 Claims. (Cl. 23—293)



1. In a process for reducing the viscosity of wet process superphosphoric acid having a P_2O_5 content of at least 68 weight percent, the steps of aging said acid for at least a day at a temperature in the range of about 180–220° F. while keeping the acid in a state of agitation, and thereafter allowing the acid to cool to the ambient temperature.

3,372,003
APPARATUS AND METHOD FOR PRODUCING SILICON SINGLE CRYSTALS FOR SEMICONDUCTOR
Hideo Yamase, Noda, Japan, assignor to Shin Nippon Chisso Hiryo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed July 17, 1964, Ser. No. 383,529
Claims priority, application Japan, July 19, 1963, 38/38,897
2 Claims. (Cl. 23—301)

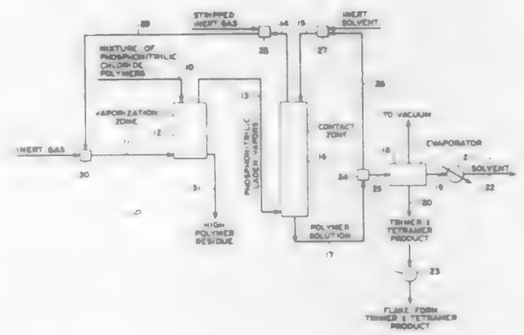


Method and apparatus for producing silicon single crystal by pulling a silicon single crystal from 10% to 60% by weight of molten silicon in a crucible charged with polycrystalline silicon in one pulling cycle, transferring a pulling apparatus together with a pulled single crystal to a single crystal detaching position while simultaneously applying another pulling apparatus to the crucible and charging polycrystalline silicon in an amount corresponding to the pulled single crystal for use of subsequent pulling cycle and repeating the operation.

3,372,004
PROCESS FOR MAKING POROUS SODIUM FLUORIDE PELLETS
Earl W. Richardson, Paducah, Ky., and Leonard E. McNeese, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Mar. 23, 1966, Ser. No. 538,169
7 Claims. (Cl. 23—313)

1. A method of making a stable, porous body of sodium fluoride suitable for withstanding repeated gaseous fluoride sorption-desorption cycles, comprising the steps of mixing sodium fluoride powder with water to form a wet agglomerate, drying the agglomerate, and sintering the agglomerate by heating the latter to a temperature selected from a range of temperatures between about 1200° F. and about 1700° F. for forming the porous body.

3,372,005
PHOSPHONITRILIC CHLORIDE PURIFICATION PROCESS
Daniel J. Jaszka, Tonawanda, and John T. Rucker, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Aug. 14, 1962, Ser. No. 216,893
13 Claims. (Cl. 23—357)



4. The method for the preparation of mixtures of cyclic phosphonitrilic chloride trimer and tetramer which comprises reacting phosphorus pentachloride with ammonium chloride in the presence of a first inert solvent, said reacting being sufficient to obtain a polymer product comprising phosphonitrilic chloride trimer and tetramer, vaporizing the first inert solvent from the resulting product liquor sufficiently to obtain phosphonitrilic chloride products, heating said products to a temperature of up to about 170 degrees centigrade sufficiently to obtain said products in a molten state, passing inert gas through said molten products sufficiently to obtain said inert gas laden with trimeric and tetrameric cyclic phosphonitrilic chloride polymers, contacting the resulting polymer-laden gas with a second inert solvent sufficiently to produce a solution of cyclic phosphonitrilic chloride polymer in said second solvent, the temperature of said second solvent being less than the boiling temperature of said second solvent, and subsequently vaporizing the second solvent from the said solution sufficiently to obtain the phosphonitrilic chloride polymer crystals as a product.

3,372,006
HALOGEN DERIVATIVES OF POLYHEDRAL BORON COMPOUNDS
Bertrand L. Chamberland, Wilmington, Del., and Earl L. Muetterties, West Chester, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 31, 1962, Ser. No. 199,574
12 Claims. (Cl. 23—358)

1. A compound of the formula

$$M_a(B_{20}H_{18-n}X_n)_b$$

wherein M is a cation having a valence of 1–3, inclusive, and is selected from the class consisting of
hydrogen,
hydronium,
metal selected from Groups I and II of the Periodic Table having an atomic number of up to 80,
ammonium,
hydrazonium,

$[Ni(NH_3)_6]^{+2}$, $[Zn(NH_3)_4]^{+2}$
$[Co(NH_2C_2H_4NH_2)_3]^{+3}$, $[Ni(dipyridyl)_3]^{+2}$
$[Co(NH_3)_6]^{+3}$, $[Co(NH_3)_4]^{+2}$

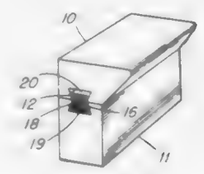
aryldiazonium of 6–10 carbon atoms,
S-substituted sulfonium,
P-substituted phosphonium,
N-substituted ammonium,
N-substituted hydrazinium
wherein the substituents on the S, P and N atoms are selected from the class consisting of alkyl, alkenyl, cycloalkyl, cycloalkenyl, aryl, aralkyl, alkaryl, cyanoalkyl and
hydroxyalkyl, wherein each of the immediately above groups contains at most 18 carbon atoms,

X is halogen, n is a positive number of 1–18, inclusive; and a and b are the smallest whole numbers which satisfy the equation

$$b = \frac{n \times \text{valence of M}}{2}$$

11. $Zn(NH_3)_4B_{20}H_{12}Cl_6$.

3,372,007
WORKPIECE ASSEMBLY
James D. Shaver, Scarsdale, N.Y., assignor to Clark & Vicario Corporation, North Tarrytown, N.Y., a corporation of New York
Filed Aug. 3, 1965, Ser. No. 476,953
5 Claims. (Cl. 29—183)



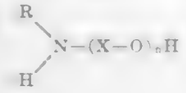
1. A workpiece assembly comprising first and second bodies arranged in surface-to-surface contact, each body having a cavity therein extending inwardly from an opening in the surface thereof, each cavity enlarging uniformly in size inwardly of said openings, said openings being juxtaposed one with the other, and a mass of a non-shrinking type metal alloy investing and partly filling each of said cavities, said metal alloy having a melting temperature in a range which is below that of said bodies.

3,372,008
METAL REFLECTOR AND METHOD OF MANUFACTURING SUCH REFLECTORS
Cornelis Korver, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 10, 1962, Ser. No. 194,217
Claims priority, application Netherlands, May 29, 1961, 265,287
3 Claims. (Cl. 29—183.5)

1. A metal reflector comprising a cast reflector body of aluminum and having alloys chosen from the group consisting of an alloy having 3.0% of magnesium, less than 0.6% of manganese, less than 3.0% of silicon and the remainder aluminum; an alloy having about 0.4% of manganese, from 12% to 13.5% of silicon and the remainder aluminum; an alloy having about 1.0% of magnesium, from 0.2% to 1.0% of manganese, about 5% of silicon, and the remainder aluminum; a reflecting layer of aluminum on said cast aluminum body and an oxide layer coating on said reflecting layer of aluminum.

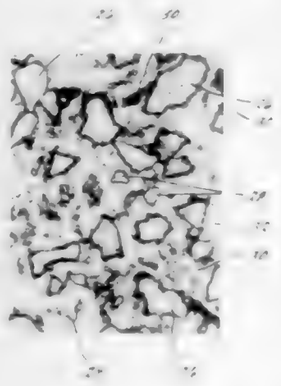
3,372,009
LIQUID FUEL COMPOSITIONS CONTAINING AS ANTI-CORROSION AGENT AN ALKYL MONO-ALKANOL AMINO COMPOUND
Hans F. Waldmann, Glassboro, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed June 18, 1964, Ser. No. 376,263
9 Claims. (Cl. 44—72)

1. A liquid hydrodesulfurized hydrocarbon fuel composition normally tending to promote vapor phase corrosion, containing a liquid hydrodesulfurized hydrocarbon fuel heavier than gasoline and an effective amount of an alkyl amino mono-alkanol compound of the formula:



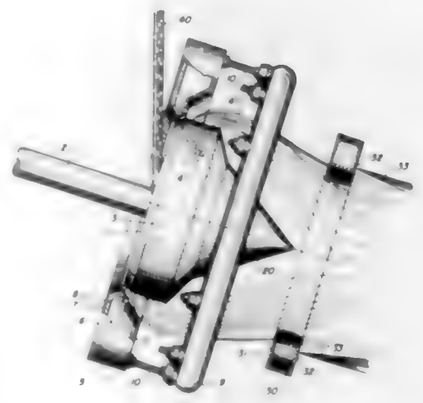
where R represents an alkyl group having from 1 to about 10 carbon atoms; X is an alkylene group having from 2 to about 4 carbon atoms; and *n* represents an integer of 1 and 2.

3,372,010
DIAMOND ABRASIVE MATRIX
Milton C. Parsons, Redford Township, Wayne County, Mich., assignor to Wall Colmonoy Corporation, Detroit, Mich., a corporation of Delaware
Filed June 23, 1965, Ser. No. 466,391
7 Claims. (Cl. 51—309)



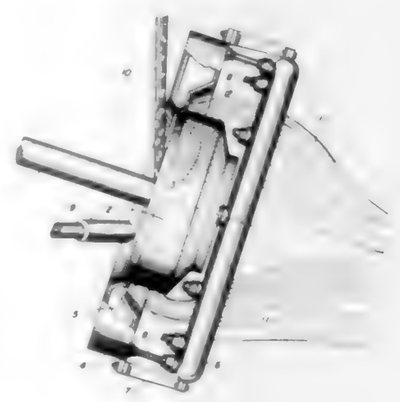
A metallic bonding matrix for diamond abrasive grains having a micro structure containing tungsten carbide and chromium boride particles bonded in a lattice comprising a solid solution of controlled amounts of nickel, iron, copper, chromium, tin, carbon, boron and silicon.

3,372,011
APPARATUS FOR FORMING FIBERS
William F. Porter, Roselle, Ill., assignor to United States Gypsum Company, a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,736
3 Claims. (Cl. 65—14)



Apparatus for forming fibers comprising a rotor having orifices in its side wall, a surrounding ring burner, a streamlining cone extending downstream from the rotor, and an attenuating blast ring located donwstream from the rotor a distance equal to or greater than about ½ the diameter of the rotor. The attenuating blast ring has an inside diameter about equal to the outside diameter of the rotor, and the attenuating blast from this ring is directed axially downstream from the rotor.

3,372,012
FIBER ATTENUATING BURNER
William F. Porter, Roselle, Ill., assignor to United States Gypsum Company, a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,994
3 Claims. (Cl. 65—14)

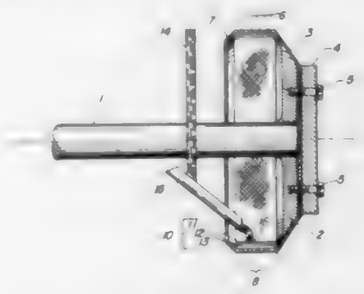


Apparatus for manufacturing fibers including a fiberizing rotor and an encircling gas burner having a combustion chamber to operate at superatmospheric pressure, with a plurality of inlets on the downstream side of the burner and radially remote from said rotor, and a refractory liner on the upstream wall of the burner opposite the inlets so that incoming pressurized gases are directed against the refractory. A gas supply manifold is spaced downstream of said burner on rigid supports and is connected to the inlets by flexible conduits which occupy a minor portion of the circumference of the manifold.

3,372,013
APPARATUS FOR FORMING FIBERS
William F. Porter, Roselle, Ill., assignor to United States Gypsum Company, a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,734
8 Claims. (Cl. 65—15)

Fiberizing apparatus including a rotor having a peripheral wall with a plurality of rows of orifices, the rotor being mounted on a shaft disposed at an angle to the vertical with the inner surface of the lower portion of the wall exposed upwardly beneath the bushing of a forehearth. The melt to be fiberized falls directly from the bushing of the forehearth onto the upwardly exposed inner surface of the rotor wall, over the orifices. Additionally, a current of gas of varying intensity may be impinged on the falling stream to oscillate the stream across the width of the orifice band.

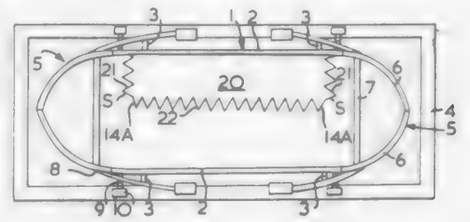
3,372,014
APPARATUS FOR FORMING FIBERS
Jack W. Garrison, Evanston, Ill., assignor to United States Gypsum Company, a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,735
4 Claims. (Cl. 65—15)



Apparatus for forming fibers including a rotor with orifices through its wall and a distributor having a plurality of radially superposed foraminous layers within the rotor and contacting the wall.

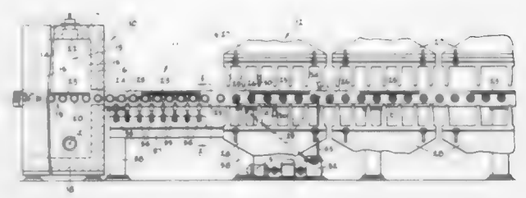
3,372,015
METHOD OF AND APPARATUS FOR EQUALIZING THE COOLING OF A GLASS SHEET SUPPORTED ON A BENDING MOLD
Ronald E. Richardson, Oshawa, Ontario, Canada, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 12, 1964, Ser. No. 366,744
Claims priority, application Canada, Nov. 15, 1963, 889,119
9 Claims. (Cl. 65—103)

Apparatus and method of bending, annealing and cooling glass wherein the glass sheet is supported at its marginal edges on an outline type bending mould and conveyed through bending, cooling and annealing zones of a conventional bending lehr. A heat sink in the form of a confined, heated body of air is maintained in contact with a portion of the sheet inboard of the trailing edge of the latter thereby retarding the cooling of said sheet portion during the cooling and annealing stages and hence promoting toughening of the trailing edge of the sheet. The



body of air is confined by means of an air barrier in the form of a relatively thin metal sheet underlying at least the sheet portion mentioned above and spaced therefrom to form a confined chamber. The metal sheet is connected to the central trailing edge portion of the bending mould in a manner to prevent substantial escape of the heated air from the chamber.

3,372,016
METHOD FOR TEMPERING AND CONVEYING GLASS SHEETS
Donald D. Rahrig and Thomas B. O'Connell, Toledo, and Charles W. Ferguson, Perrysburg, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Continuation of abandoned application Ser. No. 284,585, May 31, 1963. This application July 7, 1966, Ser. No. 563,614
2 Claims. (Cl. 65—114)

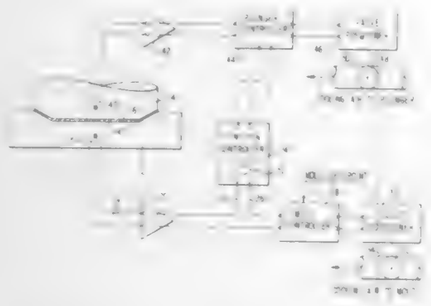


A method of tempering glass sheets wherein the sheets are conveyed along a horizontal path through a heating zone and heated to substantially the softening point of the glass and then moved out of said zone and subjected to blasts of cooling air to temper the glass, all while supported upon and in contact with a roller conveyor. The top surface of the sheet is heated to a higher temperature than the bottom surface thereof as the sheet passes through the heating zone to bow the sheet upwardly. As the sheet leaves the heating zone, the bottom surface only is subsequently heated to equalize the temperatures in the sheet and remove the bow, and simultaneously with such subsequent heating a gaseous medium is applied to the bottom surface only of the sheet to increase the resistance thereof to breakage.

3,372,017
AUTOMATIC TEMPERATURE CONTROL FOR GLASS MOLDING PROCESS
Richard B. Pitbladdo, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Jan. 7, 1965, Ser. No. 424,107
3 Claims. (Cl. 65—162)

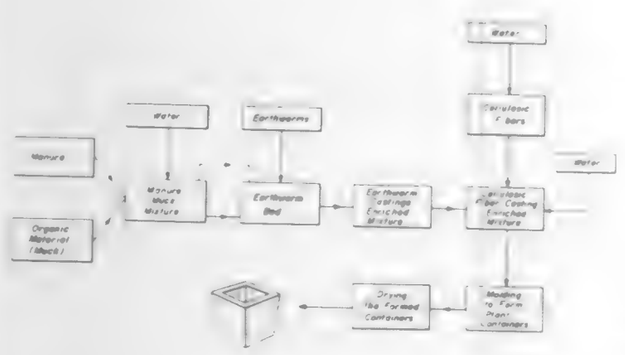
A method and apparatus for automatically controlling the mold and plunger temperatures in a free glass pressing

process so that the glassware does not stick to the plunger when the plunger is removed from the mold. The mold temperature is controlled to maintain it within a desired operating range, and the plunger temperature is controlled as a function of the mold temperature to maintain the



plunger temperature at a desired value lower than the mold temperature so that the glassware does not stick to the plunger. The process function which determines the relative plunger temperature may be changed by an adjustable function controller to match the process to the characteristics of the particular article being molded.

3,372,018
METHOD OF PRODUCING NUTRIENT-CONTAINING PLANT CONTAINERS
Donald D. Stocker, Hallandale, Fla. (Box 732, Russell Point, Ohio 43348), and Frank E. Stocker, Lakeview, Ohio (6960 NW. 27th St., Hollywood, Fla. 33024)
Filed Feb. 2, 1966, Ser. No. 524,591
4 Claims. (Cl. 71—21)



1. The method of producing a formed self-sustaining nutrient containing plant container characterized by a high wet-strength which comprises:

(a) moistening a mixture of about 50% by volume of cow manure and 50% by volume of muck with sufficient water to permit thoroughly blending the mixture;

(b) subjecting the blended mixture to the action of earthworms for a period of about three to seven days to permit enrichment of the mixture with castings produced by the worms;

(c) covering the worm casting enriched mixture with a layer of a fresh mixture prepared as in (a);

(d) saturating the top layer of fresh mixture with sufficient water to cause earthworms to migrate from worm casting rich lower layer to the top layer of fresh mixture, and removing the worm laden fresh top layer to expose the worm casting enriched lower layer;

(e) admixing on the basis of volume about 50% of the worm casting enriched mixture with 50% cellulosic material such as obtained from disintegrated moist newsprint stock and plasticizing the mixture with sufficient water to permit molding the mixture;

(f) molding the plasticized worm casting-cellulosic fiber mixture into plant receiving containers;

(g) thoroughly drying the moist plant receiving containers to render them self-sustaining and inactivate substantially all viable earthworms which may be present in the formed containers.

3,372,019
SLOW-RELEASE COATING COMPOSITION CONSISTING OF WAX AND ETHYLENE VINYL-ACETATE
Richard C. Fox, San Rafael, Calif., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Sept. 28, 1964, Ser. No. 399,855
3 Claims. (Cl. 71—64)

1. As a slow-release material, a water-soluble particulate body having a uniformly distributed coating on said body comprising a mixture of from 25 to 95% by weight of a wax and from 5 to 75% by weight of a copolymer of ethylene and vinyl acetate, and wherein said coating comprises from 2 to 25% by weight of said material.

3,372,020
PROCESS FOR MAINTAINING THE GROWTH OF PLANTS
Joseph Regenstein, Jr., Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Continuation-in-part of application Ser. No. 343,224, Feb. 7, 1964. This application Nov. 7, 1966, Ser. No. 592,327
4 Claims. (Cl. 71—85)

A process for maintaining the growth of plants which comprises applying thereto a discontinuous film of thermoplastic, petroleum-derived, inelastic, nonrubbery hydrocarbon resin having a softening point of from about 50 to about 200° F., a mixed aniline point of from about 20 to about 80° C., an iodine number of from about 70 to about 300, and a molecular weight of from about 300 to about 1400 as determined by cryoscopic means, by applying to the said plants a predominantly aqueous, resin-in-water emulsion of said resin containing from about 1 to about 15% by weight of the resin in an amount leaving the said discontinuous film upon separation of the resin from the water.

3,372,021
TUNGSTEN ADDITION AGENT
Edward C. Forbes, deceased, late of Lewiston, N.Y., by Marjorie I. Forbes, executrix, Lewiston, Daniel H. Barbour, Niagara Falls, and Charles M. Brown, Lewiston, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed June 19, 1964, Ser. No. 376,550
5 Claims. (Cl. 75—.5)

1. As an alloy addition agent, a pressed mixture of elemental tungsten powder and elemental iron powder consisting essentially of about 50 to 80% tungsten and about 20 to 50% iron having a density between 50 and 75% of the theoretical density of the mixture and characterized by having an iron matrix in which the tungsten powder particles, in substantially their original size and shape, are embedded, the original particle sizing of the iron powder being substantially from about 48 to 200 mesh and the original sizing of the tungsten powder being substantially 10 to 50 microns.

3,372,022
PROCESS FOR ALLOYING METALLIC MELTS
Hans Guntermann, Essen-Steele, and Walter Bungardt, Essen, Germany, assignors to Elektro-Thermit G.m.b.H., Essen, Germany, a corporation of Germany
No Drawing. Filed Feb. 4, 1966, Ser. No. 525,148
Claims priority, application Germany, Feb. 27, 1965, E 28,782
8 Claims. (Cl. 75—27)

1. A process for preparing an alloyed metallic melt which comprises melting at least one alloying material with an exothermically-reacting mass and adding the molten material to the melt.

3,372,023
METHOD OF MONITORING AND CONTROLLING THE OXYGEN BLOWING PROCESS
Helmut Krainer and Jurgen Maatsch, Essen, Germany, assignors to Beteiligungs und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany, a corporation of Germany
Filed May 18, 1965, Ser. No. 456,713
Claims priority, application Germany, May 23, 1964, B 76,907
3 Claims. (Cl. 75—60)

1. A method of monitoring and controlling automatically the reactions occurring during the oxygen blowing process between the metal bath, the slag and the gas phase, comprising the steps of measuring continuously the amount of oxygen blown onto the metal bath per time unit and the volume of the waste gas and analyzing said waste gas for CO, CO_2, O_2 and H_2, transmitting said measured and composition values for computation and obtaining a value $\dot{O}_c$, characteristic for the distribution of oxygen in the occurring reactions according to the equation

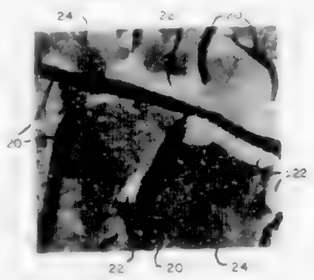
$$\dot{O}_c = \frac{1}{100}\cdot\frac{\dot{V}}{d\dot{O}_B/dt}\,[0.766\cdot CO + 1.266(CO_2+O_2) - 0.234H_2 - 26.82]$$

and controlling the course of the reactions by controlling the O_c=value, including controlling the amount of oxygen blown onto said metal bath, and the distance of the oxygen nozzle from said metal bath and the feeding of additives, respectively, wherein $\dot{O}_c$ denotes the ratio of the oxygen amount bound in the carbon of the metal bath per unit of time to the amount of oxygen blown in per unit of time, $d\dot{O}_B/dt$ denotes the amount of oxygen blown in per unit of time, $\dot{V}$ denotes the flow rate of dry waste gases converted to standard conditions, and CO, CO_2, O_2 and H_2 denote the volumetric percentage values of carbon monoxide, carbon dioxide, oxygen and hydrogen, respectively, contained in the dry exhaust gases within the gas exhaust system of a reaction vessel.

3,372,024
ZONE REFINEMENT OF LIQUID-PHASE SINTERED TUNGSTEN ALLOYS
Niranjan M. Parikh, Chicago, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Nov. 10, 1966, Ser. No. 594,317
4 Claims. (Cl. 75—84)

This process is a treatment of a sintered tungsten alloy for a matrix which utilizes zone refining for the removal of the low melting matrix while depositing therefrom the contained tungsten on the sintered tungsten for the production of practically pure tungsten.

3,372,025
METALLURGICAL PROCESS
John F. Wallace, Shaker Heights, Ohio, and Robert W. Newyear, Latrobe, Pa., assignors to Vulcan Mold and Iron Company, Latrobe, Pa., a corporation of Pennsylvania
Filed Nov. 17, 1964, Ser. No. 411,780
3 Claims. (Cl. 75—123)

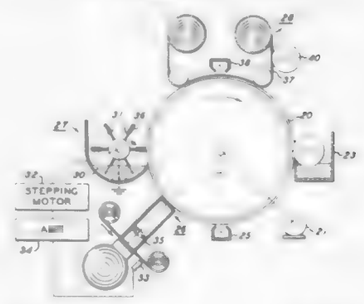


A method of altering the composition and microstructure of cupola melted gray iron by introducing anthracite coal. The anthracite coal increases the length of the graphite flakes. The pearlite in the matrix is reduced, the eutectic cell count of the structure is reduced, and the amount of ferrite in the matrix of the iron is increased.

3,372,026
HOT ROLLING NICKEL SILVER ALLOY
Richard J. Christine, Waterbury, Conn., assignor to Anaconda American Brass Company, a corporation of Connecticut
No Drawing. Filed Sept. 8, 1965, Ser. No. 485,954
4 Claims. (Cl. 75—157.5)

A nickel silver alloy possessing improved hot working properties consisting essentially of 7–30% Ni, 5–43% Zn, 0.003–0.3% Ti and the balance Cu present in the range of 45–75%.

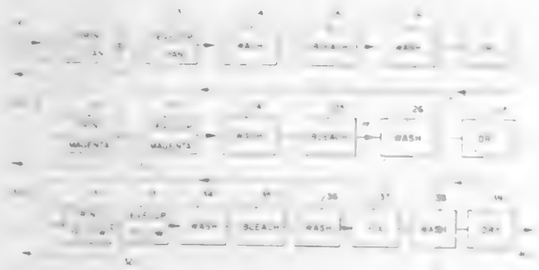
3,372,027
XEROGRAPHIC LIQUID DEVELOPMENT
Robert W. Gundlach, Victor, and Peter P. Augostini, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 15, 1964, Ser. No. 367,776
10 Claims. (Cl. 96—1)



Latent electrostatic images are developed by applying a homogeneous liquid having a bulk resistivity in the

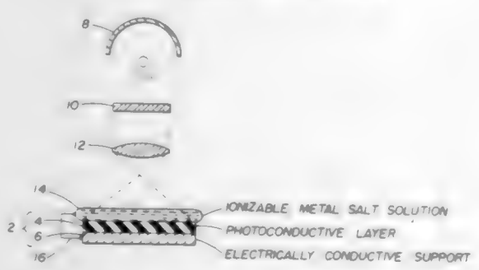
range of 5×10^4 ohms-cms. to 10^{14} ohms-cms. to the edge of a non-porous blade and wiping the edge of the blade across the latent electrostatic images.

3,372,028
COLOR PROCESS UTILIZING A SINGLE LAYER SILVER HALIDE EMULSION
Leo J. Nicastro, Los Angeles, Calif., assignor to Panacolor, Inc., Hollywood, Calif., a corporation of Delaware
Continuation of application Ser. No. 250,990, Jan. 10, 1963, which is a continuation-in-part of applications Ser. No. 81,751 and Ser. No. 81,752, Jan. 10, 1961. This application Sept. 14, 1967, Ser. No. 667,810
7 Claims. (Cl. 96—4)



This invention relates to an improved process for making photographic prints in natural color, and it is particularly directed to a process in which positive film stock having a single layer silver halide emulsion is exposed through one of three color separation negatives. There are no color couplers present in this single layer. These color separation negatives are extracted by conventional means and are black and white in form. The exposed film strip is then color developed to produce the first color which may comprise cyan, and is then chemically treated with a bleach to eliminate any latent image remaining after the first exposure and development steps. The film strip is then re-exposed through a second color separation negative, color developed and processed in a similar manner, this time producing the color magenta. The film strip is exposed for the third time using the third color separation negative, and is then color developed and processed as before to produce the yellow color. The printing apparatus in which the exposures are made is designed to maintain accurate registration. If desired, the film strip may be exposed prior to the last color development step to produce one or more sound tracks. After washing, fixing and drying, the film strip then comprises a full color print.

3,372,029
PROCESS FOR DEVELOPING PHOTOCONDUCTIVITY IMAGES IN ZINC OXIDE PHOTOCONDUCTIVE LAYERS
Nelson R. Nail, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 29, 1964, Ser. No. 407,371
4 Claims. (Cl. 96—48)



A process for forming images on a photoconductive sheet characterized by the steps of imagewise exposing a photoconductive zinc oxide layer carried on an electrically conductive support, contacting the layer, while the exposed areas are electrically conductive, with a solution containing an ionizable soluble metal salt, and providing a direct electrical connection which bypasses the zinc oxide layer and connects the solution and the support. The process is conducted in the absence of an externally applied electric field.

3,372,030
METHOD OF SHORTENING THE PROCESSING TIME OF COLOR PHOTOGRAPHY
Kurt Israel Jacobson, Epsom, England, assignor to The Pavelle Corporation, White Plains, N.Y., a corporation of New York
No Drawing. Filed Dec. 14, 1962, Ser. No. 244,561
1 Claim. (Cl. 96—55)

1. A method of shortening the processing time of color photographic sensitive material which comprises, providing a multi-layer emulsion-coated photographic material in which each layer incorporates closely spaced finely dispersed coupler and silver halide particles in a photographic dispersion medium, each emulsion layer being of the order of 2 microns in thickness, the ratio of silver to dispersion medium is substantially 1:1, the ratio of coupler to dispersion medium being substantially 1:3; exposing the material to form a latent image; converting the latent image to a visible image by subjecting the exposed material for a brief period at a temperature of between about 20° C. and 35° C. to the action of a highly alkaline aqueous solution of a developer selected from the group consisting of N-diethyl-p-phenylene diamine and substituted, more soluble derivatives thereof; immediately immersing the developed material for a brief period in a bleach-fix bath comprising an acid solution of a silver halide solvent and an acid-stable ferric salt of an alkylene amine polyacetic acid and then washing and drying the thus processed material.

3,372,031
DIRECT POSITIVE SILVER HALIDE ELEMENT WITH CONTIGUOUS COLLOID LAYER CONTAINING DEVELOPING AGENT
John Harold Baylis and Edward Cyril Dodd, Ilford, Essex, England, assignors to Ilford Limited, Essex, England, a British company
No Drawing. Filed July 30, 1964, Ser. No. 386,391
Claims priority, application Great Britain, Aug. 28, 1963, 34,090/63
6 Claims. (Cl. 96—76)

There is provided a process for the production of a photographic material. On a support, such as paper or the the like, is deposited a layer of a direct positive emulsion which is a fogged gelatino silver halide emulsion containing at least 95 mole percent of silver chloride and a desensitising agent effective to sensitise the Herschel effect to produce direct positive characteristics. When the emulsion is fully dried, a layer of a water permeable colloid and a developing agent for the emulsion is deposited and dried in less than 50 seconds. Alternately a thin water-permeable layer may be placed between the emulsion and developer layers.

3,372,032
PREPARATION OF A DRY MIXTURE OF STARCH HYDROLYSATE AND VEGETABLE MEAL
Marcel L. E. van Tittelboom, Sas Van Gent, Netherlands, assignor to Corn Products Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 30, 1964, Ser. No. 422,419
Claims priority, application Netherlands, Jan. 10, 1964, 64—146
4 Claims. (Cl. 99—2)

1. A process for preparing a dry, powdered product suitable for feeding animals which comprises intimately mixing about 50 to 60 percent, dry basis, of a starch hydrolysate liquor with vegetable protein meal to form a sticky mass having a moisture content not in excess of 13 percent, maintaining the temperature of said mixture at about 30 to 50° C. while slowly agitating the mixture until a dry, powdered product is obtained; said starch hydrolysate liquor having a D. E. value of at least 75 percent and a dextrose content of at least 50 percent and a solids content sufficient to permit crystallization of the dextrose therein at said temperature; said vegetable protein meal containing not more than 10 percent of oil.

3,372,033
RETINYLYDENE CYANO-ACETIC ACID, ESTERS AND SALTS THEREOF, AS AN EGG YOLK COLORANT EMPLOYED IN POULTRY FEED
Pieter Henri van Leeuwen, Van Houtenlaan, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Original application Oct. 3, 1962, Ser. No. 228,126. Divided and this application Feb. 8, 1965, Ser. No. 438,148
Claims priority, application Netherlands, Oct. 16, 1961, 270,292
4 Claims. (Cl. 99—4)

1. A poultry feed preparation comprising at least one poultry feed ingredient and a compound selected from the group consisting of retinylydene cyanoacetic acid, esters of said acid and salts of said acid with alkali metals and alkaline earth metals.

3,372,034
STARCH COMPOSITIONS AND IMPROVEMENT OF FOOD WITH SAME
John J. Magic, Markham, Ill., and Robert F. Frost, Griffith, Ind., assignors to American Maize-Products Company, a corporation of Maine
No Drawing. Filed Mar. 26, 1963, Ser. No. 267,954
16 Claims. (Cl. 99—83)

1. A composition particularly suitable for improving fat-containing foods which comprises starch and in admixture therewith at least about 0.1% based on the weight of said starch of particles of a synthetic compound containing oxides of sodium (Na_2O), aluminum (Al_2O_3) and silicon (SiO_2) in the proportions of about 0.8 to 1.3 moles Na_2O for each mol of Al_2O_3 and about 4 to 16 moles SiO_2 for each mol of Na_2O, substantially all of said particles being less than one micron in diameter.

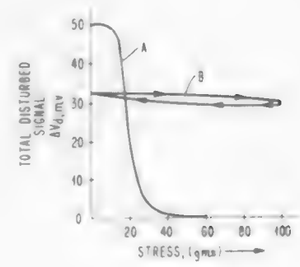
3,372,035
STABILIZED ICE CREAM COMPOSITIONS
Charles R. W. Morison, Ossining, N.Y., and Rosemary E. Weisse, Danbury, Conn., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 14, 1964, Ser. No. 389,103
4 Claims. (Cl. 99—136)

Frozen milk products such as ice cream are stabilized by incorporation therein of a small amount of water soluble hydroxyethyl cellulose. The hydroxyethyl cellulose serves to impart good whipping characteristics and to prevent ice crystal growth and the resulting stabilized product possesses adequate body, smooth texture, and a long storage life.

3,372,036
FOOD ANTIOXIDANTS
Robert W. Eltz, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Sept. 1, 1964, Ser. No. 393,730
14 Claims. (Cl. 99—150)

The specification discloses a process for stabilizing a foodstuff against oxidative deterioration. The specification also discloses a foodstuff composition containing an inhibitor against such deterioration. The process comprises incorporating into the fodstuff an inhibitor selected from the group consisting of the 2,3-enediols of 3-ketoglycosides and the higher fatty acid esters thereof. The inhibitor is a compound selected from the group consisting of 2,3-enediols of 3-ketomaltose, 3-ketosucrose, 3-ketolactose, 3-ketomaltobionic acid and 3-ketolactobionic acid and the fatty acid esters thereof.

3,372,037
MAGNETIC MATERIALS
Richard S. McGrath, Hopewell Junction, and Norman W. Silcox, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,355
10 Claims. (Cl. 106—1)



A process and plating bath for electrolessly plating a nickel-iron magnetic material comprising nickel ions, hypophosphite ions, hydroxyl ions and ferric ions.

3,372,038
SILICATE COATINGS
Helmut Hans Wilhelm Weldes, Havertown, and David I. Netting, Swarthmore, Pa., assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 311,215, Sept. 24, 1963. This application Aug. 18, 1964, Ser. No. 390,447
9 Claims. (Cl. 106—1)

1. A corrosion resistant coating composition for metal consisting essentially of:

(a) an aqueous solution of an organic ammonium silicate which is characterized by the formula

$$X(N_nR_p^s)_2O \cdot YSiO_2 \cdot ZH_2O$$

wherein:

N represents a nitrogen atom; n is a small integer less than 10 and preferably less than 5; X, Y, and Z represent numbers defining the relative amounts of each of the component parts of the compound, and more specifically, X is 1, Y is preferably between 0.5 and 50, and Z is preferably between 0 and 99; R represents alkyl radicals containing between 1 and 20 carbon atoms, at least one of which is an omega hydroxy alkyl group; up to four R groups being associated with each N;

p is at least 4, indicating total bonds of R groups to N; and

s is an integer from 1 to p, indicating the number of different types of R groups,

(b) a finely divided zinc powder in the amount of between about 6 to 20 grams of zinc powder per gram of SiO_2.

3,372,039

FLUOROACID AND ZIRCONIUM OXYHALIDE COMPOSITIONS AND MATERIALS TREATED THEREWITH

Domenick Donald Gagliardi, East Greenwich, R.I., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 27, 1964, Ser. No. 362,996
19 Claims. (Cl. 106—2)

Water, oil, strain and soil repellency are obtained on textiles and similar materials by treating them with an aqueous composition containing zirconium oxyhalide and a highly fluorinated carboxylic acid of from 3 to 17 carbon atoms and preferably one of from 7 to 17 carbon atoms having at least 70% of the hydrogen atoms replaced by fluorine atoms.

3,372,040

FIRE-RESISTANT CEMENTITIOUS PLASTER COMPOSITION

Frank Ware, 12092 Chillicothe Road, Chesterland, Ohio 44026

Filed Nov. 20, 1962, Ser. No. 238,861
1 Claim. (Cl. 106—15)

1. A fire-resistant plaster composition consisting essentially of (1) portland cement, (2) about 10–50% by weight of a natural-occurring phosphate rock having 0.25 to 40% by weight of P_2O_5 and a particle size ranging from about 10–350 mesh, (3) 2–12% by weight of lime, (4) 0 to 50% by weight of an exfoliated material selected from the group consisting of vermiculite, perlite, and mixtures thereof, (5) 0 to 2.0% by weight of an adhesive-binder, (6) and 0 to 1.0% by weight of a surface-active agent.

3,372,041

PROCESS FOR PRODUCING INKS

Rollins E. Dobbin and Curt B. Beck, Pampa, Tex., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

Application Jan. 18, 1965, Ser. No. 426,314, now Patent No. 3,294,567, which is a continuation of application Ser. No. 162,423, Dec. 27, 1961. Divided and this application June 4, 1965, Ser. No. 461,289
6 Claims. (Cl. 106—20)

The present invention relates to the production of improved newsinks. Broadly, the instant process is accomplished by dispersing into a newsink vehicle an oil or oil/water emulsion pelleted carbon black from which the finest 5 to 20 weight percent fraction has been removed. The newsinks resulting from the practice of the process contain exceptionally low residue concentrations.

3,372,042

HOT TOP AND COMPOSITION THEREOF

John C. Wright, Euclid, Ohio, assignor to Columbiana Incorporated, a corporation of Ohio

No Drawing. Filed June 15, 1965, Ser. No. 464,185
2 Claims. (Cl. 106—38.3)

This invention is in a refractory-combustible hot top composition including an organic fibrous material, sodium silicate and a fused lightweight aluminum silicate containing aggregate in which all of the volatile gases have been driven off.

3,372,043

SPRAY DRIED CLAY PRODUCT AND METHOD FOR PRODUCING THE SAME

John R. Fanselow, Plainfield, N.J., assignor, by mesne assignments, to Engelhard Minerals & Chemicals Corporation, Edison, N.J., a corporation of Delaware

No Drawing. Filed Feb. 21, 1966, Ser. No. 528,800
10 Claims. (Cl. 106—72)

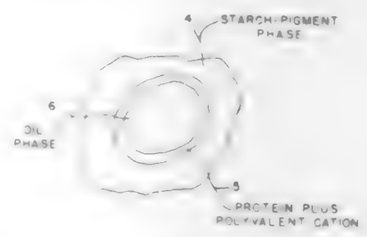
A coarse size fraction of predispersed kaolin clay pigment for paper filler use is obtained by spray drying a dispersed aqueous slip of the kaolin clay in the presence of a small amount of added colloidal clay, preferably colloidal attapulgite clay. The spray dried microspheres are less fragile as a result of the presence of colloidal clay additive and maintain desirable flow properties during handling and use.

3,372,044

METHOD AND COMPOSITION FOR FORMING PAPER HAVING OPAQUE CELLULAR STRUCTURE

Robert E. Weber, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed June 30, 1964, Ser. No. 379,209
6 Claims. (Cl. 106—130)



A coating composition for paper of the oil-in-water type. The continuous phase of the emulsion includes pigment and a starch binder. The disperse phase is an oil having a lower vapor pressure than water. The composition has as the emulsifier a protein. The aqueous phase is substantially free of protein. The composition includes polyvalent metallic cations which tend to concentrate in and serve as a hardening agent for the protein in the product. The product, that is the composition, when coated on paper and heated to drive off the liquids of the composition, is a surface finish coating having voids due to oil evolution, the voids having the walls thereof of protein and hardened by the cation action to minimize sensitivity to water.

3,372,045

ASPHALT COMPOSITIONS AND PROCESS FOR PREPARING SAME

Lester A. H. Baum, Cherry Hill, N.J., and Leonard Henschel, Flushing, N.Y., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 4, 1963, Ser. No. 313,758
10 Claims. (Cl. 106—279)

1. A process for preparing a heat-stable thermal asphalt which comprises:

blending a resinous pitch material deficient in high-boiling aromatic oils and having a softening point (R. & B.) from about 75° F. to about 140° F., a specific gravity at 77° F. from about 1.0 to about 1.3 and a Conradson carbon number from about 25 to 45%, with

a liquid furfural extract containing at least about 50% by weight of high-boiling aromatic oils, and having a viscosity at 210° F. SUS from about 40 to about 500; an A.P.I. gravity at 60° F. from about 5.0 to about 20; a flash point from about 300° F. to about 625° F.; and a pour point of at least 20° F.; and

distilling the resulting blend to produce a heatstable thermal asphalt having a softening point (R. & B.) from about 150° F. to about 270° F.

3,372,046

SILICA PIGMENTS AND PROCESS FOR PRODUCING SAME

Oliver W. Burke, Jr., 506 Intracoastal Drive, Fort Lauderdale, Fla. 33306

Filed May 24, 1965, Ser. No. 458,132
20 Claims. (Cl. 106—288)

1. A silica pigment which has been prepared by contacting an aqueous solution of alkali metal silicate having a temperature of 80±10° C. with dilute carbon dioxide having a temperature in excess of 374° C. derived from a hydrocarbon rich flame, said pigment containing constituents derived from the cracking of hydrocarbon in the hydrocarbon rich flame and retained by the pigment during filtering and washing.

3. In a process for preparing a silica pigment which includes the steps of

(a) mixing an aqueous alkali metal silicate solution and carbon dioxide to form a slurry of wet silica pigment, the improvement which consists in:

(b) conducting at least the latter part of the mixing in step (a) at least in part by introducing hot gaseous combustion products of hydrocarbon comprising carbon dioxide into the solution at a temperature in excess of 374° C.

3,372,047

COLOR STABILIZED MICA

Howard Richard Linton, Scotch Plains, and Edward F. Klenke, Jr., Liberty Corner, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 11, 1965, Ser. No. 494,395
9 Claims. (Cl. 106—291)

Stabilization of mica to inhibit discoloration on subjection of the mica to calcination at 600–1000° C. or on employment as a substrate in nacreous pigment manufacture in which the mica is coated with a metal oxide (TiO_2, ZrO_2, Fe_2O_3, etc.), such stabilization being effected by directly mixing the mica prior to calcination with from 1–50% and preferably from 5–10%, by weight, calculated as Al_2O_3, of an aluminum compound (an oxide, silicate, sulfate, and halide).

3,372,048

PROCESS FOR THE COLOR RESTORATION OF FADED TEXTILE MATERIALS AND ARTICLES PRODUCED THEREBY

Leonard Weissbein, Basking Ridge, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 31, 1963, Ser. No. 299,094
11 Claims. (Cl. 117—2)

1. A process for the restoration of the color of a faded, dyed, substantially opaque fibrous textile material which comprises applying to the surface fibers of said faded material a solution of an organic polymeric film forming material, which solution wets the surface fibers and transparentizes the faded fibers to thereby expose unfaded color of the fibers beneath the surface of the faded textile, and drying to yield a textile material coated with from about 1% to about 10% of the weight of said textile material of a permanent, transparent, colorless, organic film having an index of refraction similar to that of the textile fibers.

3,372,049

POLYOLEFIN FILM COMPOSITION, FILM, AND PRESSURE-SENSITIVE ADHESIVE SHEET MATERIAL

Albert N. Schaffhausen, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Oct. 9, 1961, Ser. No. 143,546
6 Claims. (Cl. 117—7)

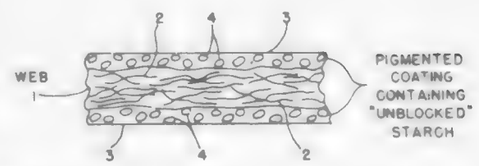
1. A poly-mono-alpha-olefinic composition which can be formed into a sheet capable of biaxial orientation to a uniform thickness of at least about 1 mil and to a tensile strength of substantially more than 6,000 p.s.i. in mutually perpendicular directions, comprising a uniform physical blend, solid at room temperature, of polymers consisting essentially of from about 50% to about 75% predominantly crystalline isotactic polypropylene having an average molecular weight of at least 250,000 and correspondingly from about 50% to about 25% of at least one separately prepared predominantly crystalline poly-mono-alpha-olefinic homopolymer other than polypropylene.

3,372,050

PAPER COATING COMPOSITION AND METHOD OF COATING

Robert E. Weber, 518 Hayleh St., Neenah, Wis. 54956

Continuation-in-part of application Ser. No. 254,965, Jan. 30, 1963. This application Feb. 7, 1966, Ser. No. 525,762
8 Claims. (Cl. 117—64)



Stable printing paper coating compositions and a process of coating paper with the compositions; the compositions are aqueous emulsions characterized by starch as constituting the only essential binder of the paper coating composition. The starch is in the aqueous phase and the emulsion contains an oil of lower vapor pressure than water in the disperse phase as well as an emulsifying agent which is of a molecular structure to inhibit the formation of a channel complex which would adversely affect starch binding strength. In the practice of the process the composition is heated on the paper and successive volatilization of water and oil result in a cellular coating. The cellular structure is produced rapidly and accepts supercalendering action without collapse. The coated paper product has an excellent pick resistance and is suitable for letterpress printing.

3,372,051

METHOD OF PREPARING METAL OXIDE-METAL SULFIDE PLURAL COATED SILICEOUS FIBERS

Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,552
10 Claims. (Cl. 117—69)

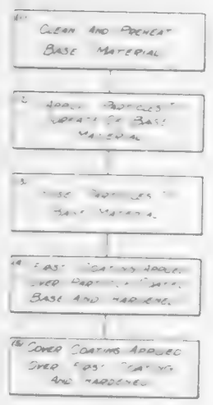
Siliceous fibers are provided with a porous metal base coating consisting of the oxides of chromium, zirconium, aluminum, titanium, cobalt and/or iron, formed by the hydrolysis and subsequent thermal dehydration of from 5–25% by weight of the combined weight of substrate and coating, of a water soluble metal salt wherein the base coating is subsequently impregnated with a different water soluble metal salt, or combination of salts, reacted with a sulfide yielding compound to form, in situ, the sulfides of these different metals consisting of barium, silver, lead,

cadmium, lithium and/or zinc. High temperature and abrasion resistant siliceous fibers are disclosed for use in high temperature applications, wherein said lubricious coating, as it is worn away, replenished from its reservoir in the porous metal base coating.

3,372,052
WATER REPELLENT FOR MASONRY
Matt C. Polniaszek, Lancaster, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 24, 1964, Ser. No. 421,092
30 Claims. (Cl. 117—72)

A water repellent for masonry comprising (1) a liquid diluent such as watur, (2) a water soluble fluosilicate, and (3) a polysiloxane.

3,372,053
COATING PROCESS
Daniel N. McCarthy, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,625
3 Claims. (Cl. 117—70)



1. The method of firmly attaching coatings of polytetrafluoroethylene to the interior smooth surfaces of glass cooking vessels which comprises the steps of bringing the vessels to a uniform temperature from between room temperature and about 100° F., mixing glass frit particles with a temporary tacky binder, spraying the frit particles generally uniformly over said surfaces of the vessels with the frit particle spacing being less than about one frit diameter, heating the vessels and frit for driving off the binder and fusing the surfaces only of the frit particles and bringing said surfaces of the vessels to a temperature near its fusing temperature, thereafter lowering the temperature of said vessel and frit surfaces whereby the particles are adhered to one another and form irregular and roughened layers on said surfaces of the vessels, applying a liquid dispersion of polytetrafluoroethylene of sufficient depth to form a first coating covering said layer on each of said vessels, hardening said coating, applying a more viscous liquid dispersion of polytetrafluoroethylene to form a thicker final coating on each of said vessels, and hardening said final coating.

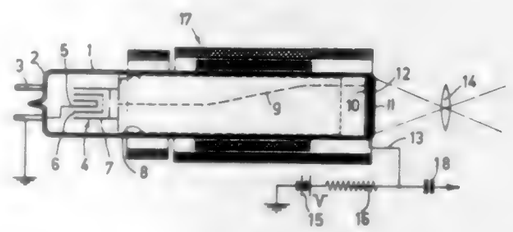
3,372,054
METHOD OF FLAME SPRAYING AND POWDER
Frederick T. Wishnie, Seaford, and Daniel P. Tanzman, Far Rockaway, N.Y., assignors to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York
No Drawing. Filed Oct. 27, 1964, Ser. No. 411,963
11 Claims. (Cl. 117—105.2)

1. A method of flame spraying metal powders that minimizes the effect of particle size distribution and configuration and any tendency of the powder composition to volatilize comprising the selection of a metal powder composition having a melting temperature ranging approximately from 360° F. to 2200° F., maintaining the particle size of said powder less than 40 mesh and approximately 75–100% by weight thereof approximately from −60 to +100 mesh, preheating said metal surface approximately to its bonding temperature with said heated metal powders whereby coalescence therewith is achieved, and flame spraying said powdered metal upon said metal surface within an oxy-fuel gas flame to plasticize said powdered metal without volatilizing it and to impinge it upon said preheated metal surface whereby it coalesces and bonds therewith to form a smooth continuous coating upon said metal surface.

3,372,055
CATALYTIC CHROMIUM PLATING PROCESS EMPLOYING BIS(ARENE)CHROMIUM
Frank P. Macfarlane, Jr., St. Albans, and Bernard I. Pesetsky, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed May 18, 1965, Ser. No. 456,805
15 Claims. (Cl. 117—107.2)

1. A process for producing a chromium plate on a platable solid substrate in an inert atmosphere, which process comprises contacting said substrate over the area to be plated with (a) a bis(arene)chromium compound of the formula $(Ar)_2Cr$ wherein Ar designates an organic hydrocarbon selected from the group consisting of aromatic hydrocarbons containing an isolated benzene ring and aryl-substituted benzenes, in mutual contact with (b) a catalytic amount of a sulfur-containing catalyst selected from the group consisting of elemental sulfur and sulfur compounds wherein the substituents attached to the sulfur atom are composed of atoms selected from the group consisting of carbon, hydrogen, oxygen, nitrogen and halogen, said catalyst being present in an amount sufficient to catalyze the thermal decomposition of said bis(arene)chromium compound, and heating said bis(arene)chromium compound and said catalyst in contact with said substrate at a temperature of at least the decomposition temperature of said bis(arene)chromium compound in contact with said catalyst and below about 330° C., thereby producing a chromium plate on said substrate.

3,372,056
METHOD OF MANUFACTURING A PHOTORESPONSIVE DEVICE COMPRISING A PHOTORESPONSIVE PbO LAYER
Edward Fokko de Haan, Paulus Philippus Maria Schampers, and Johannes Hendrikus Nicolaas van Vucht, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 10, 1964, Ser. No. 350,713
Claims priority, application Netherlands, Mar. 12, 1963, 290.119
30 Claims. (Cl. 117—200)

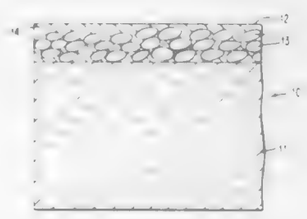


A method of making a photoresponsive device, in particular a television camera tube, employing a layer of PbO in which the PbO is vapor-deposited and subjected to the action of oxygen in combination with water vapor, hydrogen sulfide, tellurated or seleniated hydrogen to render the layer of PbO photo-sensitive.

3,372,057
COATED ELECTRODE FOR ARC WELDING OF CAST IRON
Horst Seifahrt, Lausanne, Switzerland, assignor to Societe des Soudures Castolin S.A., St. Sulpice, near Lausanne, Switzerland
No Drawing. Filed Sept. 4, 1964, Ser. No. 394,607
Claims priority, application Switzerland, Sept. 6, 1963, 11,087/63
5 Claims. (Cl. 117—206)

An electrode suitable for arc welding cast iron, gray cast iron, globular cast iron, and the like is provided by using ferro-nickel as a core element coated with a composition containing an alkali earth metal, fluorine, aluminum, silicon oxide, iron, carbon dioxide in form of a carbonate and carbon. A binder for the above components and a plasticizer for the coating is also provided. An iron to nickel relationship of approximately 40 to 60 to a 60 to 40 is suitable for the core element. A coating factor showing a relationship between the diameter of the coated electrode and the core is advantageously from 1.35 to 1.50.

3,372,058
ELECTRICAL DEVICE, METHOD AND MATERIAL
James R. Boyd, Austin, Tex., and Arthur H. Mones, Poughkeepsie, and John C. Schottmiller, Penfield, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 18, 1963, Ser. No. 331,534
11 Claims. (Cl. 117—227)

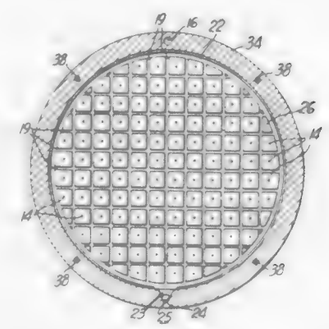


Metal glaze resistive compositions suitable for application to a ceramic dielectric comprising 15 to 70% of a palladium or rhodium oxide having a crystallite size with a surface area of at least 0.75 $m.^2/gm.$ and up to 35% of a conductive metal dispersed in a glass matrix comprising 35 to 70% vitreous enamel frit.

3,372,059
CHEMICAL REDUCTION PROCESS FOR SILVER, COPPER, OR NICKEL DEPOSITION
Harold H. Roth, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 321,362, Nov. 4, 1963. This application Apr. 24, 1967, Ser. No. 632,910
8 Claims. (Cl. 117—227)

This disclosure concerns a method for readily controlling the rate of deposition of an electroconductive film of silver, copper or nickel on a non-conductive surface by chemical reduction of an aqueous plating bath of a water-soluble silver, copper or nickel salt with a reducing agent by adding to such a conventional plating bath a small proportion of a water-soluble resinous polymeric acrylamide, which resinous polymeric acrylamide controls the rate of deposition of the silver, copper or nickel.

3,372,060
FLUID DISTRIBUTION MEANS IN A FUEL CELL
John L. Platner, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 26, 1962, Ser. No. 247,219
14 Claims. (Cl. 136—86)



1. A fuel cell comprising a fluid permeable electrode; a fluid distribution member adjacent the electrode and having a surface abutting the electrode; a reactive fluid chamber adjacent the member for receiving fuel fluid; said member having a plurality of distribution holes communicating between the electrode and the chamber and a recess in the surface abutting the electrode located between the distribution holes; means for delivering reactive fluid only to the distribution holes; and outlet means for receiving reactive fluid only from the electrode via the recess.

3,372,061
FUEL CELL INCLUDING POROUS PALLADIUM-SILVER ALLOY ELECTRODE
Jeremy Forten, New York, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 143,561, Oct. 9, 1961. This application Aug. 19, 1965, Ser. No. 480,886
5 Claims. (Cl. 136—86)

1. A fuel cell for the direct generation of electricity from a fuel and oxidant comprising a housing, a porous cathode comprising a palladium-silver alloy consisting essentially of palladium and from about 0.25–62 atomic percent silver, an anode and an electrolyte between said cathode and anode.

3,372,062
NOBLE METAL THERMOCOUPLE HAVING BASE METAL LEADS
Edward D. Zysk, Livingston, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed June 22, 1964, Ser. No. 377,129
3 Claims. (Cl. 136—227)

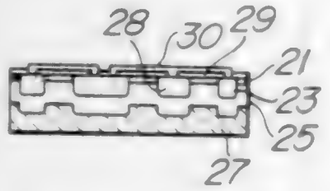
1. A thermocouple comprising a thermocouple positive leg wire composed of 82.5–83.5% palladium, 13.5–14.3% platinum and 2.8–3.3% gold by weight and a thermocouple negative leg wire composed of 64.5–65.5% gold, 34.0–35.2% palladium and 0–0.99% platinum, said positive leg wire and said negative leg wire being electrically joined to form a hot junction, a positive lead wire composed of 97.4–98.8% copper, 0.7–1.5% nickel, 0.5–1.1% manganese, and 0–0.01% carbon by weight, said positive lead wire being joined to said positive leg wire to form a tie point, and a negative lead wire composed of 45–60% copper, 40–55% nickel, 0–15% iron, 0–1.4 manganese and 0–0.1% carbon by weight, said negative lead wire being joined to said negative leg wire to form a tie point.

3,372,063

METHOD FOR MANUFACTURING AT LEAST ONE ELECTRICALLY ISOLATED REGION OF A SEMICONDUCTIVE MATERIAL

Michio Suzuki, Hachioji-shi, and Shoji Tauchi, Kokubunji-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Dec. 17, 1965, Ser. No. 514,481
Claims priority, application Japan, Dec. 22, 1964, 39/72,006
9 Claims. (Cl. 148—1.5)



A method for manufacturing at least one electrically isolated region of a semiconductive material, comprising the steps of depositing a first insulating layer in a predetermined pattern upon a substrate of monocrystalline semiconductive material, growing a semiconductive layer over both the exposed substrate and the insulating layer, whereby a monocrystalline layer is formed upon the exposed substrate and a polycrystalline layer is formed upon the insulating layer, subsequently, chemically etching both the monocrystalline and polycrystalline layers until the latter is completely removed while the former is only somewhat reduced in thickness, next applying a second insulating layer over both the exposed first insulating layer and the monocrystalline layer, and finally, depositing a material of high thermal conductivity over said second insulating layer and removing the semiconductor substrate.

3,372,064

METHOD FOR PRODUCING BLACK COATINGS ON METAL SURFACES

Robert R. Jones, Perry, and Howard G. Pekar, Cleveland, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 6, 1967, Ser. No. 607,622
10 Claims. (Cl. 148—6.15)

Black matte coatings which are uniform in appearance and thickness and stable under relatively severe wear conditions are produced on metal surfaces by treating the surface with an aqueous acidic solution of a trivalent antimony salt and then depositing a protective coating, preferably a phosphate coating, thereon. The coating is somewhat darker if the phosphate solution contains nickel, and the antimony-containing solution remains homogeneous over longer periods of time if it contains a small amount of a stannous salt.

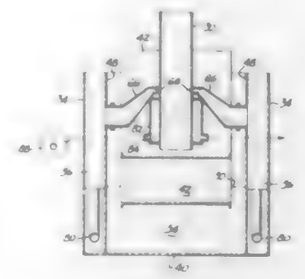
3,372,065

METHOD FOR HEAT TREATING ARTICLES

William R. Keough, Birmingham, Mich., assignor of forty-five percent to Multifastener Company, Detroit, Mich., a partnership

Filed Oct. 11, 1963, Ser. No. 315,467
7 Claims. (Cl. 148—13)

A method of heat treating articles by transfer from a heat treatment furnace into a quenching bath. The articles are passed through streams of cooling fluid continuously flowing towards the surface of the bath from a



point above the surface of the bath. The downwardly directed streams will eliminate splashing of the quenching liquid into the furnace.

3,372,066

COATED CARBIDE PARTICLES

Joseph F. Quaas, Island Park, N.Y., assignor to Eutectic Welding Alloys Corporation, a corporation of New York

No Drawing. Filed May 6, 1964, Ser. No. 365,503
17 Claims. (Cl. 148—24)

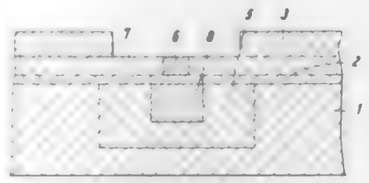
1. A discrete refractory carbide particle the surface of which is encompassed by a coating, said coating comprising a binder and a fluxing and protecting agent selected from the group consisting of boric acid, a metal borate, mixtures thereof and mixtures of said boric acid and metal borates with a member selected from the group consisting of metal fluoride, a metal chloride and mixtures thereof.

3,372,067

METHOD OF FORMING A SEMICONDUCTOR BY MASKING AND DIFFUSION

Horst Schäfer, Herrlingen, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed Feb. 25, 1964, Ser. No. 347,260
Claims priority, application Germany, Feb. 25, 1963, T 23,520
25 Claims. (Cl. 148—187)



17. A method of making a transistor, comprising the steps of: applying onto a semiconductor body made of a material selected from the group consisting of germanium and the Group 3–Group 5 compounds a layer of silicon in elemental form; oxidizing the silicon layer throughout a portion of its thickness; etching a base-diffusion window through the silicon oxide layer; diffusing impurities through said window and through the remaining silicon layer into the semiconductor body for forming the base zone; thereafter again oxidizing the remaining silicon layer throughout at least a portion of its thickness; etching an emitter-diffusion window through the last-created silicon oxide layer; and diffusing impurities through said last-mentioned window and through any remaining silicon layer into the semiconductor body for forming the emitter zone.

3,372,068

HEAT TREATMENT FOR IMPROVING PROOF STRESS OF NICKEL-CHROMIUM-COBALT ALLOYS

Carol Henry White, Burley Gate, and William Iain Mitchell, Solihull, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,087
8 Claims. (Cl. 148—162)

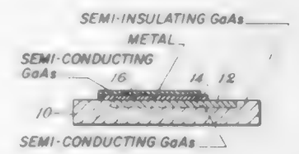
7. A process of heat treating a precipitation hardenable, columbium-containing, nickel-chromium-cobalt alloy to improve the proof stress characteristic thereof which comprises subjecting an alloy containing from 0.04% to 0.09% carbon, 18% to 22% chromium, 13% to 15% cobalt, from 4.7% to 5.3% columbium, 4% to 6.5% molybdenum, 2.1% to 2.75% titanium, 0.3% to 0.8% aluminum, the combined titanium and aluminum contents exceeding 2.5%, from 0.001% to 0.01% boron and from 0.01% to 0.1% zirconium, the balance, except for impurities, being nickel, to a solution heating within the range of 1050° C. to 1150° C. for from about ½ hour to 8 hours, cooling the alloy to retain the solution formed, pre-aging the alloy over the temperature range of about 630° C. to 670° C. for a period of ¼ hour to 8 hours to thereby develop a fine precipitate of substantially the gamma ′ phase but without concomitantly forming any appreciable quantity of the eta phase, aging the alloy at a temperature of 750° C. to 850° C. and thereafter cooling the alloy.

3,372,069

METHOD FOR DEPOSITING A SINGLE CRYSTAL ON AN AMORPHOUS FILM, METHOD FOR MANUFACTURING A METAL BASE TRANSISTOR, AND A THIN-FILM, METAL BASE TRANSISTOR

Louis G. Bailey, Richardson, and Edward W. Mehal, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 22, 1963, Ser. No. 317,917
13 Claims. (Cl. 148—175)



Disclosed is a semiconductor device such as a metal base transistor and the method of making the same. A semiconducting region is formed in a semi-insulating substrate and a metal film is deposited on at least a portion of the semiconducting region. Epitaxial growth is initiated on the substrate around the metal film and continued until the epitaxial growth reaches the upper surface of the metal layer, and then further continued so that the epitaxial growth extends in a lateral direction over the metal film.

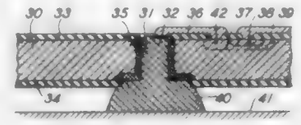
3,372,070

FABRICATION OF SEMICONDUCTOR INTEGRATED DEVICES WITH A PN JUNCTION RUNNING THROUGH THE WAFER

Paul Zuk, Allentown, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 30, 1965, Ser. No. 476,073
5 Claims. (Cl. 148—186)

1. The method of fabricating a semiconductor device including the steps of forming a slice of semiconductor material, perforating said slice to form at least one hole therethrough, said hole having a wall, diffusing a significant impurity through the wall of said hole to alter the conductivity of a zone adjoining said wall, vapor-depositing semiconductor material of the same conductivity type



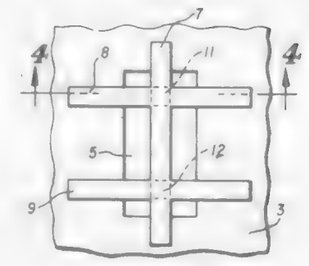
as the diffusant impurity upon said wall and within said hole and extending outwardly from at least one end of said hole, thereby to produce a pedestal portion of said semiconductor material.

3,372,071

METHOD OF FORMING A SMALL AREA JUNCTION SEMICONDUCTOR

Emery C. Wisman, Richardson, and Jack H. Abernathy, Jr., Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed June 30, 1965, Ser. No. 468,371
4 Claims. (Cl. 148—187)



Disclosed is a method of making a semiconductor device by forming a first slot into which an impurity material may be diffused. Thereafter, the surface containing the impurity is coated with an oxide and then an aperture opened therein by coating the oxide with a photosensitive material and subjecting the photosensitive material to light through two successive masks having clear and opaque regions to form a pattern resulting from the intersection of opaque region on said successive masks, said intersection being removed to form an opening in the photosensitive material.

3,372,072

GELLING WATER-BEARING EXPLOSIVES

Joseph D. Chrisp, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

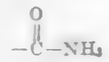
No Drawing. Filed Sept. 16, 1966, Ser. No. 579,852
17 Claims. (Cl. 149—20)

1. In the process for making water-bearing explosives which comprises bringing together water, fuel and an oxidizing component consisting essentially of inorganic oxidizing salt, the improvement which comprises gelling the aqueous phase of said explosives by copolymerizing in situ a mixture of mono- and polyethylenically unsaturated monomers soluble and stable in the system, said mixture comprising:

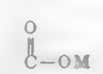
(a) about from 0.3 to 10%, by weight, based on the aqueous phase of monomer selected from at least one of the group consisting of (1) monomers having the formula

$$CH_2=\underset{\displaystyle R}{C}-X$$

wherein R is hydrogen, lower alkyl or hydroxyalkyl of up to 4 carbons, inclusive, X is —COOH,



or

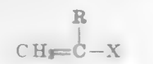


where M is alkali metal or ammonium, and (2) soluble salts of monovinyl pyridines; and

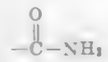
(b) about from 1 to 30%, based on the weight of (*a*) of polyethylenically unsaturated monomer polymerizable with (*a*) having at least two terminal methylene groups.

10. In water-bearing explosives comprising fuel, water and an oxidizing component consisting essentially of inorganic oxidizing salt, the improvement which comprises providing an aqueous phase thickened by the in situ polymerization of:

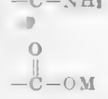
(a) about from 0.3 to 10%, by weight, based on said aqueous phase, of monomer selected from at least one of the group consisting of (1) monomers having the formula



wherein R is hydrogen, lower alkyl or hydroxyalkyl of up to 4 carbons, inclusive, X is —COOH,



or



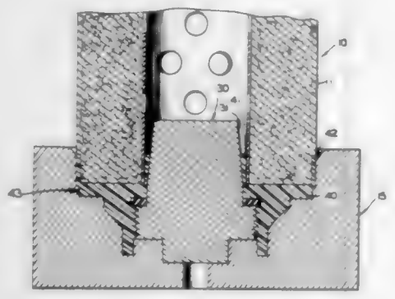
where M is alkali metal or ammonium and (2) soluble salts of monovinyl pyridines; and

(b) about from 1 to 30%, based on the weight of (*a*) of polyethylenically unsaturated monomer polymerizable with (*a*) having at least two terminal methylene groups.

3,372,073
PROCESS FOR MAKING A MOLDED FILTER ASSEMBLY

Mac C. Cutler, Los Gatos, Calif., assignor to Filters, Inc., San Jose, Calif., a corporation of California

Continuation of application Ser. No. 424,301, Jan. 8, 1965, which is a division of application Ser. No. 244,052, Dec. 12, 1962, now Patent No. 3,186,552. This application July 15, 1966, Ser. No. 568,693
7 Claims. (Cl. 156—69)



1. A method of securing a molded plastic resin end cap with threads and a ring gasket formed integral therewith to a filter cartridge comprising:

taking a mold die member with an annular cavity having an enlarged annular upper section, an annular tapered section therebelow terminating in a narrow annular section forming the bottom of the cavity, with threads on the inner surface of the cavity adjacent the tapered section, and a horizontal annular shoulder section in the cavity above the threaded formation to form a gasket seat;

placing a ring gasket on the horizontal shoulder section;

filling the cavity with liquid plastic material to cover the threads and gasket and substantially fill the cavity;

submerging the end of an annular filter cartridge into said cavity to a depth substantially adjacent the lower portion of said enlarged upper section; and

setting the plastic material until it hardens to a solid state.

3,372,074
MANUFACTURE OF LAMINATED SAFETY GLASS

Aime Louis Rocher, Sainte-Colombe-les-Vienne, and Henri Rhety, Venissieux, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

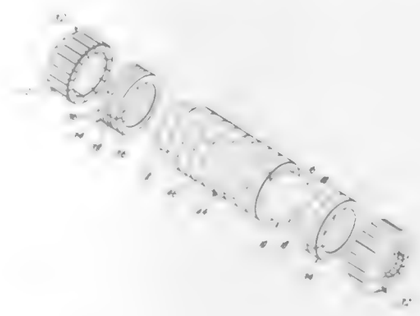
No Drawing. Filed June 12, 1964, Ser. No. 374,817
4 Claims. (Cl. 156—106)

The adhesion of plasticized polyvinyl butyral to glass sheets in the production of safety glass laminates is improved by conditioning the polyvinyl butyral in an atmosphere substantially saturated with water vapour or the vapour of an aqueous volatile acid.

3,372,075
METHOD OF MAKING AN INSULATED STORAGE TANK

Charles R. Holt, Norman, and Ray A. Madewell, Ardmore, Okla., assignors, by mesne assignments, to Amercoat Corporation, Brea, Calif., a corporation of California

Filed Mar. 6, 1964, Ser. No. 349,807
16 Claims. (Cl. 156—172)



11. The method of making an insulated storage tank using sandwich construction comprising,

helically winding a resin impregnated glass fiber inner shell including a cylindrical section and at least one dome shaped end section,

curing the inner shell,

preforming the core of insulating material for contouring over the dome section,

forming a short cylindrical section of insulating material sized to fit around the cylindrical section of the inner shell,

bonding the short cylindrical section to the dome shaped insulating material section,

placing the short cylindrical and domed sections of insulated material over the inner shell and attaching them thereto by winding glass fibers around the cylindrical section,

cutting a diagonal line across a rectangular section of insulating material forming first and second pie shaped transition pieces,

placing each of said pie shaped transition pieces on the inner cylindrical shell at each end,

helically wrapping segments of insulating material about the inner cylindrical shell and securing them thereto by wrapping with glass fibers,

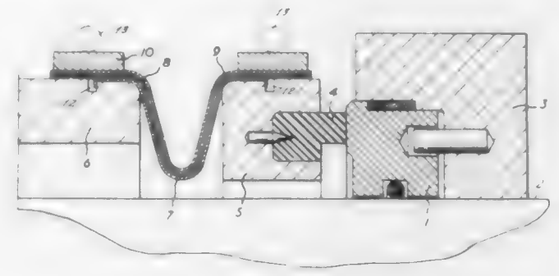
helically winding a resin impregnated glass fiber outer shell under tension over the insulation of said cylindrical and domed sections, and

curing the outer shell.

3,372,076
METHOD OF FORMING A FLEXIBLE BELLOWS CONNECTION BETWEEN AXIALLY SPACED MEMBERS

Samuel Clifford Walter Wilkinson, Cookham, England, assignor to Crane Packing Limited, Slough, England, a British company

Filed Jan. 31, 1964, Ser. No. 341,714
Claims priority, application Great Britain, Feb. 6, 1963, 4,928/63
5 Claims. (Cl. 156—190)

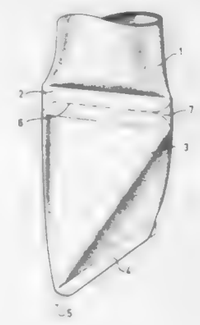


A large-diameter bellows type seal or expansion joint is assembled in situ by spirally wrapping successive layers of different materials including fabric, rubberised fabric, plastics or fabric-reinforced plastics and also including a flexible profiled metal strip circumferentially around axially spaced members of the joint and securing the spirally wrapped material to the axially spaced members by suitable clamping means.

3,372,077
METHOD OF MANUFACTURING PACKAGES

Stig Erik Sigvard Torudd, Palsjovagen 13, Lund, Sweden

Filed Aug. 5, 1963, Ser. No. 299,731
Claims priority, application Sweden, Aug. 8, 1962, 8,645/62
1 Claim. (Cl. 156—198)



1. A method of manufacturing tetrahedron shaped packages from a tubular blank of relatively stiff material comprising the steps of: supplying said tubular blank of relatively stiff material to a forming zone, forming a first seal in said tubular blank by flat pressing and heat sealing said blank in a relatively narrow rectangular zone and leaving a V-shaped unsealed area at each end of said seal, forming a second seal above and at an angle to said first seal in said tubular blank by flat pressing and heat sealing and blank in another relatively narrow rectangular zone leaving V-shaped unsealed areas at the ends of said second seal, severing said second seal substantially in the center thereof after sealing, and blunting the unsealed V-shaped areas in said first and second seals.

3,372,078
PROCESS FOR MANUFACTURING RUBBER STRIPS TO BE USED IN PNEUMATIC TIRES

Fulcieri Fausti, Bollate, Milan, and Angelo Morando, Milan, Italy, assignors to Pirelli, S.p.A., Milan, Italy

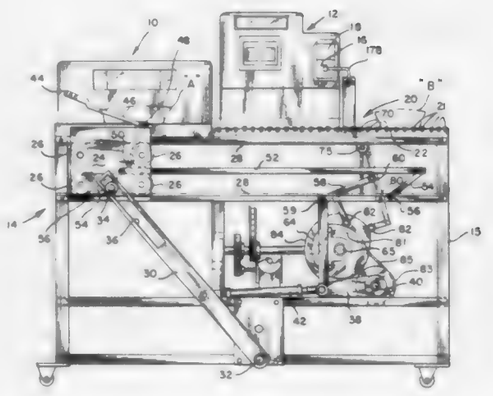
No Drawing. Filed Nov. 21, 1963, Ser. No. 325,445
Claims priority, application Italy, Dec. 5, 1962, 23,927/62
4 Claims. (Cl. 156—306)

A partially cured rubber insert for use in the manufacture of tires is prepared by superimposing two different rubber layers, each containing vulcanizing agents, moderately heating the superimposed layers to cause migration of the vulcanizing agents to the contact zone between the layers so that the inner portion of the resulting unit is cured while the outer portions of the unit remain uncured. The uncured portions of the unit are subsequently cured during the tire manufacturing process.

3,372,079
AUTOMATIC LABEL APPLYING MACHINE

Phillip J. Fellner and Edward S. Mickiewicz, Racine, Wis., assignors to Sturtevant Industries, Inc.

Continuation-in-part of application Ser. No. 451,397, Apr. 28, 1965. This application Feb. 23, 1966, Ser. No. 538,131
10 Claims. (Cl. 156—360)

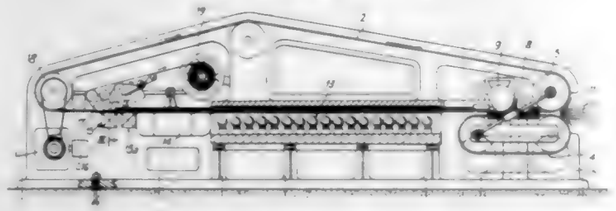


Automatic scale and label printing and applying machine for weighing and printing labels for prewrapped packages including a roller conveyor for the scale for permitting packages to move freely on the scale, come to a stop thereon for accurate weighing, and then be moved, off the scale, all without sticking or undesired hesitation of the package on the scale and without causing malfunction of the scale. The movement of the package onto the scale, its stopping for weighing, and its movement off the scale are all timed with the other functioning of the automatic machine such as stopping the appropriate package at the label applying station and subsequently removing it from said station.

3,372,080
MACHINE FOR THE MANUFACTURE OF FLEXIBLE BANDS FITTED WITH HOOKED ELEMENTS

Jean Billarant, 2 Ave. Odette, Nogent-sur-Marne, Seine, France

Filed Nov. 23, 1964, Ser. No. 412,899
Claims priority, application France, Nov. 29, 1963, 955,515
13 Claims. (Cl. 156—435)

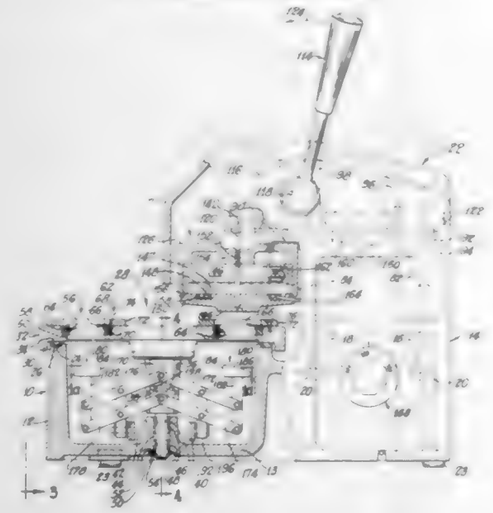


A machine for cutting loop-shaped elements, embedded in a sheet of plastic material, into hook-shaped elements.

3,372,081
APPARATUS FOR PRODUCING FUSED THERMOPLASTIC SEALS

Alfred A. Hurschman, Hudson, Ohio, assignor to Ampoules, Inc., Hudson, Ohio, a corporation of Ohio

Continuation-in-part of abandoned application Ser. No. 357,985, Apr. 7, 1964. This application July 21, 1964, Ser. No. 384,228
10 Claims. (Cl. 156—583)



A press for heat sealing plate-like thermoplastic resin comprising a pair of opposed relatively movable pressure-applying dies and an actuator linkage for moving the dies together. One of the dies has a soft elastomeric base upon which a relatively rigid contact member having a smooth planar face is mounted.

3,372,082
HOLLOW FILAMENTS OF A TETRAFLUOROETHYLENE POLYMER AND PROCESS FOR PREPARING THEM

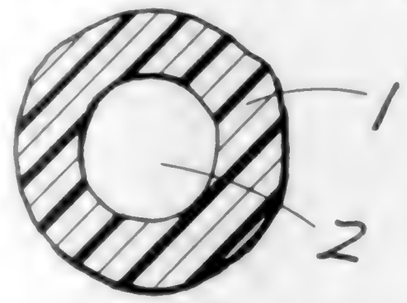
Yutaka Kometani, Hyogo-ken, Yutaka Koda, Osaka-fu, Tadahiko Sugino, Osaka-shi, and Hirokazu Izumi, Amagasaki-shi, Japan, assignors to Daikin Kogyo Kabushiki Kaisha, Osaka-shi, Japan

Filed Dec. 2, 1964, Ser. No. 415,327
Claims priority, application Japan, Dec. 6, 1963, 38/65,774
4 Claims. (Cl. 161—178)

Hollow filaments consisting of a tetrafluoroethylene polymer layer and an empty space cavity within, said empty space cavity comprising from 5 to 90 percent in terms of

$$\frac{S_b}{S_a + S_b} \times 100$$

wherein S_a is the total area of the tetrafluoroethylene polymer layer at a given cross-section of said hollow filament, and S_b is the total area of the empty space cavity formed therein at said given section produced by extruding a mixture of a viscose and an aqueous dispersion of a tetrafluoroethylene polymer at a temperature ranging from 50° to 100° C. into a setting medium selected from the group consisting of a bath containing

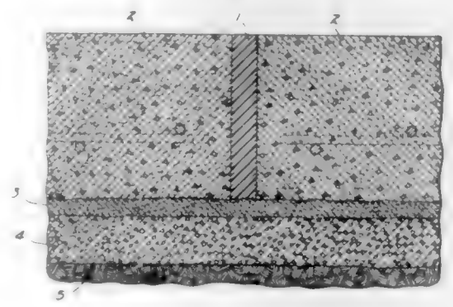


sulfuric acid in the order of from 6 to 60 percent by weight, a bath containing sulfuric acid in the order of at most 6 percent by weight and a sulfuric acid salt in the order of at least 5 percent by weight, a bath containing hydrochloric acid in the order of from 1 to 30 percent by weight, and a bath containing nitric acid in the order of from 1 to 50 percent by weight, and heating the resultant filament product to coalesce the tetrafluoroethylene polymer forming said filament product, said starting spinning mixture comprising cellulose in the order from 0.4 to 8 percent by weight and a tetrafluoroethylene polymer in the order of from 70 to 99 percent by weight of the combined weight of said cellulose and polymer.

3,372,083
COMPOSITIONS AND ARTICLES FROM THE REACTION OF AN ISOCYANATE TERMINATED POLYURETHANE AND THE ISOCYANATE ADDUCT OF BITUMEN

Robert M. Evans, Chesterland, and Bernardas Brizgys, Lyndhurst, Ohio, assignors to The Master Mechanics Company, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 11, 1964, Ser. No. 351,065
20 Claims. (Cl. 161—190)



Floor tile, and caulking for glass and concrete containing a polyurethane, cured by water from the air to a solid having an elongation capacity greater than 100%, is made from the reaction of an isocyanate terminated prepolymer and the isocyanate adduct of an unmodified tar. This may be prepackaged in a single container and hardened only when exposed to the moisture from the air at the point of use. Also chlorinated hydrocarbons and organic silicones may be included. The caulking materials may be applied to wet joints.

3,372,084
POST-FORMABLE ABSORBENT PAPER

Hanns F. Arledter, Chillicothe, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 323,571, Nov. 14, 1963. This application July 18, 1966, Ser. No. 565,688
13 Claims. (Cl. 162—128)

This invention relates to post-formable decor and overlay papers for use in plastic laminates, and to the laminates made therefrom. The papers are characterized by use of from 35 to 100% of fine fibers of vegetable or synthetic organic origin having a specific volume of 75–175 cubic microns and an average length over 2 mm. The balance of the fiber portion is paper making wood pulp. The papers contain an acid acceptor such as zinc oxide, calcium carbonate or calcium silicate, and are essentially neutral, as indicated by a pH of water extract in the range of 6.8 to 7.6, with an alkali number of 0.5 to 3.0. The plastic laminates using these papers as decor and/or overlay sheets are post-formable to a radius of ½ inch or less.

3,372,085
WATER-SOLUBLE POLYALKYLENEPOLYAMINE/URETHANE RESINS AND APPLICATION THEREOF IN PRODUCTION OF WET STRENGTH PAPER

Paul M. Westfall, St. Albans, and Nelson R. Eldred, South Charleston, W. Va., and John C. Spicer, Sidney, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 14, 1965, Ser. No. 447,959
11 Claims. (Cl. 162—164)

The cationic water-soluble resinous reaction product of (a) a polyfunctional halohydrin and (b) a resin produced by reaction of a polyalkylenepolyamine with a urethane formed by the reaction of an alkanol containing 1 to 6 carbon atoms and tolylene diisocyanate. The product is useful in paper products as a wet strength improving agent. The method for incorporation of the novel polymers in paper products, as well as the paper products are also novel.

3,372,086
WATER-SOLUBLE POLYALKYLENEPOLYAMINE/DIALDEHYDE RESINS AND APPLICATION THEREOF IN PRODUCTION OF WET STRENGTH PAPER

Paul M. Westfall, St. Albans, and Nelson R. Eldred, South Charleston, W. Va., and John C. Spicer, Sidney, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 14, 1965, Ser. No. 447,980
14 Claims. (Cl. 162—164)

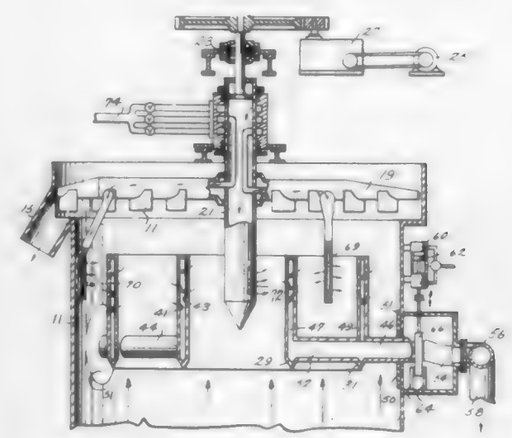
A cationic water-soluble resinous reaction product of (a) a polyfunctional halohydrin and (b) a resin produced by reaction of a polyalkylenepolyamine with a saturated aliphatic dialdehyde of 2 to 6 carbon atoms. The product is useful in paper products as wet strength improving agents. The method for incorporation of the novel polymers in paper products as well as the paper products are also novel.

3,372,087
SELF-CLEANING SIEVE DEVICE IN CONTAINERS FOR CELLULOSIC PULP

Johan C. F. C. Richter, St.-Jean-Cap-Ferrat, France, assignor to Aktiebolaget Kamyr, Karlstad, Sweden, a company of Sweden

Filed Apr. 20, 1964, Ser. No. 360,962
Claims priority, application Sweden, May 20, 1963, 5,556/63
7 Claims. (Cl. 162—251)

There is provided an apparatus for deliquefying a pulp suspension in connection with a chemical treatment and/or washing of the pulp, wherein sieve bodies are disposed in a container and the pulp suspension moves through the container in an axial direction. The sieve bodies are hollow and have sieve faces elongated in the direction of the pulp flow through which the liquid passes. The sieve bodies are moved in the direction of the pulp flow at substantially the same rate as the pulp flow whereby



washing liquids and/or treating chemicals move horizontally towards the sieve bodies and in a direction transverse to the pulp flow. After a predetermined movement of the sieve bodies, they are rapidly returned to their initial position whereby the rapid movement of the sieve bodies opposite to the direction of pulp flow removes fibers that have stuck to the sieve faces.

3,372,088
METAL PHOSPHIDE PESTICIDES

Werner Freyberg, am Weissenberg 33, and Wolfgang Friemel, am Weissenberg 9, both of Kirschhausen uber Heppenheim, Bergstrasse, Germany

No Drawing. Continuation-in-part of application Ser. No. 237,327, Nov. 13, 1962. This application Nov. 8, 1965, Ser. No. 506,846
Claims priority, application Germany, Nov. 25, 1961 F 34,416
10 Claims. (Cl. 167—14)

1. A pesticidal composition for combatting pests which comprises at least 50 percent by weight based on the total mixture of aluminum phosphide, calcium phosphide or magnesium phosphide in admixture with 0.5 to 50 percent by weight based on the total mixture, of an aluminum, cadmium, calcium, magnesium or zinc salt of an aliphatic monocarboxylic acid having between 12 and 22 carbon atoms in the fatty acid radical and 5 to 50 percent by weight based on the total mixture of a solid strongly hygroscopic compound which does not react with the phosphide, to protect the hydrophilic centers of the phosphide against moisture.

3,372,089
COMBATING *STAPHYLOCOCCUS AUREUS* WITH 3-THIETANOL

Arleen C. Pierce, New Brunswick, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 15, 1966, Ser. No. 572,241
2 Claims. (Cl. 167—33)

3-thietanol may be used effectively for combating microorganisms, particularly *Staphylococcus aureus* cells, in vapor phase.

3,372,090
STREPTONIGRIN ANTIBIOTICS AND PROCESS FOR THEIR PRODUCTION

William S. Marsh, Wanaque, Aline L. Garretson, River Edge, and Koppaka V. Rao, Pinebrook, N.J., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

Continuation-in-part of applications Ser. No. 753,967, Aug. 8, 1958, Ser. No. 823,469, June 29, 1959, Ser. No. 39,535, June 29, 1960, and Ser. No. 190,520, Apr. 17, 1962. This application July 5, 1963, Ser. No. 293,148

18 Claims. (Cl. 167—65)

1. A process for the production of an antibiotic containing product which comprises cultivating a strain of microorganism selected from the group consisting of

	ATCC
Streptomyces flocculus	13257
Streptomyces flocculus	13535
Streptomyces flocculus	13536
Streptomyces bottropensis	13854
Streptomyces fungicidus	13853
Streptomyces flocculus	13852
Streptomyces flocculus	13851
Streptomyces flocculus	13850
Streptomyces flocculus	13859
Streptomyces flocculus	13855
Isolate BA–90744	13856
Streptomyces flocculus	13860
Streptomyces flocculus	13857
Streptomyces flocculus	13861
Streptomyces flocculus	13862
Streptomyces flocculus	13858

in an aqueous nutrient medium under submerged aerobic conditions until substantial antibiotic activity is imparted to said medium.

3,372,091
METHOD FOR PREPARING HEXAMETHYLENETETRAMINE HIPPURATE AND TABLETS THEREOF

Stanley E. Harnett and Nicolas A. Lagoon, Sherman Oaks, Calif., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Jan. 25, 1965, Ser. No. 427,955

2 Claims. (Cl. 167—82)

This invention is directed to a method of preparing tablets of hexamethylenetetramine hippurate wherein the chemical reaction forming the hexamethylenetetramine hippurate occurs simultaneously with the preparation of a physical form of the salt which is suitable for tablet formation, said method comprising the mixing of substantially equimolar proportions of hexamethylenetetramine with hippuric acid in the presence of a liquid medium consisting of water only present in an amount of between about 0.5 and 12.5 percent by weight of the mixture, drying the mass, comminuting the dried mass, and forming tablets therefrom.

3,372,092
NUCLEAR REACTOR

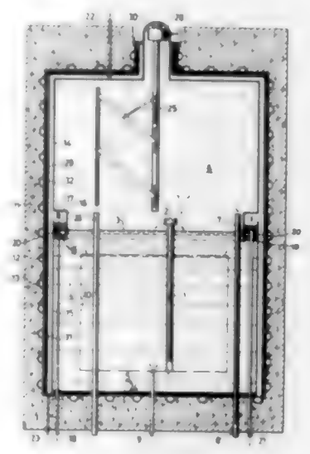
Peter Heinrich Erwin Margen, Nasbypark, Sweden, assignor to Aktiebolaget Atomenergi, Stockholm, Sweden, a corporation of Sweden

Filed July 21, 1965, Ser. No. 473,668

Claims priority, application Sweden, Mar. 12, 1965, 3,285/65

11 Claims. (Cl. 176—52)

1. A nuclear reactor, comprising a pressure vessel, a water space in the bottom of the pressure vessel, a reactive core within said water space, said reactor core containing fissile fuel to be cooled by water in said water space, a steam space in the top of the pressure vessel, a thin-walled shroud surrounding the steam space and spaced from the wall of the vessel to provide a relatively



narrow annular insulating space for a heat-insulating gas in said insulating space between the shroud and the wall of the pressure vessel, said shroud being provided with a water seal means for separating steam from said insulating space.

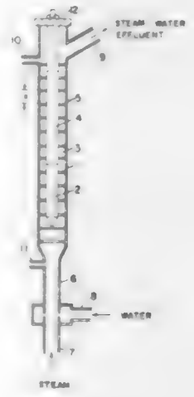
3,372,093
APPARATUS FOR INCREASING THE CRITICAL HEAT FLUX FOR HIGH PRESSURE STEAM/WATER FLOW IN NUCLEAR REACTORS

George A. Wikhammer and Ian P. L. Macdonald, both of Deep River, Ontario, Canada; and John G. Collier, c/o United Kingdom Atomic Energy Authority, Harwell, England

Filed Aug. 5, 1965, Ser. No. 477,478

Claims priority, application Canada, Aug. 31, 1964, 910,686

1 Claim. (Cl. 176—54)



A series of roughness rings attached to the inner surface of the fuel channels in a two-phased liquid-vapor cooled nuclear reactor of the type having the fuel in the form of a series of fuel bundles loaded inside pressurized fuel channels passing through the reactor and the coolant flowing under pressure through the channels, deflect or drive-off liquid that tends to collect on the inner surface of the fuel channels inwardly into the liquid-vapor coolant stream. This increases the temperature level at which the undesirable effects of "dry-out" will occur.

3,372,094
PROCESS OF MAKING CITRIC ACID BY FERMENTATION

William Gold, Spring Valley, N.Y., and Robert Kieber, Locust, N.J., assignors to Stepan Fermentation Chemicals, Inc., Keyport, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 74,793, Dec. 9, 1960, and Ser. No. 208,899, July 10, 1962. This application May 19, 1966, Ser. No. 551,194

5 Claims. (195—36)

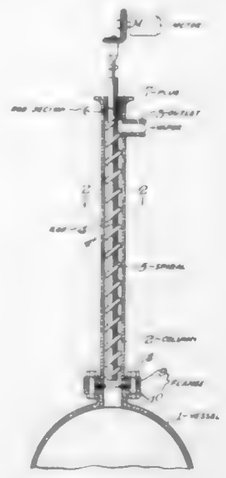
In the production of citric acid by fermentation, fatty material in amount of 0.05–0.3% v./v. is maintained in the medium throughout the fermentation. Increased yield and rate of fermentation are realized.

3,372,095
SEPARATOR

Ralph G. Nester, Fairfield, Del., assignor to Nester and Faust Manufacturing Corporation, a corporation of Delaware

Filed Nov. 5, 1964, Ser. No. 409,258

10 Claims. (Cl. 202—153)



A rotatable shaft having an embossed surface, the raised parts being in the form of helices extending along a substantial part of the shaft is provided, which shaft is placed within a column to be used in separation of liquids, as by distillation. The dimensions of the said shaft are such that in operation contact is made between the outermost portions of the helices and the inside walls of the column. The helices are present in the form of from about 0.5 to about 8 turns per inch. The apparatus also includes means for rotating the shaft, means for removing the material transported through the column, a means to connect the apparatus to a vacuum source and a reservoir for separated material.

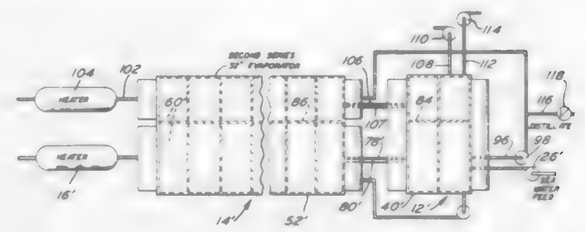
3,372,096
HIGH PURITY WATER FLASH EVAPORATOR WITH SERIES STAGES FOR REDISTILLATION OF DISTILLATE

Robert A. Tidball, Swarthmore, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware

Filed July 5, 1966, Ser. No. 562,715

5 Claims. (Cl. 202—173)

A flash evaporator wherein sea water is distilled in a first series of stages, and the resulting distillate is re-distilled in a second series of stages to provide a high purity distillate.

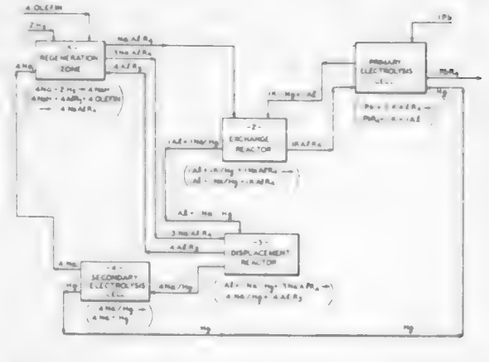


3,372,097
ELECTROLYTIC PROCESS FOR THE MANUFACTURE OF METAL ALKYLS

Karl Ziegler, Kaiser-Wilhelm-Platz 1, Mulheim (Ruhr), Germany, and Herbert Lehmkuhl, Mulheim (Ruhr), Germany; said Lehmkuhl assignor to said Ziegler

Filed June 28, 1963, Ser. No. 291,562

21 Claims. (Cl. 204—59)



1. Process which comprises passing an electrolysis current between a cathode and an anode through an electrolyte consisting essentially of a complex of the formula $KAlR_4$ wherein each R is alkyl, the anode being of a metal Me selected from the group consisting of lead, mercury, tin, and antimony, and the cathode being mercury, the electrolysis comprising decomposition of the electrolyte according to the following equation:

$$KAlR_4 + m\text{Me} \rightarrow K + Al + m\text{MeR}_n$$

wherein R and Me are as is defined above, n is the valence of Me and the product of m and n is 4, the metal alkyl being produced at the anode and the potassium being produced at the cathode and forming an amalgam with the mercury, the aluminum metal being in the amalgam, and separating aluminum from the amalgam.

3,372,098
PROCESS FOR RECOVERING SOLVENTS FROM ELECTROLYTES

Alfred O. Walker, Lake Jackson, Tex., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,104

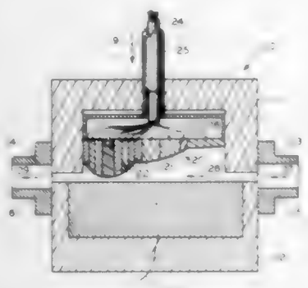
7 Claims. (Cl. 204—59)

1. In an electrolytic process wherein a mixture of a non-aqueous water immiscible organic liquid is separated from an aqueous brine in which at least 1% by volume of said liquid normally remains entrained when said liquid and said brine are mixed, the improvement which comprises increasing the amount of said liquid in said process to a point where an unstable emulsion is formed when said mixture is agitated, agitating said mixture to form said unstable emulsion, and thereafter separating the non-aqueous phase from the brine phase.

3,372,099
ELECTROCHEMICAL MACHINING USING A MULTISEGMENTED ELECTRODE WITH INDIVIDUAL CURRENT CONTROL FOR EACH SEGMENT

John E. Clifford, 357 Carilla Lane,
Columbus, Ohio 43228

Filed May 1, 1963, Ser. No. 277,194
34 Claims. (Cl. 204—143)



1. A method of electrolytically removing material from the surface of a workpiece comprising the steps of placing such surface in juxtaposition to but out of contact with an electrode tool comprising a plurality of conductive members insulated one from another and together providing a three-dimensional surface that is substantially complementary to a three-dimensional surface contour to be produced in the workpiece, supplying an electrolyte between the juxtaposed surfaces of the tool and the workpiece, advancing the juxtaposed surfaces relatively toward each other, and supplying current through the workpiece, the electrolyte, and the tool, the currents supplied to each of the conductive members of the tool being separately initiated with the current being supplied first to the member opposite which the greatest depth of material is to be removed from the workpiece, the current being supplied next to the member opposite which the next greatest depth of material is to be removed, and so on.

31. A method of preparing an electrode comprising the steps of tightly winding insulated wire around a cylindrical form in a plurality of contiguous layers, fastening the wound layers in fixed relation to a plane substantially parallel to the axis of said form, cutting through said layers in said plane, bending the resulting bundles of wires outwardly from the axis to provide space for access to the cut ends of the wires, the bundle of wires forming an electrode comprising a plurality of conductive members insulated one from another, and removing material from one surface formed by the ends of the wires to provide a conductive surface having a desired surface shape for use in electrolytic processes when current is supplied thereto by connections to the other ends of the wires.

34. A method of preparing an electrode comprising the steps of coating with aluminum the sides of a plurality of conductive members over a substantial area of each beginning adjacent to one end, further coating each said area with lead dioxide, assembling and retaining said conductive members in a bundle with said one ends forming a surface and with the coated areas of adjacent members in contact with each other, electroshaping said surface with said bundle connected as an anode in an electrolyte capable of anodically removing the materials of said members and the coatings thereon, heating said bundle to a temperature sufficient to diffuse oxygen from the outer coatings into the inner coatings to form a layer of aluminum oxide around each said conductive member and to cause the outer coatings of said members to adhere to each other, said surface being suitable for use in electrolytic processes when current is supplied thereto by connections to the other ends of said conductive members.

3,372,100
PROCESS FOR IMPROVING THE PROPERTIES OF A POLYMER BY CROSS-LINKING IN THE PRESENCE OF RADIATION

Arthur Charlesby, Shrivenham, Swindon, Wilts, and Solomon H. Pinner, Lexden, Colchester, England, assignors to Raychem Corporation, Redwood City, Calif., a corporation of California

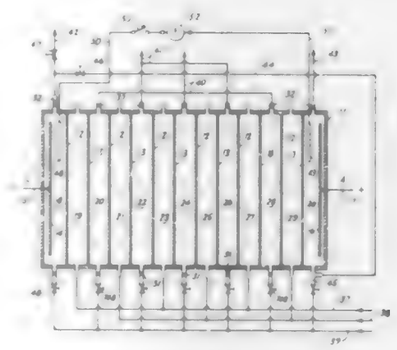
No Drawing. Continuation-in-part of application Ser. No. 639,218, Feb. 11, 1957. This application Feb. 11, 1963, Ser. No. 257,739
Claims priority, application Great Britain, Feb. 14, 1956, 4,587/56
2 Claims. (Cl. 204—159.17)

1. A process for improving the properties of polyvinyl chloride comprising the steps of mixing the polyvinyl chloride with less than its own weight of lauryl methacrylate and less than its own weight of ethylene dimethacrylate, forming the resulting mixture into a sheet, and then exposing said sheet to the action of high energy ionising radiation of energy greater than 100,000 electron volts to a dosage of between 0.1 and 10 megarads.

3,372,101
PROCESS OF PRODUCING HIGHLY REACTIVE COMPOUNDS BY METATHESIS

Paul Kollsman, 100 E. 50th St.,
New York, N.Y. 10022

Filed Oct. 8, 1962, Ser. No. 228,867
2 Claims. (Cl. 204—180)



1. The process of converting, under the influence of an electric current, a weakly acid compound composed of an anionic component A_1 and a cationic component C_1 into a strong acid compound, the process comprising,

maintaining the weakly acid compound, in solution, in a certain deionization chamber of a multichamber electrodialysis cell in which the space between the electrodes is subdivided into chambers by membranes of two kinds arranged in alternating sequence, the membranes of one kind being permeable to ions of one polarity and passage resistant to ions of the opposite polarity, the membranes of the other kind being permeable to ions of said opposite polarity, the membranes of the two kinds being arranged in alternating order, making every other chamber a deionization chamber and making the chambers between the deionization chambers product chambers, there being at least three chambers of one kind and at least two chambers of the other kind;

maintaining in at least another deionization chamber spaced from said certain chamber a solution of a companion source compound comprising a cationic component C_2 and an anionic component A_2, said other deionization chamber being spaced from said certain chamber by one product chamber, said companion source compound comprising one ionic compound of a certain polarity which with an ionic component of the opposite polarity of the weakly acid compound in the adjacent deionization chamber produces a strong acid, and said companion source compound being so selected with respect to the product compounds to be produced that the sum of the heats of formation of the source compounds exceeds the sum of the heats of formation of the product compounds, one of the source compounds being a gas dissolved in liquid;

maintaining in said one product chamber a conductive liquid;

maintaining said cell under above-atmospheric pressure;

applying an electrical direct potential across said membranes and chambers and the liquids therein;

and withdrawing strongly acid product liquid from said one product chamber.

3,372,102
ELECTROPHORETIC PRINTING USING SOURCE SHEET CONTAINING AN ADSORBENT MATERIAL

Donald J. J. Lennon, Acton, Mass., assignor to The Carter's Ink Company, Cambridge, Mass., a corporation of Massachusetts

Filed Jan. 16, 1964, Ser. No. 338,245
5 Claims. (Cl. 204—181)

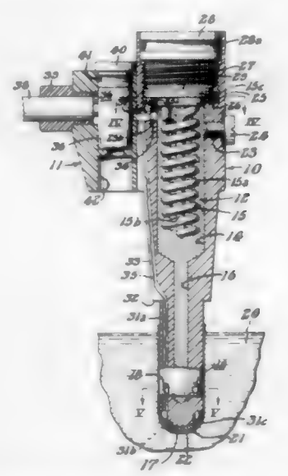
In electrophoretic printing ionizable dye particles are retained on an adsorbent material until an electrical field is applied to cause them to be transferred in the printing operation.

3,372,103
DISSOLVED OXYGEN PROBE

Vernon T. Stack, Jr., Chadds Ford, Pa., assignor to Roy F. Weston, Inc., Newtown Square, Pa., a corporation of Pennsylvania

Filed Nov. 3, 1964, Ser. No. 408,504
8 Claims. (Cl. 204—195)

An electro-chemical cell or probe is disclosed for use in determining the amount of oxygen dissolved in most liquids or gases and particularly in polluted or clear water. The probe has a chemically resistant body, preferably one which can be autoclaved, and a platinum tip which functions as the cathode. The anode is lead in rod or wire form. The electrolyte is preferably potassium iodide. The surface area of the lead anode is large relative to that of the platinum cathode, at least 30 to 1. The surface area of the lead rod in square inches relative to the volume of electrolyte in milliliters in greater than one. The platinum-lead-electrolyte combination of its own develops a potential internally sufficient for the reduction of oxygen to occur in the cell. No external applied potential is required to support the reduction of oxygen in the cell. A plastic membrane, selectively permeable to oxygen and other gases but impervious to the electrolyte and to the other inorganic and organic constituents of the water, covers the platinum tip and extends sufficiently upward to also cover radial passages which communicate with the electrolyte cavity. A temperature-insensitive resistance is connected between the terminals of the lead anode and the platinum cathode across which an output voltage is developed as a function of the oxygen entering the cell through the membrane and reduced therein. The value of the resistance determines the rate of the response of the probe, the amount of physically produced noise, and the sensitivity of the probe to turbulence. Therefore, this resistance should be held constant during operation. The voltage developed across the resistance is applied to the input terminals of an operational amplifier. A negative feedback circuit, having a thermistor therein, is provided between the output and input terminals of the amplifier, for compensating for temperature variations of the output of the probe. Thus, changes in the thermistor with temperature does not effect the load resistance of the probe and does not alter the response of the probe, but does



correct for the changes of the probes output with temperature.

The output of the probe is directly proportional to the dissolved oxygen and has a zero output when the dissolved oxygen is zero. Hence, the same probe is usable with the proper analyzer for trace (parts per billion) analysis of oxygen in water or gas streams.

3,372,104
GLASS ELECTRODE COMPOSITION

James W. Ross, Newton, Mass., and Normand C. Hebert, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed May 18, 1964, Ser. No. 368,322
4 Claims. (Cl. 204—195)

Glass electrode having a pH sensitive membrane of a glass composition consisting essentially of a lithium silicate containing minor amounts of Cs_2O and/or Rb_2O, a rare earth metal oxide and especially Ta_2O_3 together with UO_2.

3,372,105
ALUMINUM REDUCTION CELL AND INSULATION MATERIAL THEREFOR

Arthur F. Johnson, 5700 Arlington Ave.,
Riverdale, N.Y. 10471

Filed Oct. 22, 1962, Ser. No. 231,969
15 Claims. (Cl. 204—243)

1. A refractory material for insulating a structure comprising:

a sheet with at least some flexibility;

a first layer of a size-graded mixture of refractory mineral particles bonded to said sheet;

a second layer of refractory mineral particles having a higher melting point than said first layer bonded on top of said first layer;

said particles being selected from the group consisting of the oxides, carbides, nitrides, oxycarbides and oxynitrides of zirconium and titanium, the oxides of calcium and chromium, and the carbides, nitrides, oxycarbides and oxynitrides of silicon and aluminum; and

means capable of bonding said particles and said sheet to the structure desired to be insulated.

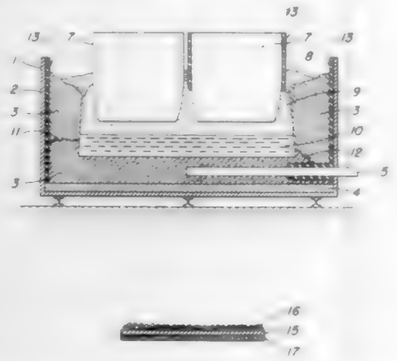
14. An aluminum reduction cell comprising:

a metallic shell;

a carbonaceous lining;

a plurality of collector bars embedded in said lining;

a layer of insulating material between said shell and said lining, at least a portion of said insulating material comprising;



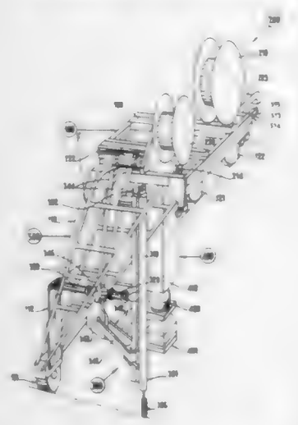
a thin, dense layer of size-graded, electrically nonconductive refractory mineral particles, said particles forming solid, higher melting compounds upon contact with molten aluminum or cryolite.

3,372,106

MACHINE AND METHOD FOR CRUST PIERCING AND FEEDING OF MOLTEN ELECTROLYTIC BATHS

Jacques Chambran, Tarascon-sur-Ariege, France, assignor to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

Filed Sept. 23, 1964, Ser. No. 398,566
Claims priority, application France, Sept. 24, 1963, 948,473
25 Claims. (Cl. 204—245)



A machine for feeding powdered alumina into molten baths having a crust on the surfaces thereof and through which anodes extend into the baths for the production of aluminum by electrolysis and in which a plurality of such baths are aligned in side by side spaced apart relation, said machine comprising a carriage and means for displacement of the carriage from a starting position to a position in front of the baths, a piercing hammer mounted on the carriage for displacement vertically between raised and lowered positions and means responsive to the resistance to penetration of the hammer through the surface of the bath for initiating the operation of the piercing hammer to form an opening through the crust, a hopper on the carriage for the storage of alumina and means for discharging alumina from the hopper into the opening pierced by the hammer, said machine embodying sequencing and control means responsive to the position of the carriage relative to the baths and responsive to the position of the piercing hammer between raised and lowered positions adapted to (1) displace the carriage to a position in front of the anode of the bath to be fed, (2) lower the piercing hammer responsive to positioning of the carriage to pierce the crust to form an opening through the surface of the bath, (3) raise the piercing hammer from the bath, (4) displace the carriage a short distance responsive to movement of the hammer towards raised position, (5) pierce the bath again and continue the operation of steps (2), (3) and (4) until a number of openings have been provided in the surface of the bath, (6) feed aluminum from the hopper onto the surface of the bath, and (7) displace the machine to starting position.

3,372,107

ELECTRODE MATERIAL FOR ELECTROLYTIC PROCESSES

Alfred Klein, 1265 47th St., Brooklyn, N.Y. 11219

No Drawing. Continuation-in-part of application Ser. No. 278,421, May 6, 1963. This application Jan. 17, 1964, Ser. No. 338,327
8 Claims. (Cl. 204—291)

1. A composition of matter for use as an anode in electrolysis, comprising a mixture of 20% to 80% by weight of electrically conductive components, said conductive components being reactive metals and characterized by their possessing high chemical inertness to anodic oxidation and becoming passive when they are made anodic in salt solutions, from 10% to 40% by weight of an alkali metal silicate and from 10% to 60% by weight of lead monoxide.

3,372,108

CONVERTING NAPHTHENES TO AROMATICS AND SEPARATING THE AROMATICS

William R. Epperly, New Providence, and Charles W. Tyson, Jr., Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed July 25, 1966, Ser. No. 567,654
7 Claims. (Cl. 208—95)

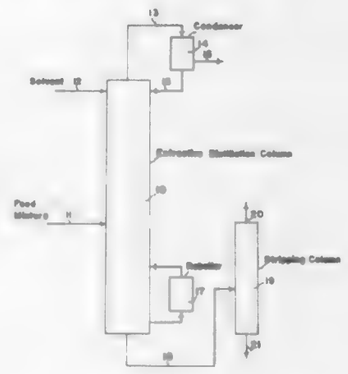
The present disclosure relates to a process for removing cyclic constituents such as cyclic paraffins and aromatics from fuels. The fuel is first subjected to a dehydrogenation step during which step the naphthenes are converted to aromatics. The fuel is then contacted with a molecular sieve which is adapted to selectively adsorb the aromatic compounds. The hydrogenation and adsorption steps may be combined in a single zone or carried out separately. Both the dehydrogenation catalyst and the adsorbent are periodically regenerated. In a preferred embodiment, ammonia is employed to both reactivate the catalyst and desorb the molecular sieve. The fuels obtained by this process exhibit improved luminometer numbers and are useful as jet fuels and in certain fuel cells.

3,372,109

HYDROCARBON SEPARATION WITH AN ALKOXYNITRILE SOLVENT

George D. Davis, Creve Coeur, and Earle C. Makin, Jr., St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Mar. 16, 1966, Ser. No. 534,869
8 Claims. (Cl. 208—313)



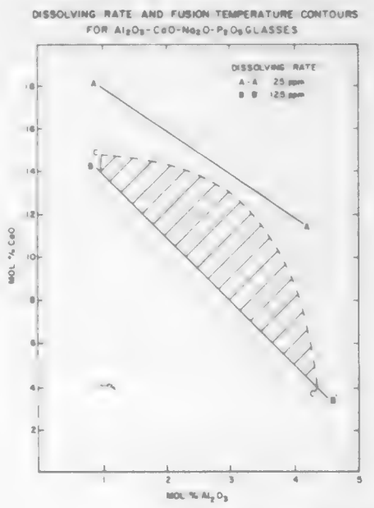
A process for the separation of mixtures of hydrocarbons of varying degrees of unsaturation by extractively distilling such mixtures in the presence of a solvent which comprises 75 to 99 percent by weight of an alkoxynitrile in which the alkyl radicals are straight chain and have one to three carbon atoms and 1 to 25 percent by weight of water, recovering an overhead distillate fraction from the extractive distillation which is substantially richer in hydrocarbons of lesser degree of unsaturation than the original mixture, removing a solvent fraction rich in the more unsaturated hydrocarbons of the original mixture from the distillation zone and recovering from such solvent fraction a fraction substantially richer in the more unsaturated hydrocarbons than said original mixture.

3,372,110

PROCESS OF SEQUESTERING METAL IONS WITH SLOWLY SOLUBLE PHOSPHATE GLASSES

Robert J. Fuchs, Clark, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

Original application Mar. 27, 1962, Ser. No. 182,870, now Patent No. 3,338,670, dated Aug. 29, 1967. Divided and this application June 13, 1967, Ser. No. 645,767
3 Claims. (Cl. 210—57)



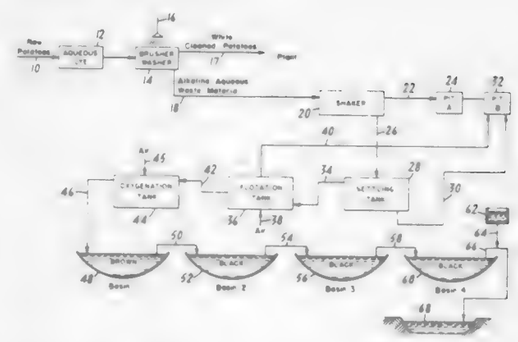
A novel class of polyphosphate glasses having a fushion temperature between about 1148° F. to about 1382° F. and a dissolving rate in water of from about 25 to about 125 mg./liter and containing about 46.5 to about 48.5 mole percent P_2O_5, about 35.5 to about 44.5 mole percent Na_2O, about 1 to 4.25 mole percent Al_2O_3 and about 4 to about 15 mole percent CaO has been found effective in sequestering calcium and iron ions present in water by adding the polyphosphate glass to water in concentrations of about 1 to about 125 p.p.m.

3,372,111

TREATMENT OF ALKALINE WASTES FROM POTATO PROCESSING

Frederick H. Vahlsing, Jr., Allentown, N.J., assignor to Vahlsing, Inc., a corporation of Delaware

Filed Feb. 21, 1966, Ser. No. 529,089
4 Claims. (Cl. 210—62)



Disagreeable odor, color and hazardous bacterial content of liquid alkaline waste material, generated by potato processing operations which include a lye peeling step, are eliminated by removing relatively large-sized suspended solids from the waste material, oxygenating the waste material, ponding the waste material at least once and adding chlorine to the waste material in a concentration from about 1 to about 20 parts per million by weight.

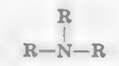
3,372,112

DRILLING FLUIDS HAVING ENHANCED LUBRICATING PROPERTIES

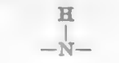
Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 14, 1964, Ser. No. 367,565
10 Claims. (Cl. 252—8.5)

1. A pumpable aqueous drilling fluid having enhanced lubricating properties consisting of water, from 1 to 15 weight percent of finely divided inorganic solids, and a small but effective amount, sufficient to provide said enhanced lubricating properties but insufficient to increase the viscosity of the drilling fluid to the extent that it cannot be readily pumped and circulated, of an amine selected from the group of amines having the formula



wherein: each R is selected from the group consisting of hydrogen, hydrocarbon radicals containing from 1 to 22 carbon atoms, amino substituted hydrocarbon radicals containing from 1 to 22 carbon atoms and also containing at least one $—NH_2$ substituent attached to a carbon atom other than a carbon atom which is alpha to a $—NH_2$ group, said hydrocarbon radicals wherein at least one $—CH_2—$ other than a $—CH_2—$ attached to a nitrogen atom is replaced with



and said amino substituted hydrocarbon radicals wherein at least one $-CH_2-$ other than a $-CH_2-$ attached to a nitrogen atom is replaced with

$$-\overset{H}{\underset{|}{N}}-$$

at least one R contains at least 8 carbon atoms, and the total number of nitrogen atoms in the molecule does not exceed 4; and mixtures of said amines; said amount of said amine being within the range of from 3 to 15 pounds per barrel of said fluid.

3,372,113
LUBRICATION OF METAL DURING HOT WORKING

Gerhard Naeser, Duisburg-Huckingen, Otto Wessel, Duisburg-Ungelsheim, and Kurt Darschewski, Duisburg-Huckingen, Germany, assignors to Mannesmann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed Apr. 23, 1965, Ser. No. 450,544
12 Claims. (Cl. 252—12)

This invention relates to the lubrication of metal during the hot working thereof with a metal salt selected from alkali metal carbonates, alkali metal halides, and mixtures thereof which have been heat treated at a temperature which is at least that of the first critical point of transition of said salt.

3,372,114
PROCESS FOR PREPARING THICKENED MINERAL OIL COMPOSITIONS

Rudolph J. Rense, Gates Mills, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 25, 1965, Ser. No. 435,333
14 Claims. (Cl. 252—33)

Gelled materials useful as lubricant additives in greases are prepared by contacting (A) a fluid mineral oil solution of a carbonated, basic complex of an alkaline earth metal and an organic carboxylic or sulfonic acid, salt thereof, or carboxylic ester containing at least 12 aliphatic carbon atoms, the complex being characterized by a metal ratio of at least about 4.5, with (B) oxygen at a temperature of about 150° C. to about 300° C.

3,372,115
BASIC METAL-CONTAINING THICKENED OIL COMPOSITIONS

Richard L. McMillen, Painesville, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 185,521, Apr. 6, 1962, now Patent No. 3,242,079, dated Mar. 22, 1966. This application Mar. 21, 1966, Ser. No. 535,693
11 Claims. (Cl. 252—33)

1. A process for preparing a homogeneous thickened composition comprising mixing a fluid mineral oil solution of a carbonated basic alkaline earth metal salt of an acid having at least about 12 aliphatic carbon atoms and selected from the class consisting of sulfonic acids and carboxylic acids, said salt having a metal ratio of at least about 4.5 and from about 1% to about 80%, based on the weight of said metal salt, of an active hydrogen substance selected from the class consisting of alcohol:water mixtures wherein the weight ratio of alcohol to water varies up to 24:1 and is exclusive of ranges of ratios of about 0.5:1 to 3:1, the mixing being conducted at a temperature within the range of from about 25° C. up to the reflux temperature of said alcohol:water mixtures.

3,372,116
PREPARATION OF BASIC METAL PHENATES AND SALICYLATES

Norman A. Meinhardt, Lyndhurst, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 493,264, Oct. 5, 1965. This application Apr. 17, 1967, Ser. No. 631,144
20 Claims. (Cl. 252—36)

1. In the method for preparing a basic metal phenate by reacting, at a temperature between about 25° C. and the reflux temperature, (A) a hydrocarbon-substituted phenol having at least about 6 carbon atoms in the hydrocarbon substituent, a mixture of said phenol with up to an equivalent amount of a hydrocarbon-substituted succinic acid or anhydride having at least about 6 carbon atoms in the hydrocarbon substituent, or a substantially neutral alkali metal or alkaline earth metal salt of either of the foregoing, (B) about 1–10 equivalents, per equivalent of (A), of a calcium or strontium base, and (C) carbon dioxide;

the improvement which comprises carrying out the reaction in the presence of about 0.002–0.2 equivalent, per equivalent of said calcium or strontium base, of a carboxylic acid having up to about 100 carbon atoms or an alkali metal, alkaline earth metal, zinc or lead salt thereof.

3,372,117
COLD FORMING LUBRICANT

Frederick W. C. Jones and Edwin W. Goodspeed, Royal Oak, Mich., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,040
6 Claims. (Cl. 252—42.1)

A lubricant concentrate composition which comprises from about 3 to 75 percent by weight of an alkali metal orthophosphate, about 15 to 97 percent by weight of an alkali metal fatty acid soap, containing from about 8 to 22 carbon atoms, and at least 0.1 percent by weight of a surface active agent selected from the group consisting of anionic phosphate esters, non-ionic ethylene oxide condensates and amphoteric biodegradable surface active agents. Additionally, the concentrate composition may contain from about 0.1 to 80 percent by weight of a water dispersible diluent selected from water soluble and colloidally suspendable diluents, such as sugar and polyethylene glycol having a molecular weight from about 100 to 10,000. An aqueous lubricant composition containing from about 10 to 400 pounds of this concentrate per hundred gallons of solution may be used to form a lubricant coating on a chemically coated metal surface, such as a phosphate coated metal surface, which surface may then be deformed after the lubricant coating has been dried.

3,372,118
PROCESS FOR PREPARING BASIC ALKYL PHENOLIC COMPOSITIONS

Rudolph J. Rense, Gates Mills, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 7, 1965, Ser. No. 512,240
6 Claims. (Cl. 252—42.7)

Overbased derivatives of mixtures of alkylated phenols and polar compounds such as amines, amine-aldehyde condensation products, esters, alcohols and the like are prepared by mixing a metal base such as barium oxide or hydroxide with an oil solution of the phenol, removing most of the water in the mixture, adding the polar compound at about 125–175° C. and carbonating. This method avoids foaming and decomposition of the ingredients of the reaction mass. The products are useful as lubricant and fuel additives.

3,372,119
LUBRICANT COMPOSITIONS CONTAINING POLYCHLOROALKYL BENZENE EXTREME PRESSURE ADDITIVES

Bernard Demoures, 14 Quai Jayr, Rhone, Lyon, France, and Gérard Schneider, 119 Quai Clemenceau, Rhone, Caluire, France

No Drawing. Filed Mar. 9, 1965, Ser. No. 438,368
Claims priority, application France, Mar. 10, 1964, 966,777
4 Claims. (Cl. 252—48.8)

A lubricant additive for use at extreme pressures comprising a mixture of a chlorinated alkyl benzene having a chlorine content of from 50 to 75% by weight, at least 75% of which is bound to the alkyl carbon atoms, and a resinous polychlorobenzene polysulfide soluble in hydrocarbon oils and containing from 15 to 25% sulfur and from 44 to 55% chlorine.

3,372,120
LUBRICANTS CONTAINING POLYMERIC ADDITIVES

Lester E. Coleman, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 90,630, Feb. 21, 1961. This application May 15, 1967, Ser. No. 638,612
19 Claims. (Cl. 252—51.5)

Oils containing interpolymers of N-vinyl oxazolidones have improved viscosity-index properties, pour point properties, dispersancy properties, and resistance to the formation of insoluble degradation products. At least one oil-solubilizing vinyl co-monomer is required in the preparation of the interpolymers used in this invention. Additional oil-solubilizing vinyl co-monomers or other co-monomers may be used in making these interpolymers.

3,372,121
PIEZOELECTRIC AND ELECTROSTRICTIVE CERAMIC ARTICLES OF LEAD ZIRCONATE TITANATE CONTAINING MANGANESE AND TUNGSTEN OXIDES

Hisao Banno, Ueno-machi, Japan, assignor to NGK Spark Plug Co., Ltd., Nagoya, Japan

Filed Mar. 15, 1965, Ser. No. 439,676
14 Claims. (Cl. 252—62.9)

Piezoelectric and electrostrictive ceramic articles having a composition consisting essentially of $Pb(Zr\text{-}Ti)O_3$ or $PB(Zr\text{-}Sn\text{-}Ti)O_3$ wherein a part of Pb is replaceable by at least one alkaline earth element selected from the group consisting of Ba, Ca, Sr and Mg, and containing W and Mn to particularly improve mechanical Q of the ceramic articles which is especially important in their application to a ceramic wave filter, a mechanical wave filter and a piezoelectric tuning fork.

3,372,122
VANADIUM-CONTAINING LITHIUM FERRITES

Howard Lessoff, Needham Heights, Mass., assignor to Radio Corporation of America, a corporation of Delaware

Filed Aug. 13, 1964, Ser. No. 389,419
13 Claims. (Cl. 252—62.61)

Magnetic memory cores useful in computer applications comprise lithium ferrites with minor additions of vanadium. Optionally, manganese, cadmium zinc and/or magnesium may be present. The cores have square hysteresis loop and a high Curie temperature. The addition of vanadium imparts a shorter switching time and/or lower coercive force to the core. The cores are prepared by calcining in an oxidizing atmosphere a mixture of the constituent metal oxides or compounds which yield the constituent metal oxides on heating. The calcined mixture is then shaped to form a core which is sintered at temperatures between 930° C. and 1190° C. and then cooled.

3,372,123
METHOD FOR MANUFACTURING LITHIUM-NICKEL-MANGANESE FERRITE MAGNETIC MEMORY CORES

Cornelis Jacobus Esveldt, Evert Willem Gorter, and Hans Peter Peloschek, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 280,490, May 3, 1963. This application May 24, 1966, Ser. No. 552,631
Claims priority, application Netherlands, May 25, 1962, 278,942
4 Claims. (Cl. 252—62.61)

A method of manufacturing magnetic core elements, useful as storage elements, and having a rectangular hysteresis loop, in which a mixture of lithium, nickel, manganese, and ferric oxides, after calcining, is compacted into annular cores which are heated to between 1200° C. and 1400° C. for not more than ten minutes in a water-free atmosphere.

3,372,124
CORROSION INHIBITORS

Theodore E. Majewski, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application Apr. 21, 1965, Ser. No. 449,886, now Patent No. 3,318,909. Divided and this application Aug. 10, 1966, Ser. No. 615,270
7 Claims. (Cl. 252—77)

Aqueous glycol antifreeze compositions are rendered non-corrosive to metals by the inclusion of a small proportion of a 2-(cyclohexylimino)-1-hydrocarbyl-pyrrolidine.

3,372,125
DENTURE CLEANSER

William H. Hill, Stamford, Conn., assignor to Peter, Strong & Company, Inc., New York, N.Y.

No Drawing. Continuation-in-part of application Ser. No. 210,584, July 17, 1962. This application Nov. 15, 1965, Ser. No. 507,705
6 Claims. (Cl. 252—99)

1. A denture cleanser having a peroxy oxygen-liberating compound for evolving gas bubbles in an aqueous medium, and an activating agent having the radical consisting of $[Fe(CN)_y(NO)_z]$ in which the iron may be replaced by a metal selected from a group consisting of cobalt, nickel, manganese, and copper, and wherein $y=1$ to 6, and $z=0$ to 1, the said activating agent being present in amount sufficient to promote increased evolution and bubbling of gas.

3,372,126
PROCESS FOR PREPARING SPHEROIDAL FLUORINATING AGENTS CONTAINING CALCIUM FLUORIDE AND SUITABLE FOR FLUID-BEDS AND PRODUCT RESULTING THEREFROM

Martino Vecchio and Vittorio Fattore, Milan, and Italo Cammarata, Bollate, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

Filed May 24, 1965, Ser. No. 458,048
Claims priority, application Italy, May 26, 1964, 11,702/64
16 Claims. (Cl. 252—182)

Process for the preparation of a spheroidal fluorinating agent containing calcium fluoride and calcium chloride, particularly suited for fluorination reactions conducted in fluid bed, comprising suspending calcium fluoride in an

aqueous solution of calcium chloride and thence subjecting the resultant suspension to simultaneous granulation and drying. Also, the spheroidal fluorinating agent resulting therefrom.

3,372,127
BORON-LOADED LIQUID SCINTILLATOR
George E. Thomas, Jr., Naperville, and Harold E. Jackson, Jr., Elmhurst, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 12, 1965, Ser. No. 432,436
4 Claims. (Cl. 252—301.2)

A liquid scintillator which differentiates between radiation due to slow neutrons and gamma rays comprising a solvent of either toluene, xylene, mineral oil or isopropyl biphenyl containing 40 to 50 weight percent trimethyl borate and saturated with 9,10-diphenyl anthracene and naphthalene.

3,372,128
NOVEL CATALYST COMPOSITION
Shozo Maeda, Nishinomiya-shi, Ken Ito and Teruya Nishida, Toyonaka-shi, and Takashi Tamura, Osaka, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Jan. 23, 1964, Ser. No. 339,617
Claims priority, application Japan, Jan. 25, 1963, 38/3,691
2 Claims. (Cl. 252—437)

1. A catalyst which consists essentially of a member selected from bismuthmolybdate and bismuthphosphomolybdate, supported on 10–75% by weight, based upon the total weight of the catalyst, of diatomaceous earth.

3,372,129
METHOD OF PREPARING POLYAMINES
Kenneth G. Phillips, North Riverside, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Oct. 6, 1964, Ser. No. 401,964
10 Claims. (Cl. 260—2)

A process of making high molecular weight polyamines which are characterized as being substantially non-cyclic in structure.

3,372,130
CONTROL OF RATE OF RISE OF POLYURETHANE FOAMS WITH PHOSPHORIC ACID AND A TERTIARY AMINE
Samuel Chess, San Pedro, and Robert G. Pilmer, Palos Verdes Peninsula, Calif., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 397,026, Sept. 16, 1964. This application Mar. 2, 1967, Ser. No. 619,912
3 Claims. (Cl. 260—2.5)

The rate of foam rise in the preparation of polyurethane foams is controlled by employing as catalyst a combination of a tertiary amine and phosphoric acid; the amount of acid is less than required to neutralise the amine.

3,372,131
FIRE PROTECTING ADHESIVES COMPRISING DICYANDIAMIDE-ALDEHYDE CONDENSATION PRODUCT
Hans Adolf Rohlfs and Heinz Schmidt, Wiesbaden-Biebrich, and Karl Stumpp, Wiesbaden, Germany, assignors to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany
No Drawing. Filed Mar. 31, 1964, Ser. No. 356,023
Claims priority, application Germany, Apr. 6, 1963, C 29,594; Feb. 21, 1964, C 32,215
19 Claims. (Cl. 260—17.3)

The invention relates to novel fire retardant adhesive compositions comprising an amine-aldehyde condensation product prepared by condensing an aminoplast forming compound comprising dicyandiamide and an aldehyde at least in part in the presence of phosphate ions and at least in part in the presence of ammonium ions, the phosphate ion component being present in an amount of at least 4.1% by the weight of the anhydrous amino-compound and the anhydrous aldehyde, and a method of forming fire-retardant adhesive bonds between two surfaces.

3,372,132
GRAFT POLYMERS OF CELLULOSE CRYSTALLITE AGGREGATES
Mamerto M. Cruz, Jr., Newtown Square, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 112,152, May 3, 1961. This application May 6, 1964, Ser. No. 365,508
14 Claims. (Cl. 260—17.4)

A free-flowing, particulate, sand-like graft copolymer of crystalline cellulose is formed by reacting cellulose crystallite aggregates having a level-off D.P. with a polymerizable monomer containing a doubly bonded methylene group. When molded by heat and pressure, the copolymer forms electrical insulators with excellent resistance to high humidity conditions. Translucent films are formed by dispersing the graft polymer in a non-solvent liquid and evaporating the liquid.

3,372,133
PROCESS FOR PRODUCING ORGANOPOLYSILOXANES
Karl W. Krantz, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed June 23, 1965, Ser. No. 466,468
8 Claims. (Cl. 260—28)

Phenylsilsesquioxane polymers of high intrinsic viscosity are prepared by the suspension polymerization of lower molecular weight precursor materials in the presence of a high boiling aromatic solvent for both the precursors and the final materials and in the presence of controlled amounts of a high boiling aliphatic diluent which has a solvent attraction for the aromatic solvent but not towards the organopolysiloxanes. The resulting high intrinsic viscosity materials are useful as wire insulation, thin films, textile treating materials and the like.

3,372,134
REINFORCED SYNTHETIC RUBBER LATEX AND USES
Robert M. Pierson, Hudson, and Richard W. Hobson, Mitchell S. Kolaczewski, and Thomas H. Rogers, Jr., Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed June 1, 1964, Ser. No. 371,806
7 Claims. (Cl. 260—29.7)

1. In the process of preparing a synthetic rubbery polymeric latex by polymerizing a polymerizable conjugated diene monomer while dispersed in an aqueous emulsion system containing a micelle producing surfactant, and a free radical initiator, at a polymerization temperature of from about 40° F. to about 85° F. and forming a rubbery latex particle in which the monomer is soluble, in which sufficient surfactant is present in the water to form micelles to promote the conversion of monomer to polymer during at least up to 40% conversion of monomer to polymer and stabilize the resulting latex particles during said conversion period, but insufficient to prevent the surface tension of the system from increasing to a maximum value during polymerization and then decreasing to a minimum value during agglomeration when at least 45% of monomer has been converted to polymer, the improvement which comprises

adding a resinous latex selected from the group consisting of polystyrene and copolymers of styrene and a conjugated diene hydrocarbon to the system after the system has undergone a 10% conversion and before about a 40% conversion of monomer to polymer, continuing polymerization of the monomer to a conversion of from about 45% to about 70% and then treating the latex particles with agitation to cause agglomeration of the latex particles and a decrease of the surface tension and recovering the latex.

3,372,135
SILICONE VARNISH
Tamotsu Wada, Tokyo, and Mitsuo Ishizaka, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a Japanese corporation
Filed Dec. 12, 1963, Ser. No. 330,155
Claims priority, application Japan, Dec. 13, 1962, 37/55,086
16 Claims. (Cl. 260—33.9)

Silicone varnish that may be dried at low temperatures and method of preparing the same comprising a silicone resin solution, and either a complex metal hydroxide having a metal atom such as Ni, Cu, Co, and Cr coordinated with amines or with both amines and water, or, a complex salt having the complex metal hydroxide reacted with an organic acid.

3,372,136
DISPERSED TETRAFLUOROETHYLENE - HEXAFLUOROPROPYLENE COPOLYMER BASED COATING COMPOSITIONS
Yutaka Kometani, Hyogo-ken, and Akira Yamada and Soichi Satoyama, Takatsuki-shi, Japan, assignors to Daikin Kogyo Kabushiki Kaisha, Osaka-shi, Japan, a juridical person of Japan
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,364
13 Claims. (Cl. 260—33.8)

Coating compositions of a tetrafluoroethylene—hexafluoropropylene copolymer dispersed in a solution of a polymer containing chlorotrifluoroethylene dissolved in a flurine containing organic solvent.

3,372,137
PROCESS FOR PREPARING MINERAL REINFORCED POLYLACTAM COMPOSITIONS
Paul A. Tierney, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 3, 1964, Ser. No. 372,398
21 Claims. (Cl. 260—37)

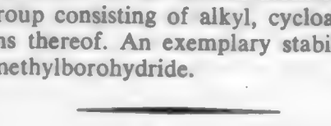
1. A process for preparing polylactam compositions comprising

(a) combining lactam monomer, basic lactam polymerization catalyst, lactam polymerization initiator, and inorganic material heat-pretreated at temperatures above about 375° C. for a time sufficient to remove surface hydroxyl group; and

(b) heating the mixture formed thereby at a temperature from about the melting point of said lactam up to about 250° C. for a time sufficient to cause polymerization.

3,372,138
PROCESS FOR COLORING SYNTHETIC LINEAR POLYESTERS
Francis Bowman, Albert Charles Cooper, and Francis Irving, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England
No Drawing. Filed May 28, 1965, Ser. No. 459,914
Claims priority, application Great Britain, June 8, 1964, 23,599/64; Oct. 16, 1964, 42,323/64
7 Claims. (Cl. 260—40)

1. Process for the mass coloration of synthetic linear polyesters which comprises using as colouring matter at least one dyestuff of the formula:



wherein:

D is a dyestuff radical which is free from sulphonic acid groups and which is selected from the class consisting of anthraquinone, anthrapyridone, isothiazoloanthrone, anthrapyrimidine, anthrapyrimidone and phthaloylacridone dyestuff radicals;

Y, which is attached to a carbon atom of a benzene ring present in D, is selected from the class consisting of —S— and —NH—;

n is a positive integer not exceeding 2;

m is a positive integer not exceeding 4; and any further substituents on the benzene ring A are chlorine atoms, by mixing said dyestuff with the polyester, melting the resulting mixture, and spinning said mixture into fibers.

3,372,139
PREPARATION OF CROSS-LINKABLE POLYOLEFIN COMPOSITIONS
Erich Behr, Troisdorf, and Rolf Beckmann, Siegburg, Germany, assignors to Dynamit Nobel Aktiengesellschaft Troisdorf, Bezirk Cologne, Germany, a corporation of Germany
No Drawing. Filed Sept. 7, 1965, Ser. No. 485,575
Claims priority, application Germany, Sept. 8, 1964, D 45,368
11 Claims. (Cl. 260—41)

An additive, for example, carbon black, and a cross-linking agent, and a polyolefin polymer are combined in a mixture, preparatory to further treatment, such as for example cross-linking, by the steps of (1) heating a mixture of the additive and polyolefin to sinter the mixture, (2) cooling the sintered polymer, and (3) dispersing the cross-linking agent in the cooled sintered polymer.

3,372,140
STABILIZED OLEFIN POLYMERS
Donald R. Witt, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 13, 1965, Ser. No. 487,060
11 Claims. (Cl. 260—45.9)

Polymers are stabilized with a compound having the general formula $M(BR_4)_y$ wherein M is ammonium, lithium, sodium, potassium, rubidium, cesium, beryllium, magnesium, calcium, strontium, or barium; *y* is the valence of M; and R is a 1 to 20 carbon atom radical selected from the group consisting of alkyl, cycloalkyl, aryl, and combinations thereof. An exemplary stabilizer is ammonium tetramethylborohydride.

3,372,141
SELF-EXTINGUISHING POLYSTYRENE RESIN COMPOSITIONS
Richard T. Dickerson and William F. Tousignant, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 4, 1963, Ser. No. 256,109
7 Claims. (Cl. 260—45.95)

1. A self-extinguishing styrene polymer comprising the homopolymers and copolymers of monovinyl aromatic compounds containing no more than a minor amount of another monoethylenically unsaturated organic compound copolymerized therewith and containing from about 0.1 to about 5 percent by weight of a mixed bromine-containing alkenyl-aryl ether of: (1) a bromine-containing alkenyl compound wherein the hydrogen atoms on the olefinic carbon atoms in the alkenyl group have been replaced by bromine atoms and said alkenyl group contains

from 3 to 4 carbon atoms; and (2) triphenyl carbinol or a halogenated phenol.

3,372,142

EPOXIDATION PROCESS

Douglas R. Smith, Freeport, Tex., assignor to the Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,782
5 Claims. (Cl. 260—47)

5. The process of epoxidizing a vicinal chlorohydrin compound by dehydrochlorinating said compound in the presence of an aqueous solution of between 1.5 and 5.5 N alkali metal hydroxide and substantially saturated with an alkali metal carbonate.

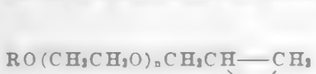
3,372,143

PROCESS FOR PRODUCING MODIFIED POLYESTERS WITH EPOXY ETHER COMPOUNDS

Hiroshi Terada, Ohtake-shi, Masao Ishii, Tokyo, and Makoto Yamada, Kazunari Tokuda, Osamu Nakagawa, Takeshi Imaida, and Shunichi Takashima, Ohtake-shi, Japan, assignors to Mitsubishi Rayon Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed May 29, 1964, Ser. No. 371,182
Claims priority, application Japan, May 31, 1963, 38/28,436; June 12, 1963, 38/31,510
7 Claims. (Cl. 260—47)

A process for producing a fiber-forming modified polyester which comprises reacting terephthalic acid or its dimethyl ester, ethylene glycol and a compound having an epoxy group in the molecule and represented by the formula:



wherein R is an alkyl group having 1 to 18 carbon atoms, an aryl group, or an alkylaryl group and *n* is an integer of from 1 to 10, as a third component, alone or together with a compound having at least two epoxy groups in the molecule, in the same manner as in the production of unmodified polyesters. The resulting modified polyester has mechanical properties substantially the same as those of the unmodified polyester (polyethylene terephthalate) and can be formed into fibers or films having much superior dyeability with a disperse dyestuff.

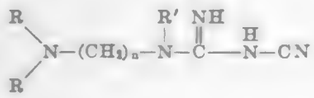
3,372,144

LOW TEMPERATURE AMINOALKYLDICYANDIAMIDE CURING AGENTS FOR EPOXY RESINS

Arnold Drucker, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 25, 1966, Ser. No. 522,839
5 Claims. (Cl. 260—47)

1. A composition comprising (A) an organic polyepoxide material having a plurality of reactive 1,2 epoxy groups and (B) as a curing agent an amount of a substituted aminoalkyldicyandiamide having the structure:



wherein R represents a lower alkyl group of from 1 to 6 carbon atoms, R′ represents a substituent selected from the group consisting of hydrogen and benzyl and *n* is an integer from 2 to 10 inclusive.

3,372,145

PROCEDURE FOR CONTINUOUS MANUFACTURE OF POLYOXYMETHYLENE OF ULTRA-HIGH DEGREE OF POLYMERIZATION

Seizo Okamura and Toshinobu Higashimura, Sakyo-ku, Kyoto, Japan, assignors to Research Institute for Production Development, Sakyo-ku, Kyoto, Japan, a non-profit-making organization of Japan

Filed Jan. 7, 1964, Ser. No. 336,288
Claims priority, application Japan, Jan. 14, 1963, 38/1,859
6 Claims. (Cl. 260—67)

A process for the manufacture of ultra-high molecular weight polyoxymethylene including the steps of (1) polymerizing trioxane crystals suspended in an organic liquid containing a dissolved polymerization catalyst for less than about 5 minutes at a temperature between —20° C. and 60° C., (2) separating the catalyst solution from the solid monomer and polymer, (3) deactivating the polymerization after a conversion of about 10–20% by weight of the monomer, and (4) separating athe monomer from the polymer.

3,372,146

POLYACETAL TERPOLYMERS CONTAINING RANDOMLY RECURRING GROUPS DERIVED FROM A DICARBONAL

Henri Sidi, Paramus, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Aug. 12, 1964, Ser. No. 389,196
11 Claims. (Cl. 260—67)

Certain isomeric dicarbonals may be copolymerized with formaldehyde or with its cyclic trimer, trioxane, to form a new class of polyacetal copolymers and terpolymers which contain randomly recurring groups derived from the isomeric dicarbonals. These new polyacetal copolymers and terpolymers are characterized by viscosimetrically-determined average molecular weights in the range from 10,000 to 100,000, and by excellent thermal and hydrolytic stability.

3,372,147

PRODUCTION OF THERMOSETTING AROMATIC-FORMALDEHYDE RESINS

Raymond L. Heinrich and John M. Powers, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 419,720
13 Claims. (Cl. 260—67)

Thermosettable resins of high oxygen content are produced by reacting an aromatic hydrocarbon and formaldehyde in the presence of an acid catalyst under specific conditions to produce a liquid hydrocarbon phase which is separated and subjected to neutralization and vacuum distillation under specific conditions to obtain a thermosettable resin as a bottoms product.

3,372,148

TEREPHTHALIC ACID-ALIPHATIC ACID COPOLYESTER RESINS

Maria V. Wiener, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 12, 1963, Ser. No. 257,861
5 Claims. (Cl. 260—75)

1. A random ethylene glycol-neopentyl glycol terephthalate-aliphatic dicarboxylate copolyester in which the aliphatic dicarboxylate units are derived from an aliphatic dicarboxylic acid having the general formula

in which X is at least one member selected from the group consisting of hydrogen and alkyl radicals containing from

one to four carbon atoms and n is a positive integer not less than six, in which the glycol units in said copolyester consist essentially of units of ethylene glycol and neopentyl glycol, said ethylene glycol units constituting from 70 to 30 mol percent of the total number of mols of acid component in the copolyester, the neopentyl glycol units correspondingly constituting from 30 to 70 mol percent of the total number of mols of acid component in the copolyester, the terephthalic acid units comprise from 95 to 70 mol percent of the total number of mols of terephthalic acid and aliphatic dicarboxylic acid component in the copolyester and the aliphatic dicarboxylic acid units comprise from 5 to 30 mol percent of the total mols of terephthalic and aliphatic dicarboxylic acid component in the copolyester.

3,372,149

PROCESS FOR PREPARING SALTS OF AMINOALKYL ESTERS OF CARBOXYLIC ACID POLYMERS

Joseph Fertig, Elizabeth, Emil Daniel Mazzarella, Mountainside, and Martin Skoultchi, Somerset, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 394,055, Sept. 2, 1964, and Ser. No. 561,749, June 30, 1966. This application May 19, 1967, Ser. No. 639,604

3 Claims. (Cl. 260—78.4)

This invention relates to a novel process for the preparation of a class of water soluble polymeric derivatives. More particularly, this invention relates to a novel process for preparing the water soluble acid salts of primary and secondary aminoalkyl esters of carboxylic acid polymers by means of the reaction, in an aqueous medium, between a carboxylic acid polymer and either a primary or a secondary alkyleneimine.

3,372,150

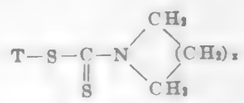
POLYMETHYLENE 2-BENZOTHIAZOLYL CARBODITHIOATES

John J. D'Amico, Dunbar, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Jan. 7, 1966, Ser. No. 519,300, now Patent No. 3,306,906, dated Feb. 28, 1967. Divided and this application Nov. 14, 1966, Ser. No. 593,728

3 Claims. (Cl. 260—79.5)

1. The process of vulcanizing a diene polymer rubber which comprises incorporating therein sulfur and an accelerating amount of a compound of the formula



where T is selected from the group consisting of benzothiazolyl, nitro-, chloro-, lower alkyl-, and lower alkoxy-substituted benzothiazolyl, and x is an integer at least 5 but less than 7 and heated at a vulcanizing temperature.

3,372,151

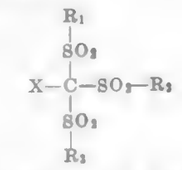
PROCESS FOR POLYMERIZATION USING SALTS OF ALKYL TRISULFONYLMETHANES (TSM'S) AS EMULSIFIERS

Clyde Stephen Scanley, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 324,259, Nov. 18, 1963. This application Dec. 21, 1964, Ser. No. 420,134

5 Claims. (Cl. 260—86.1)

A suspension or emulsion polymerization process in which the emulsifying agent is a substituted trisulfonylmethane of the formula:



wherein X is a cation, R_1 is the functional group $-C_nH_{2n}-Z-C_mH_{2m+1}$ with Z being methylene, phenylene, naphthylene, cyclohexylene, or oxy, provided that $n+m$ is from 4 to 21, further provided that when Z is oxy, n is at least 1, and R_2 and R_3 each are lower alkyl, phenyl, tolyl, cyclohexyl or R_1.

3,372,152

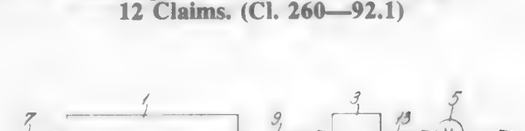
EPOXY RESINS FROM HALOGEN-SUBSTITUTED, UNSATURATED ALCOHOLS

Morton H. Litt, Morristown, and George J. Schmitt, Madison, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application Dec. 5, 1961, Ser. No. 157,270, now Patent No. 3,324,187. Divided and this application Apr. 6, 1967, Ser. No. 646,782

2 Claims. (Cl. 260—91.3)

1. A fluorine-substituted, epoxy resin prepared by the interaction of epichlorohydrin with a dihydric, fluorine-substituted, olefinic alcohol having the general formula



wherein R_3 is a member selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl, alkoxy and aryloxy, R_1 is a member selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, alkoxy, halogen, amide, acyl, carboalkoxy, vinyl and allyl, X is a member selected from the group consisting of chlorine and fluorine, the total number of chlorine atoms represented by X ranging from 0 to 4, m is an integer ranging from 0 to 1, n is an integer ranging from 0 to 20 and p is an integer ranging from 0 to 1.

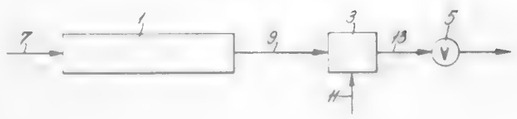
3,372,153

POLYMER POWDERS AND PROCESS THEREFOR

Andrew Turner and Edgar W. Wise, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

Filed Apr. 9, 1965, Ser. No. 446,916

12 Claims. (Cl. 260—92.1)

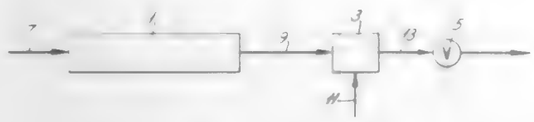


1. In a process for producing a powdered polymer of an olefinically-unsaturated monomer comprising polymerizing said monomer in contact with a free-radical initiator in a reaction zone at elevated pressure followed by withdrawing the polymerization product from the reaction zone and reducing the pressure of said polymer product to about atmospheric pressure, the improvement of subsequent to said polymerization and prior to said pressure reduction admixing said polymerization product with a lower monohydric alkanol of from 1 to 6 carbons in an amount sufficient to promote the formation of polymer particles of reduced size.

3,372,154
ETHYLENE POLYMER POWDERS AND PROCESS THEREFOR

Andrew Turner and Edgar W. Wise, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

Filed Apr. 9, 1965, Ser. No. 446,917
4 Claims. (Cl. 260—94.9)



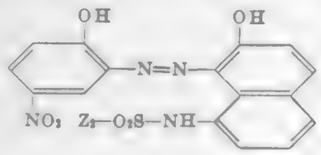
4. In a process for producing a powdered ethylene polymer comprising polymerizing ethylene in contact with a free-radical initiator in a reaction zone at elevated pressure followed by withdrawing the polymerization product from the reaction zone and reducing the pressure of said polymer product to about atmospheric pressure, the improvement of subsequent to said polymerization and prior to said pressure reduction admixing said polymerization product with ethylene having a temperature of at least 100° C. below that of the reaction zone in an amount of at least 10 weight percent of the total weight of monomer fed to said reaction zone.

3,372,155
MIXED CHROMIUM COMPLEX MONOAZO DYESTUFFS

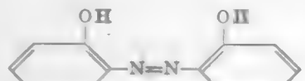
Gerhard Dittmar, Leverkusen, and Walter Scholl, Cologne-Mulheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 26, 1964, Ser. No. 347,386
Claims priority, application Germany, Feb. 28, 1963, F 39,137
2 Claims. (Cl. 260—145)

1. A mixed chromium complex azo dyestuff which contains in complex union one atom of chromium and two molecules of different monoazo dyestuffs of the formulae:



and



wherein Z_1 stands for methyl, ethyl, or phenyl, and Z_2 stands for methyl, ethyl, phenyl, or p-methylphenyl.

3,372,156
IMPROVING THE SOLUBILITY OF HIGH-MOLECULAR WEIGHT SUBSTANCES BY DIALDEHYDE POLYSACCHARIDE TREATMENT

Franz Schwarzer, Wiesbaden, and Hans Macholdt, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,631
Claims priority, application Germany, Aug. 30, 1963 K 50,689
12 Claims. (Cl. 260—232)

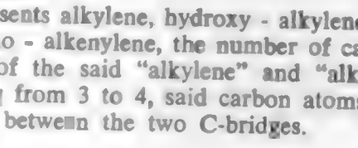
This invention relates to a process for improving the solubility of a macromolecular carbohydrate and derivatives thereof and polyvinyl alcohol and derivatives thereof and to a compound of such improved solubility, the process comprising treating the compound at an elevated temperature with a dialdehyde polysaccharide in a quantity of about 0.1 to 10 percent by weight.

3,372,157
6-AMINO-PENICILLANIC ACID DERIVATIVES

Peter Baumann, Frenkendorf, Basel-Land, Markus Zimmermann, Riehen, and Franz Häfliger, Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 252,593, Jan. 21, 1963, Ser. No. 263,421, Mar. 7, 1963, Ser. No. 263,422, Mar. 7, 1963 and Ser. No. 442,529, Mar. 24, 1965. This application July 8, 1965, Ser. No. 470,604
Claims priority, application Switzerland, Jan. 26, 1962, 977/62; Mar. 9, 1962, 2,878/62, 2,879/62; Jan. 4, 1963, 66/63; Mar. 6, 1963, 2,854/63, 2,855/63; Sept. 4, 1964, 11,560/64
42 Claims. (Cl. 260—239.1)

1. A compound of the formula



wherein

A is a member selected from the group consisting of the radicals of the formulas

each of R_1, R_2 and R_3 represents alkylene, lower alkyl-alkylene, hydroxy - alkylene, oxo - alkylene, lower alkoxy-alkylene, chloro - alkylene, bromo - alkylene, chloro-lower alkyl - alkylene, bromo - lower alkyl - alkylene, exo - methylene - alkylene or alkenylene, the number of carbon atoms of "alkylene" and "alkenylene" in the said definitions of R_1, R_2 and R_3 being from 2 to 4, said carbon atoms being ring members between the two C-bridges,

R_4 represents hydrogen, lower alkyl, halogen, or phenyl,

R_5 represents alkylene of from 2 to 3 carbon atoms,

Y_1 represents hydrogen, lower alkyl, hydroxyl or lower alkoxy,

Y_2 represents hydrogen or lower alkyl,

Y_1 and Y_2 when taken together represent oxo,

R_2'' represents alkylene, lower alkyl - alkylene, hydroxy-alkylene, oxo - alkylene or lower alkoxy - alkylene, the number of carbon atoms of "alkylene" in the said definitions of R_2'' being from 3 to 4, said carbon atoms being ring members between the two C-bridges,

R represents hydrogen or a cation, the salt of which falling under the above formula is pharmaceutically acceptable, and

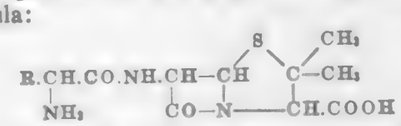
$R_2°$ represents alkylene, hydroxy - alkylene, oxo-alkylene or oxo - alkenylene, the number of carbon atoms of each of the said "alkylene" and "alkenylene" of $R_2°$ being from 3 to 4, said carbon atoms being ring members between the two C-bridges.

3,372,158
PROCESS FOR THE PREPARATION OF PENICILLINS

Brian William Hatt, Redhill, and Harry Smith, Maplehurst, near Horsham, England, assignors to Beecham Group Limited, Brentford, England, a British company

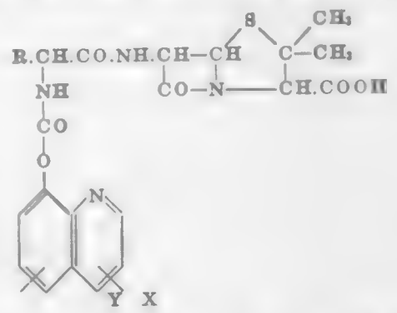
No Drawing. Filed Mar. 4, 1966, Ser. No. 531,738
Claims priority, application Great Britain, Mar. 18, 1965, 11,464/65
2 Claims. (Cl. 260—239.1)

1. In a process for the preparation of penicillins of the formula:



(I)

and physiologically acceptable non-toxic salts thereof, wherein R is phenyl, the improvement which comprises treating an N-protected penicillin of the formula:



(II)

wherein R is as hereinbefore defined and X and Y are the same or different and are each hydrogen, halogen, lower alkyl or lower alkoxy with a salt of a heavy metal in aqueous or partly aqueous solution at a pH between 1 and 7.

3,372,159
NOVEL 3-SPIROLACTONE, STEROIDS OF THE ANDROSTANE SERIES AND METHODS OF PRODUCING SAID COMPOUNDS

Oswald Auguste de Bruin, Van Houtenlaan, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 12, 1965, Ser. No. 507,531
Claims priority, application Netherlands, Nov. 14, 1964, 64—13,306
8 Claims. (Cl. 260—239.57)

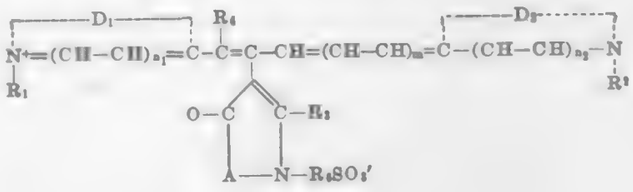
Condense γ bromo cis-crotonic acid esters or β-alkoxy derivatives thereof with 3-keto-androstanes to produce a 3-spirolactone of the androstane series, for example 3-ethoxy-4(5'α-androstane-3'β,17' - diol - 3'-yl-17-acetate)-but-2-ene-acid lactone. The compounds have anti-(endogenic)-estrogenic activities. This abstract is not intended to be a description of the invention defined by the claims.

3,372,160
CYANINE DYES

Geoffrey Ernest Ficken, Ilford, Essex, England, assignor to Ilford Limited, Ilford, England, a British company

No Drawing. Filed May 6, 1964, Ser. No. 365,521
Claims priority, application Great Britain, May 17, 1963, 19,755/63
8 Claims. (Cl. 260—240.1)

1. A cyanine dye selected from the class consisting of dyes of the formula:



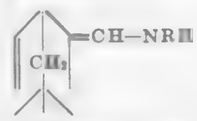
wherein R_1 and R_2 are each alkyl lower groups, R_3 is selected from the class consisting of hydrogen and lower alkyl, phenyl and naphthyl or phenyl and naphthyl substituted by alkyl, amino, hydroxy, alkoxy and oxyalkyl groups or halogen atoms, and benzyl or naphthylmethyl, and furyl or pyridyl groups, R_4 is selected from the class consisting of hydrogen and alkyl groups, R_5 is selected from the class consisting of straight and branched chain saturated divalent alkylene groups of from 2 to 6 carbon atoms, A is selected from the class consisting of oxygen and $—NR_8$ wherein R_8 is selected from the class consisting of hydrogen and lower alkyl, phenyl and naphthyl or phenyl and naphthyl substituted by alkyl, amino, hydroxy, alkoxy and oxyalkyl groups or halogen atoms, and benzyl or naphthylmethyl, and furyl or pyridyl groups, D_1 and D_2 complete ring systems selected from the class consisting of benzothiazole, benzoxazole, benzoselenazole, thiazole, thiazoline, quinoline and indole, and n_1, n_2 and m are each selected from nought and one.

3,372,161
POLYCYCLICAMINOSULFONES

Leo A. Paquette, Columbus, Ohio, assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 308,690, Sept. 13, 1963. This application Oct. 16, 1963, Ser. No. 316,520
10 Claims. (Cl. 260—247.1)

Enamines of the formula,



wherein NRR is a cyclic amino group, are condensed with methane or chloromethanesulfonyl chloride to give polycyclicaminosulfones of the formula

The unsaturation can be removed by hydrogenation and/or the free base can be converted to acid addition salts, N-oxides, N-oxide acid addition salts, and alkyl quaternary ammonium salts.

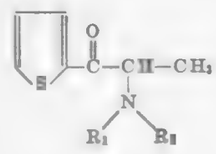
3,372,162
1-(2-THIENYL)-1-OXO-2-AMINO PROPANES

Marcel Pesson, Paris, and Suzanne Geiger, born Berschandy, Neuilly-sur-Seine, France, assignors to Societe anonyme dite: Laboratoire Roger Bellon, Neuilly-sur-Seine, Seine, France, a French company

Filed July 3, 1964, Ser. No. 380,187
Claims priority, application Great Britain, July 4, 1963, 26,642/63
11 Claims. (Cl. 260—247.1)

5. 1-(2'-thienyl)-1-oxo-2-N-morpholinopropane.

11. A 1-(2'-thienyl)-1-oxo-2-amino propane compound selected from the group consisting of a 1-(2'- thienyl)-1-oxo-2-amino propane of the formula



wherein:

R_1 and R_2 are members selected from the group consisting of hydrogen, lower alkyl having from 1 to 4 carbon atoms, benzyl, and

R_1 and R_2 together with the nitrogen atom to which they are attached form a morpholine, pyrrolidine, piperidine, piperazine, 4-lower alkyl substituted piperazine, and 4-hydroxy lower alkyl substituted piperazine rings each of said lower alkyls having from 1 to 4 carbon atoms,

or its pharmaceutically acceptable acid addition salts.

3,372,163

PROCESS FOR THE PREPARATION OF LINEAR QUINACRIDONE IN THE FORM OF RED PIGMENTS

Marco Tessandori, Milan, Italy, assignor to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Continuation-in-part of application Ser. No. 374,276, June 11, 1964. This application May 10, 1966, Ser. No. 548,846

5 Claims. (Cl. 260—279)

1. A process for the preparation of quinacridone in the gamma form as a red pigment characterized by a crystalline X-ray diffraction pattern showing bands corresponding to the θ angles of 6.5°, 13.1°, 13.3°, 13.7°, 17.0°, 20.5°, 23.8°, 25.0° and 26.4° which process comprises treating crude quinacridone having crystals of a size not greater than 2 microns, at least 90% of said crystals being in the alpha form, with about 10 to 100 parts by weight per part of said crude quinacridone of dimethylsulfoxide at a temperature ranging from about room temperature to the boiling point of the dimethylsulfoxide and recovering said gamma form of quinacridone.

3,372,164

BENZENESULFONYL SEMICARBAZIDES

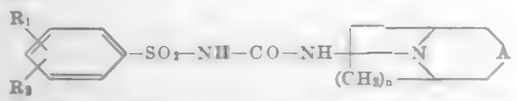
Erich Haack, Heidelberg, and Ruth Heerdt and Kurt Stach, Mannheim, and Felix H. Schmidt, Mannheim-Neuostheim, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany, a corporation of Germany

No Drawing. Filed Aug. 25, 1964, Ser. No. 392,041

Claims priority, application Germany, Sept. 3, 1963, B 73,366

9 Claims. (Cl. 260—292)

A novel class of chemical compounds characterized by blood sugar reducing activity is disclosed. The compounds and their alkali metal, alkaline earth metal and ammonium salts are characterized by the following formula for the free base



in which R_1 and R_2 are selected from the group consisting of hydrogen, halogen, alkyl, alkenyl, alkoxy, alkenoxy, alkylmercapto, acyl, azido, and trifluoromethyl; A is selected from the group consisting of methylene ($>CH_2$), carbonyl ($>CO$) and hydroxymethylene ($>CHOH$) which can be etherified or esterified and n is 1 or 2.

3,372,165

1,2,3,4,5,6 - HEXAHYDRO - 8 - HYDROXY - 2,6 - METHANO-3-BENZAZOCINE DERIVATIVES

Sydney Archer, Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 72,844, Dec. 1, 1960. This application Nov. 23, 1962, Ser. No. 239,777

18 Claims. (Cl. 260—294.7)

1,2,3,4,5,6 - hexahydro-3-(Y-lower alkylene-)-6-(R^1)-11-(R^2)-8-(R^3-O-)-2,6-methano-3-benzazocines wherein Y is halo-alkenyl, cyano, cyano-lower alkenyl, or cycloalkyl, R^1 is hydrogen or lower alkyl, R^2 is hydrogen, methyl, or ethyl, and R^3 is a member of the group consisting of hydrogen, methyl, and, when Y is other than cycloalkyl, the further members lower alkanoyl and pyridinecarbonyl, have pharmacodynamic activity and are useful as antagonists of certain strong analgesic agents, such as morphine and meperidine. The preferred species, 1,2,3,4,5,6-hexahydro-3 - cyclopropylmethyl-6,11 - dimethyl - 8 - hydroxy-2,6-methano-3-benzazocine, also has muscle relaxant and anticonvulsant properties and is useful as a non-addicting strong analgesic.

3,372,166

BENZOXAZOLONES AND BENZOTHIAZOLONES

William J. Houlihan, Mountain Lakes, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Continuation-in-part of application Ser. No. 379,749, July 1, 1964. This application Feb. 23, 1967, Ser. No. 617,823

4 Claims. (Cl. 260—304)

The compounds are 4a - substituted - isoindolo[1,2-b] benzoxazol- (and benzothiazol-)11-ones which are useful as sedatives and tranquilizers. They are prepared by reacting an o-acylbenzoic acid with an o-aminophenol (or thiophenol).

3,372,167

PREPARATION OF WATER SOLUBLE SULFUR VAT DYES

Jan Jacobus Anthonius Moll, Vlaardingen, Netherlands, assignor to Fabriek Van Chemische Producten Vondelingen-plaat N.V., Rotterdam, Netherlands, a corporation of Dutch law

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,097

Claims priority, application Netherlands, Nov. 29, 1962, 286,138

10 Claims. (Cl. 260—315)

1. A process for the preparation of water soluble sulfur vat dyes which comprises treating the sulfur vat dye to remove electrolytes until the amount of electrolytes present in the dye is reduced below about 5 percent by weight and converting the treated sulfur vat dye to the water soluble form by contacting with a salt of sulfurous acid.

3,372,168

10,10-LOWER ALKYL-9-[1-LOWER ALKYL-PYRROLIDINES (3)] - 9,10 - DIHYDRO - ANTHRACENES AND 9-HYDROXY DERIVATIVES THEREOF

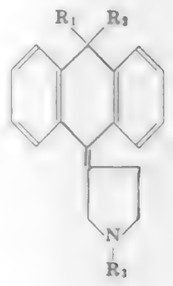
Ernst Jucker, Ettingen, Anton Ebnöther, Reinach, Basel-Land, and Andre Stoll, Birsfelden, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed June 2, 1965, Ser. No. 460,838

Claims priority, application Switzerland, July 7, 1964, 8,912/64

6 Claims. (Cl. 260—326.5)

Compounds of formula



in which R_1, R_2 and R_3 are an alkyl radical containing between 1 and 3 carbon atoms and their acid addition salts, are useful as antidepressants. The dosage is 10–200 mg. per day orally, that is, 0.15–3 mg./kg. of body weight.

3,372,169

PREPARATION OF DIPHENYLMALEIC ANHYDRIDE AND DIPHENYLMALEIC ANHYDRIDE DIMER

John H. Fager, Cross River, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Mar. 29, 1966, Ser. No. 538,237

7 Claims. (Cl. 260—346.3)

A method of preparing diphenylmaleic anhydride dimer by reacting phenylacetic anhydride and an aromatic amine N-oxide in an inert solvent in the presence of light. The diphenylmaleic anhydride dimer produced therefrom is also novel. The invention also covers a method of preparing diphenylmaleic anhydride by reacting phenylacetic anhydride and an aromatic amine N-oxide in an inert solvent.

3,372,170

SULFATION USING AMIDOSULFONIC ACID IN AN INERT SOLVENT

Hermann Remy, West Warwick, R.I., assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 16, 1964, Ser. No. 404,504

Claims priority, application Germany, Oct. 29, 1963, F 41,130

3 Claims. (Cl. 260—372)

There is disclosed herein a method for the preparation of the blue acid dyestuff 1-amino-2-sulfonic acid-4-[2'-R-5'-(β - sulfato-ethylsulfonyl)anilino]anthraquinone, in which R represents hydrogen or the group —COOH, by reacting 1 - amino-2-sulfonic acid-4-[2'-R-5'-(β-hydroxy-ethylsulfonyl)anilino]anthraquinone with amidosulfonic acid at an elevated temperature in the presence of an inert organic solvent.

3,372,171

SULFATION USING AMIDOSULFONIC ACID IN AN INERT SOLVENT

Hermann Remy, West Warwick, R.I., assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister, Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Nov. 22, 1965, Ser. No. 509,180

Claims priority, application Germany, Dec. 2, 1964, F 44,585

3 Claims. (Cl. 260—374)

There is disclosed herein a method for the preparation of the blue acid dyestuff 1-amino-2-sulfonic acid-4-[2'-methoxy - 5' - (β - sulfato-ethylsulfonyl)-anilino]-anthraquinone by reacting 1 - amino - 2 - sulfonic acid-4-[2'-methoxy - 5' - (β-hydroxy-ethylsulfonyl)-anilino]-anthraquinone with amidosulfonic acid at an elevated temperature in the presence of an inert organic solvent.

3,372,172

PREPARATION OF 2,5-DIACYLAMINO-3,6-DIAMINO-1,4-BENZOQUINONES

Erhardt Winkelmann, Wolf-Helmut Wagner, and Manfred Schorr, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,956

Claims priority, application Germany, Dec. 20, 1962 F 38,617

7 Claims. (Cl. 260—396)

Preparation of 2,5-diacylamino-3,6-diamino-1,4-benzoquinones by reacting the corresponding 3,6-dimethoxybenzoquinones with dry ammonia in an anhydrous, polar solvent.

3,372,173

SELENO-SUBSTITUTED STEROID COMPOUNDS

Albert Segaloff, Metairie, and Richard Bruce Gabbard, New Orleans, La., assignors to the United States of America

No Drawing. Filed June 3, 1965, Ser. No. 461,213

17 Claims. (Cl. 260—397.3)

Steroid compounds having a seleno-substituent at the 3-position, which exhibit androgenic activity, and a method of making the same. In the method, a 3-hydroxy-steroid is converted to its p-toluenesulfonate ester in any convenient manner such as by reaction with p-toluenesulfonyl chloride in the presence of an acid acceptor. The p-toluenesulfonate ester is then refluxed with selenourea to produce a steroidal selenopseudourea salt of p-toluenesulfonic acid. The steroidal selenopseudourea salts are hydrolyzed in basic solution and oxidized to diselenides or stabilized as an ester by a Schotten-Baumann recation. The specific steroids used were dehydroepiandrosterone and pregnenolone.

3,372,174

PROCESS FOR CONVERTING 17α-HYDROPEROXY-20-KETO-PREGNANES INTO THE CORRESPONDING 17-KETO-ANDROSTANES

John B. Siddall and John A. Edwards, Palo Alto, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed June 24, 1965, Ser. No. 466,810

Claims priority, application Mexico, July 8, 1964, 77,969

11 Claims. (Cl. 260—397.3)

Process for the preparation of 17-ketoandrostanes from corresponding 17α-hydroperoxy-20-ketopregnanes by treating the latter with hydroxide or oxido of an alkaline or alkaline-earth metal or a lower alcoholate of an alkaline metal or a hydride or amide of an alkaline metal.

3,372,175

19-NOR-14β,17α-PREGNANE DERIVATIVES AND PROCESS

John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Nov. 1, 1965, Ser. No. 505,995

6 Claims. (Cl. 260—397.4)

17β - hydroxy - 19 - nor - 14β,17α - pregn - 4 - ene-3,20-dione, 3β,17β - dihydroxy - 19 - nor - 14β,17α-pregn-4-ene-20-one, and the 3- and/or 17β-esters thereof, which are optionally substituted at the C–6 position with a chloro or fluoro group and/or at the C–18 position with a methyl group, and/or which are optionally unsaturated between the C–6 and C–7 position, are progestational agents and fertility control agents.

3,372,176

ALLYL, HALOALKYL METAL COMPOUNDS

Frank F. Roselli, San Mateo, Calif., assignor to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Original application Apr. 15, 1963, Ser. No. 272,882, now Patent No. 3,299,173, dated Jan. 17, 1967. Divided and this application Aug. 29, 1966, Ser. No. 590,129

10 Claims. (Cl. 260—429.5)

Compounds of the formula $(R^1O)_aM(OR^2)_b$ wherein M is selected from the group consisting of antimony, titanium, silicon, arsenic, tin, lead and bismuth; R^1 is an allyl radical; R^2 is a 2,3-dihalopropyl radical; a and b are integers from 1 to 4, inclusive; and $a+b$ is an integer from 3 to 5, are prepared by reacting a stoichiometric amount of halogen with an unsaturated ester of the formula $(R^1O)_{a+b}M$ e.g. triallyl antimonite. The unsaturated ester may be prepared by reacting the corresponding alcohol with a metal halide. The halogenation reaction is

preferably carried out in an inert solvent. These compounds are useful as fire-retardant additives in curable polyesters. The olefinic group of the additives participate in the polymerization with the result that the fire-retardant agent is an integral part of the cross-linked resin matrix.

3,372,177
PHENYLTOLOXAMINE ALUMINUM PAMOATE

Edmund Stanley Granatek, Baldwinsville, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 17, 1964, Ser. No. 390,204
1 Claim. (Cl. 260—448)

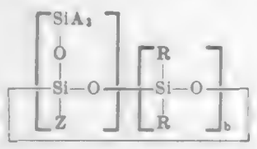
1. Phenyltoloxamine aluminum pamoate.

3,372,178
ARYL-VINYL CONTAINING LINEAR DISILOXANES AND TRI- AND TETRACYCLOSILOXANES

Tse C. Wu, Waterford, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Mar. 4, 1965, Ser. No. 437,287
10 Claims. (Cl. 260—448.2)

1. A cyclopolysiloxane having the formula:



where A is an aryl radical, R is an aryl radical, Z is selected from the class consisting of hydrogen and vinyl groups, and *b* is an integral number of from 2 to 3, inclusive.

8. The triarylsiloxysilane:

$$(C_6H_5)_3SiOSiViCl_2$$

3,372,179
S-SUBSTITUTED-β-MERCAPTOTHIOLBUTYRATES

Ferdinand B. Zienty, Warson Woods, and Alfred A. Schleppnik, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 15, 1965, Ser. No. 472,329
11 Claims. (Cl. 260—455)

Alkyl or aryl esters of S-substituted-β-mercapto thiolbutyric acid. These compounds are useful for various biological applications such as herbicides, insecticides.

3,372,180
PROCESS FOR THE PRODUCTION OF HYDROCARBYL 2,4-DIHYDROCARBYL ALLOPHANATES AND THIOLALLOPHANATES

Henri Ulrich, North Branford, Conn., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,398
18 Claims. (Cl. 260—455)

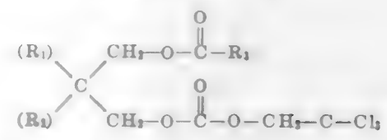
1. A process for the preparation of a compound selected from the class consisting of hydrocarbyl 2,4-dihydrocarbyl allophanates and hydrocarbyl 2,4-dihydrocarbyl thiolallophanates which comprises reacting at a temperature of about 20° C. to about 125° C. approximately stoichiometric proportions of the appropriate hydrocarbyl isocyanate and a compound selected from the class consisting of hydrocarbyl N-hydrocarbylcarbamates and hydrocarbyl N-hydrocarbyl thiolcarbamates in the presence of about 0.01% to about 5% by weight of carbamate of an alkali metal derivative of a compound having the formula RXH wherein R is lower-hydrocarbyl and X is selected from the class consisting of O and S.

3,372,181
CARBONATES AND CARBAMATES OF 2,2-DIALKYL - 1,3 - PROPANEDIOL-(2,2,2-TRICHLOROETHYLCARBONATE)

Joseph V. Swintosky, Perkiomenville, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 24, 1965, Ser. No. 482,272
4 Claims. (Cl. 260—463)

1. A chemical compound of the formula:



in which:

R_1 is methyl or ethyl,

R_2 is a lower alkyl group having from two to four carbon atoms, and

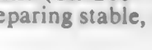
R_3 is $-O-CH_2-C-Cl_3$, NH_2 or NHR_4, R_4 being a lower alkyl group having from one to four carbon atoms.

3,372,182
PROCESS FOR PREPARATION OF STABLE, FREE RADICAL NITROXIDES

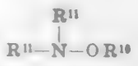
Arthur Kentaro Hoffmann, New Canaan, Conn., Ernestine Gelb'um Abraham, Cumberland, Md., and Allan Murry Feldman, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 27, 1965, Ser. No. 451,315
6 Claims. (Cl. 260—465.5)

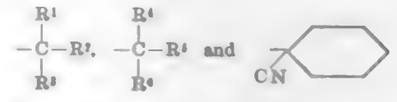
1. A process for preparing stable, free radical nitroxides of the formula:



which comprises pyrolyzing in an inert reaction medium a hydroxylamine of the formula:



wherein R^{10} is selected from the group consisting of



wherein:

R^1, R^2 and R^3 are alkyl;

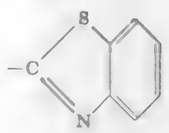
R^4 and R^5 are selected from the group consisting of alkyl, phenyl and halogen-substituted phenyl;

R^6 is selected from the group consisting of —CN, —$COOR^7$, —$CONH_2$, halogen, —SR^8 and —OR^9;

R^7 is selected from the group consisting of alkyl and phenyl;

R^8 is selected from the group consisting of —CN, —$COCH_3$, phenyl,

and



and

R^9 is selected from the group consisting of —$COCH_3$ and —COC_2H_5;

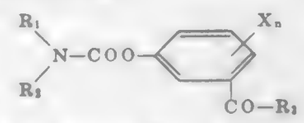
and wherein R^{11} is selected from the group consisting of R^{10} and phenyl.

3,372,183
META-ACYLPHENYL CARBAMATES

Camille Cottin, Lyon, and Jacques Mocotte, Champagne-au-Mont-d'Or, France, assignors to Progil, Paris, France

Filed Apr. 24, 1964, Ser. No. 362,220
Claims priority, application France, Apr. 25, 1963, 932,596
13 Claims. (Cl. 260—471)

The present disclosure relates to carbamic esters of the following general formula



wherein R_1 and R_2 are the same or different and include hydrogen atoms, alkyl, alkenyl, cycloalkyl, cycloalkylene, aryl, or alkyl radicals, or both members of a heterocyclic ring; R_3 is an alkyl radical; X is an electronegative group such as a halogen or the nitro group; and *n* is an integer of 0–4. These carbamic esters have general biocidal properties including bactericidal and fungicidal properties; they have good activity against sea molluscs and nematodes and are excellent insecticides. The carbamates may be used as powders, suspensions, solutions, or emulsions. They may be applied by spraying, coating or impregnating articles or materials therewith.

3,372,184
PRODUCTION OF DIALKYL 2,5-DIARYLAMINO-3,6-DIHYDROTEREPHTHALATES

Albert Murphy Auster, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 12, 1964, Ser. No. 366,917
8 Claims. (Cl. 260—471)

A process for preparing a dialkyl 2,5-diarylamino-3,6-dihydroterephthalate by condensing an arylamine with a dialkyl succinylsuccinate in an inert reaction medium in the presence of a salt or the arylamine and trifluoroacetic acid.

3,372,185
MANGANOUS BENZOATE AS AN ESTER INTERCHANGE CATALYST

William L. Hergenrother, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed May 19, 1965, Ser. No. 457,185
8 Claims. (Cl. 260—475)

1. In a process for the formation of a polymerizable glycol ester of an aromatic dicarboxylic acid in a prepolymer composition for high molecular weight poly(alkylene aromatic dicarboxylate) by an ester interchange reaction between an alkyl monohydric alcohol ester of said dicarboxylic acid and an alkylene glycol, the improvement which comprises heating said alkyl monohydric alcohol ester of said dicarboxylic acid with an excess of an alkylene glycol in the presence of a catalytic amount of manganous benzoate, and removing the resulting monohydric alcohol from the reaction mass.

3,372,186
MANGANESE CHLORIDE TETRAHYDRATE AS AN ESTER INTERCHANGE CATALYST

William L. Hergenrother, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed June 1, 1965, Ser. No. 460,477
8 Claims. (Cl. 260—475)

1. In a process for the formation of a polymerizable glycol ester of an aromatic dicarboxylic acid in a prepolymer composition for high molecular weight poly(alkylene aromatic dicarboxylate) by an ester interchange reaction between an alkyl monohydric alcohol ester of said dicarboxylic acid and an alkylene glycol, the improvement which comprises heating said alkyl monohydric alcohol ester of said dicarboxylic acid with an excess of an alkylene glycol in the presence of a catalytic amount of manganese chloride tetrahydrate and removing the resulting monohydric alcohol from the reaction mass.

3,372,187
METHOD OF MANUFACTURING VINYL ACETATE

George B. Karnofsky, Pittsburgh, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware

Original application Nov. 19, 1962, Ser. No. 238,514, now Patent No. 3,172,733, dated Mar. 9, 1965. Divided and this application Nov. 16, 1964, Ser. No. 411,252
7 Claims. (Cl. 260—498)

1. In the method of manufacturing vinyl acetate monomer by the known method wherein glacial acetic acid and acetylene are introduced into a reactor, the products of which are unreacted acetylene, unreacted acetic acid, vinyl acetate and other condensable side reaction components and wherein such reactor products are subsequently separated in a system comprising a succession of distillation columns in one of which vinyl acetate is stripped from said products and from the final one of which rectified acetic acid is obtained and wherein the unreacted acetylene and rectified acetic acid are recycled to the reactor, the herein-defined process wherein low temperature refrigeration for condensation of the reactor vapor prior to distillation is eliminated, comprising the steps of:

(a) introducing all of the reactor products in vapor and gaseous form into an absorption column interposed between the reactor and the distillation system,

(b) withdrawing a part of the unreacted acetic acid from the distillation system only after the vinyl acetate has been stripped therefrom but before it has been completely rectified and transferring the remaining part of the unrectified acetic acid to the distillation system immediately following the location at which the vinyl acetate has been removed from the distillation system,

(c) introducing the part of the acetic acid so withdrawn into the absorption column as a liquid in a flow countercurrent to the reaction products and absorbing therein condensable components from the reactor,

(d) controlling the temperature within the absorption column substantially throughout its length by indirect cooling to a generally uniform level below 100° F. and above 40° F., and

(e) passing the acetic acid with all of the absorbed components from the absorption column into the distillation system.

3,372,188
SULFOXIDATION PROCESS IN THE PRESENCE OF SULFUR TRIOXIDE

Terence G. Alston, Los Angeles, and William D. Schaeffer, Pomona, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Mar. 12, 1965, Ser. No. 439,441
4 Claims. (Cl. 260—503)

The invention comprises the use of sulfur trioxide in the sulfoxidation of paraffin hydrocarbons to produce normal alkane sulfonic acids where are useful as biodegradable surfactants. The process comprises contacting a paraffin with sulfur dioxide, oxygen and sulfur trioxide at temperatures between about 20 and 100° C. and sufficient pressures to maintain liquid phase conditions. The reaction

is initiated in the presence of a free radical initiator which can be ultraviolet light, peroxides or azo compounds. The sulfur trioxide functions to maintain activity of the reaction without the continuous addition of a free radical forming material thereto.

3,372,189

PROCESS FOR SYNTHESIZING UREA

Eiji Otsuka and Kazumichi Kanai, Fujisawa, and Sadashi Chikaoka, Yokohama, Japan, assignors to Toyo Koatsu Industries, Incorporated, Tokyo, Japan, a corporation of Japan

Filed May 24, 1965, Ser. No. 457,914
Claims priority, application Japan, May 26, 1964, 39/29,335
5 Claims. (Cl. 260—555)

1. Method of eliminating carbon dioxide from an ammonia synthesizing raw material gas containing hydrogen, nitrogen and carbon dioxide and utilizing said eliminated carbon dioxide in the manufacture of urea, comprising the steps of introducing said gas into the lower portion of a washing zone maintained at a pressure of at least about 150 kg./cm.^{2} and passing said gas upwardly through said zone, introducing an absorbent comprising an aqueous solution containing carbon dioxide and ammonia at a temperature less than about 100° C. into the upper portions of said zone and passing it downwardly through said zone in countercurrent contact with said gas to absorb the carbon dioxide in said gas and form an absorbate, collecting said absorbate in the lower portions of said zone, maintaining the composition of said absorbate collected in said lower portions at 2.0 to 3.6 mols ammonia per mol of carbon dioxide by feeding ammonia into the lower portion of said zone while maintaining the temperature of said absorbate at 120 to 180° C., removing said gas freed of carbon dioxide from the upper portions of said zone and passing it to an ammonia synthesis reactor, and removing said absorbate from the lower portions of said zone, adjusting the pressure and temperature thereof to a presure and temperature suitable for urea synthesis and thereafter passing same to a urea synthesis reactor to form an aqueous solution of urea, unreacted carbon dioxide and unreacted ammonia.

3,372,190

PROCESS FOR THE PREPARATION OF TETRACYCLINE HYDROCHLORIDE FROM TETRACYCLINE BASE

George Krsek, Los Angeles, Orville Lowe, Long Beach, and Jerome Murray, San Gabriel, Calif., assignors to Rachelle Laboratories, Inc., a corporation of California

No Drawing. Filed Oct. 23, 1964, Ser. No. 406,176
8 Claims. (Cl. 260—559)

Tetracycline hydrochloride is prepared in high yield from tetracycline base by reacting successive portions of the base in 2-isopropoxy ethanol in such a manner that the reaction mixture initially contains an excess of base over acid, and at the end of the addition, an excess of acid is added to the base. By this means virtually total reaction is ensured and degradation of the base by excess acid minimized.

3,372,191

NITROGENOUS AND FLUORINATED CYCLOALKANES AND CYCLOALKENES AND PREPARATION THEREOF

Harry F. Smith, and Joseph A. Castellano, Wayne, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Sept. 27, 1965, Ser. No. 491,506
20 Claims. (Cl. 260—563)

1. Fluoraminated compositions selected from the group consisting of bis(difluoramino)cycloalkenes, bis(difluoramino)alkylated cycloalkenes, tetrakis(difluoramino) cycloalkanes and tetrakis(difluoramino)alkylated cycloalkanes, said cycloalkanes and cycloalkenes having from 5 to 10 carbon atoms in the alicyclic ring.

3,372,192

PREPARATION OF FLUORINE-GUANIDINES AND BI-GUANIDES

Claude E. Merrill, Lancaster, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 25, 1964, Ser. No. 379,436
7 Claims. (Cl. 260—564)

1. A process for preparing fluorine and nitrogen containing organic compounds which comprises;

(a) providing an aqueous solution having a solute member selected from the group consisting of guanidine salts and biguanide, the guanidine salt solute member being selected from the group consisting of guanidine carbonate, guanidine sulfate and guanidine phosphate,

(b) contacting a flowing liquid film of said solution with fluorine thereby to prepare fluorinated products of the corresponding solute member of said aqueous solution, and

(c) recovering said fluorinated products.

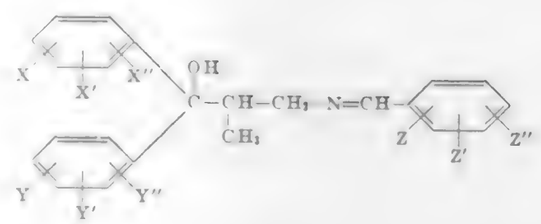
3,372,193

1,1-DIARYL-2-METHYL-3-(BENZYLIDENE-AMINO)PROPAN-(1)-OLS

Robert B. Moffett, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 1, 1966, Ser. No. 554,304
2 Claims. (Cl. 260—566)

1. A componnd of the formula



wherein X, X′, X″, Y, Y′, Y″, Z, Z′, and Z″ are members selected from the group consisting of hydrogen; alkyl containing from 1 to 4 carbon atoms, inclusive; alkoxy containing from 1 to 4 carbon atoms, inclusive; and halogen.

3,372,194

QUATERNARY BENZYLAMMONIUM SALTS

Bent Preben Arnkjaer, Glostrup, Steen Hove Antonsen, Lyngby, and Hans Otto Andersen, Virum, Denmark, assignors to Aktieselskabet Alfred Benzon, Copenhagen, Denmark, a firm

No Drawing. Filed Feb. 16, 1966, Ser. No. 433,199
Claims priority application, Denmark, Feb. 17, 1964, 757/64
6 Claims. (Cl. 260—567.6)

Quaternary benzyl ammonium salts having pronounced preventive effect against development of gastric ulcers, of the same order of magnitude as atropine and other anticholinergic compounds which are widely used in the treatment of gastric ulcers but free from the anticholinergic effect of atropine and like compounds.

3,372,195

REDUCTION OF NITRILES TO PRIMARY AMINES

John C. Little, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 4, 1964, Ser. No. 364,750
15 Claims. (Cl. 260—570.7)

Primary amines are made by hydrogenating a nitrile to its corresponding primary amine at a temperature between 0° and 200° C. and a pressure between 500 and 2000 p.s.i.g. wherein the reaction is carried out in the presence of at least 5 moles of ammonia per equivalent of nitrile and a catalytic amount of ruthenium.

3,372,196

5-(3-METHYL-AMINOPROPYL)-5H-DIBENZO [a,d]-CYCLOHEPTENE

Edward L. Engelhardt, Gwynedd Valley, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application July 25, 1963, Ser. No. 297,710. Divided and this application Nov. 25, 1966, Ser. No. 619,083
1 Claim. (Cl. 260—570.8)

5 - (3 - methylaminopropyl) - 5H - dibenzo [a,d]-cycloheptene which is useful as an anti-depressant and serves as a mood elevator or psychic energizer.

3,372,197

ISOMERIZATION OF DISUBSTITUTED CYCLOHEXANONES

Francis Johnson, Newton Lower Falls, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 11, 1964, Ser. No. 417,765
7 Claims. (Cl. 260—586)

1. The process for converting a disubstituted cyclohexanone having one and only one substituent in the 2-position, each substituent being alkyl, alkoxy, alkylthio, aryl, aryloxy or arylthio, from a more stable to a less stable cis-trans isomer comprising

(1) reacting by contacting the cyclohexanone with a member selected from the group consisting of dialkylamines, pyrrolidine, piperidine and morpholine to produce the corresponding enamine and

(2) hydrolyzing the enamine in an aqueous medium at a pH of not more than 6 and a temperature of not more than 100° C.

3,372,198

VINYLATION OF ORGANIC COMPOUNDS

Norbert F. Cywinski, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 150,648, Nov. 7, 1961. This application Apr. 18, 1963, Ser. No. 273,815
4 Claims. (Cl. 260—597)

1. A process for the production of a ketone from one of acetylene and an alpha-acetylene containing 3–5 carbon atoms to the molecule which comprises reacting at least one of said acetylenes with a ketone having 3–15 carbon atoms to the molecule, said ketone having at least one hydrogen atom attached to at least one of the carbon atoms attached to the ketone group, in the presence of a chemical-free radical initiator at a pressure sufficient to maintain the liquid phase.

3,372,199

PROCESS FOR THE PRODUCTION OF HYDROCINNAMALDEHYDE

Paul N. Rylander, Newark, and Nathan Himselstein, Hillside, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed Mar. 20, 1964, Ser. No. 353,615
1 Claim. (Cl. 260—599)

Aryl aldehydes having alpha, beta olefinic bonds, such as cinnamaldehyde, are hydrogenated to the corresponding aralkyl aldehyde using palladium catalyst and an iron promoter. The method provides the desired aldehydes under appropriate conditions to the virtual exclusion of corresponding alcohols.

3,372,200

TETRAORGANOBORON-PHOSPHORUS COORDINATION COMPLEX COMPOUNDS

Charles J. Stern, Jr., Westfield, and Edward G. Budnick, Scotch Plains, N.J., assignors to Plains Chemical Development Co., Roselle, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 47,943, Aug. 8, 1960. This application Oct. 23, 1964, Ser. No. 406,145
8 Claims. (Cl. 260—606.5)

1. A hexavalent boron-phosphorus containing coordination complex having a formula selected from the group consisting of $(R_1)_3B{\cdot}P(R_2)_3$ and $(R_4)_3B{\cdot}P(R_3)_3$ where R_1 is a hydrocarbyl group containing 4 to 10 carbon atoms, R_2 is alkyl, R_3 is monocyclic carbocyclic aryl and R_4 is alkyl.

3,372,201

ALKOXYLATION OF SECONDARY ALCOHOLS

Robert E. Leary, Somerville, Louis J. Nehmsmann III, Warren, Leslie M. Schenck, Mountainside, and John M. Walts, Clark, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 17, 1966, Ser. No. 558,280
5 Claims. (Cl. 260—615)

1. In a process for producing secondary alcohol polyalkylene glycol ethers, having from 1 to 5 ether linkages, by reacting a secondary alkanol having from 6 to 20 carbon atoms, with an alkylene oxide at a temperature of about 30° to about 150° C. in the presence of a catalytic amount of BF_3 catalyst; the improvement comprising employing as said catalyst a BF_3/trialkylphosphate complex wherein each alkyl contains about 1 to 12 carbon atoms or a BF_3/triarylphosphate complex wherein the aryl groups are monocyclic.

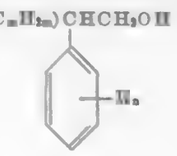
3,372,202

PREPARATION OF ar-HALOPHENETHYL ALCOHOLS

Chester E. Pawloski, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 5, 1964, Ser. No. 349,763
8 Claims. (Cl. 260—618)

1. A process for making an ar-halophenethyl borate which comprises reacting by contacting the borate ester of an alcohol of the formula



wherein R is lower alkyl, *m* is 0–4, and *n* is 0–2, in the liquid phase at 0–200° C. with 0.5–1.5 equivalents of a halogenating agent selected from the group consisting of chlorine, bromine, bromine chloride, sulfuryl chloride, and N-bromosuccinimide.

3,372,203
REMOVAL OF IMPURITIES FROM ALCOHOLS BY EXTRACTION WITH SUGAR
Jerry W. Wimberley, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed Oct. 1, 1964, Ser. No. 400,877
10 Claims. (Cl. 260—643)

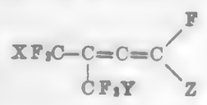
The odor level of alkyl sulfates prepared by sulfating aliphatic alcohols contaminated with odor precursors is improved by contacting said alcohols with sugar prior to sulfating.

3,372,204
PROCESS FOR PREPARATION OF 1-PHENYL-HEPTAFLUOROCYCLOPENTENE
Maurice Stacey, Robert Stephens and John Colin Tatlow, Edgbaston, Birmingham, England, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed May 5, 1966, Ser. No. 547,775
4 Claims. (Cl. 260—650)

1. A process for the preparation of 1-phenylheptafluorocyclopentene which comprises reacting 0.5 to 3 moles of 1-bromoheptafluorocyclopentene with 0.5 to 3 moles of bromobenzene and 5 to 10 moles of copper bronze at an elevated temperature in the range of about 200 degrees centigrade to about 300 degrees centigrade.

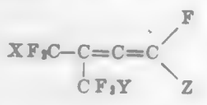
3,372,205
FLUORINATED ALLENES AND PROCESS FOR PREPARING SAME
Robert E. A. Dear, Convent Station, and Everett E. Gilbert, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 22, 1966, Ser. No. 603,735
16 Claims. (Cl. 260—653.3)

1. As new compositions of matter, the fluorinated halomethyl butadienes of the formula:

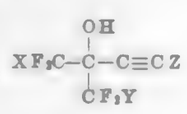


wherein X and Y are the same or different members of the group consisting of hydrogen, fluorine and chlorine, Z is hydrogen or chlorine, and when both X and Y are hydrogen, Z is also hydrogen.

9. The process for preparing fluorinated halomethyl butadiene compounds of the formula:



wherein X and Y are the same or different members of the group consisting of hydrogen, fluorine and chlorine, Z is a member of the group consisting of hydrogen and chlorine and when X and Y are both hydrogen, Z is also hydrogen; which comprises contacting a halomethyl-3-butyne-2-ol of the formula:

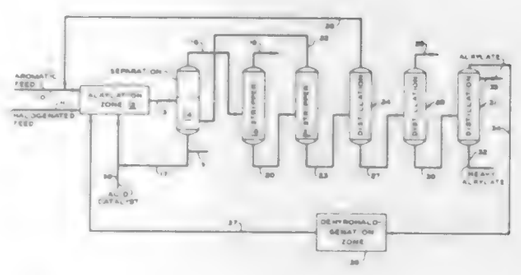


wherein X and Y and Z are as defined above, with a quantity of sulfur tetrafluoride at least about molecularly equivalent to the butyne-ol, at temperatures between about 0° C. and about 30° C. for a period of at least about 2 hours.

3,372,206
PROCESS FOR THE CYCLIZATION OF BUTADIENE-1,3
Roy L. Pruett, Charleston, and William R. Myers, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Mar. 16, 1964, Ser. No. 352,359
9 Claims. (Cl. 260—666)

Process for producing the trimer of butadiene-1,3 which is prepared by inter-reacting butadiene-1,3 with a diaryl manganese compound. The trimer of butadiene-1,3 is useful in the manufacture of reagents.

3,372,207
ALKYLATION PROCESS
Thomas Hutson, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 10, 1964, Ser. No. 381,773
6 Claims. (Cl. 260—671)



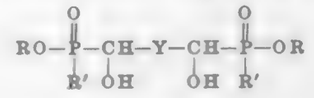
Paraffins are halogenated to a mixture of primary and secondary monohaloalkanes. This mixture is passed to an alkylation zone where an aromatic hydrocarbon is alkylated using a catalyst such as HF. The effluent comprising unreacted primary monohaloalkanes, catalyst, and alkylate product is withdrawn from said alkylation zone and passed to a separation system wherein the catalyst is separated from the hydrocarbon; said unreacted primary monohaloalkanes are separated from the alkylate product and passed through a dehydrohalogenation zone wherein they are converted to 1-olefins. The 1-olefin effluent from this dehydrohalogenation zone is recycled to said alkylation zone wherein said 1-olefins are reacted with the aromatic hydrocarbon to produce additional alkylate.

3,372,208
FLAME RESISTANT EPOXY RESINS CONTAINING PHOSPHORUS AND A HALOGEN
Rolland M. Waters, Beltsville, Md., and John C. Smith, Houston, Tex., assignors to Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 20, 1964, Ser. No. 353,571
7 Claims. (Cl. 260—830)

This application discloses and claims a flame retardant thermosettable epoxy resin consisting essentially of a polyepoxypolyhalophosphonate produced by first forming an adduct by reacting (a) at least 3 moles of a polyepoxide containing more than one 1,2-epoxy group per molecule with (b) one mole of a phosphorus trihalide followed by a rearrangement of that adduct by a heat treatment.

3,372,209
DIPHOSPHORUS ESTER HYDROCARBON DIOLS
Gail H. Birum, Kirkwood, and Rodney B. Clampitt, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Aug. 24, 1964, Ser. No. 391,726
18 Claims. (Cl. 260—932)

Phosphorus hydrocarbon diols of the formula



are useful as reactive flame retarding components in polymers such as polyesters, polyurethanes and polyethers. In the foregoing formula each R is an alkyl of 1 to 12 carbon atoms or a chloroalkyl or bromoalkyl of 2 to 12 carbon atoms while each R′ is an alkyl or alkoxy having 1 to 12 carbon atoms or chloroalkoxy or bromoalkoxy having 2 to 12 carbon atoms or phenyl and Y is alkylene having 2 to 10 carbon atoms or phenylene. The new diols are produced by reacting a dialdehyde with a phosphite or phosphonite ester and water or a non-oxidizing mineral acid or mixtures of the two at a temperature from about —25 to about 125 degrees centigrade.

3,372,210
O,O-DILOWERALKYLPHOSPHORODITHIOMETHYL-(POLY) CHLOROPHENOXYACETATES
Arnold D. Gutman, Oakland, and Thomas L. Snell, Hayward, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 23, 1964, Ser. No. 398,762
5 Claims. (Cl. 260—951)

Compounds having the general formula:

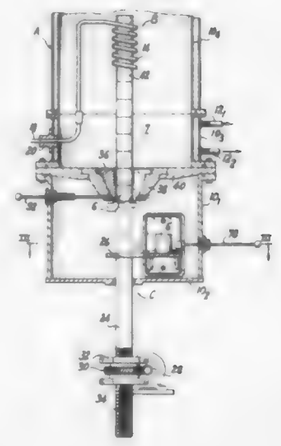
wherein R and R^1 are lower alkyl, X is selected from the group consisting of hydrogen and halogen, preferably chlorine, and *n* is an integer from 1 to 5, inclusive. The compounds are particularly effective as herbicides in the control of grasses and broadleaf plants with both pre-emergence and post-emergence activity. Typical compounds are O,O - dimethyl - phosphorodithioylmethyl-p-chlorophenoxyacetate, O,O - dimethylphosphorodithioylmethyl-2,4,5-trichlorophenoxyacetate and O,O - diisopropylphosphorodithioylmethyl-p-chlorophenoxyacetate.

3,372,211
METHOD FOR MANUFACTURING ORGANOPHOSPHORUS PEROXIDE COMPOUNDS
Nickolai Kirillovich Bliznjuk, Moscow, and Alexei Filippovich Kolomiets and Sergei Georgievich Zhemchuzhin, Moskovskaja Oblast, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovateisky Institute Fitopatologii
No Drawing. Filed May 7, 1964, Ser. No. 365,821
3 Claims. (Cl. 260—985)

A method for manufacturing organophosphorus peroxide compounds in which hydrogen peroxide is reacted with an organophosphorus compound selected from the group consisting of phosphates, and phosphonates of the formula: $R—P(O)(OR')_2$, wherein R is selected from the group consisting of CH_3, $(CH_3)_2NCH_2$, OH, and R″O, wherein R″ is alkyl having 2 to 4 carbon atoms; and R′ is alkyl having 2 to 8 carbon atoms.

The organophosphorus peroxide compounds are useful as initiators of polymerization reactions of vinyls and also as herbicides, fungicides, insecticides, and bleaching agents.

3,372,212
PROCESS FOR PRODUCING DENSIFIED AND ELONGATE BODIES
Bernard Gayet and Jean Holder, Ballancourt, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Nov. 3, 1964, Ser. No. 408,584
Claims priority, application France, Nov. 6, 1963, 952,795
4 Claims. (Cl. 264—.5)



Elongate bodies are formed of cylindrical elements having the cross-section of the body with the elements stacked in end to end relationship. The elements are moved through an induction coil to melt the central part of each element and the elements are then cooled bonding the elements together into an elongated body.

3,372,213
METHOD OF MANUFACTURING OXIDE NUCLEAR FUEL CONTAINING A BORIDE
Atsushi Nishiyama, Kawachi, and Toshio Kasamatsu, Nishinomiya, Japan, assignors to Sumitomo Electric Industries, Ltd., Osaka, Japan, a company of Japan
Filed Dec. 11, 1964, Ser. No. 417,719
Claims priority, application Japan, Dec. 16, 1963, 38/67,386, 38/67,387
5 Claims. (Cl. 264—.5)

1. A method of manufacturing nuclear fuel material having prolonged fuel life which comprises the steps of mixing the powder of oxide nuclear fuel with the powder of at least one of TiB_2, ZrB_2, CrB_2, NbB_2 and VB_2, compacting the mixture under a compacting pressure of at least 3 T./cm.^{2}, and sintering the compacted mixture at a temperature of at least 1,500° C. in a high degree of vacuum of at least 10^{-3} mm. Hg.

3,372,214
METHOD OF DIELECTRICALLY HEAT-MOLDING EPOXY RESINS
Stephen D. Marcey, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
No Drawing. Continuation of application Ser. No. 284,004, May 29, 1963. This application Mar. 20, 1967, Ser. No. 624,628
2 Claims. (Cl. 264—25)

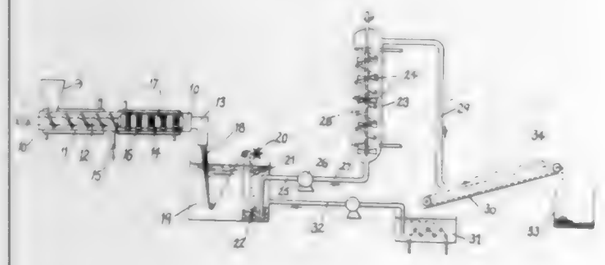
A method of molding and curing a composition of an epoxy resin and a polar epoxy resin curing agent in which the composition is uniformly dielectrically preheated to a temperature within 50° F. of the post-curing temperature within a period of from about 4 to about 60 seconds and poured into a mold which has also been

preheated to the post-curing temperature. The filled mold is maintained at the post-curing temperature for a period of from about 5 to about 45 minutes to gel the composition. The gelled composition is removed from the mold and post cured for a period of from about 30 to about 60 minutes to completely cure the composition. The post-curing temperature can range, for example, from about 150° to about 200° F.

3,372,215
PRODUCTION OF EXPANDABLE POLYMER PARTICLES

Leslie A. Muirhead and Edward L. Hill, Wilmslow, and Brian W. Forster, Lymm, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 16, 1966, Ser. No. 534,829
Claims priority, application Great Britain, Mar. 17, 1965, 11,311/65
8 Claims. (Cl. 264—53)



In the manufacture of expandable thermoplastic particles, such as polystyrene particles containing a vaporizable blowing agent, the vaporizable mass is extruded in filamentary form as an unexpanded extrudate, immediately cooled by contact with a fluid to a temperature not below 60° C., and maintained at that temperature for a normalizing period of time sufficient to result in a product which, upon later unconfined expansion, results in expanded particles in which 90% of the cells have a cell diameter not greater than 100 microns.

3,372,216
METHOD OF MANUFACTURING A MAGNETIC MEMORY CORE

Cornelis Jacobus Esveldt and Thomas Johannes van der Weerden, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

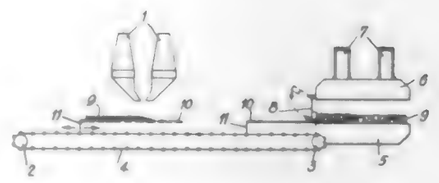
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,536
Claims priority, application Netherlands, Mar. 28, 1964, 64—3,377
1 Claim. (Cl. 264—61)

1. A method of manufacturing an annular magnetic core having an external diameter less than 0.9 mm., an internal diameter of at least half the external diameter, and a height of 0.2 to 0.3 mm., a value of $uV1>18$ mv. and a value of the quotient $uV1/dVz>5$ at a disturbance ratio of 0.55 and a rise time (τ) of 0.2 microsecond comprising the steps of forming a finely-divided mixture of about 39 to 41 mol. percent of Fe_2O_3, about 49 to 51 mol. percent of MnO, about 4 to 6 mol. percent of CuO, and about 4 to 6 mol. percent of ZnO, heating said mixture to a temperature between about 600° C. and 700° C., finely-dividing the resulting product, mixing the finely-divided resulting product with an organic binder, separating a grain fraction from the latter mixture having a grain size between 50 and 120 microns, compacting the latter grain fraction into annular bodies having dimensions approximating those desired in the annular cores, heating the annular bodies to a temperature of about 1350° C. to 1370° C. within sixty seconds in an atmosphere containing at least as much oxygen as air while on a substrate of a refractory metal, cooling the annular bodies to a temperature of about 930° C. to 975° C. at a rate not exceeding 30° C./min., and air quenching the annular bodies.

3,372,217
METHOD AND APPARATUS FOR THE MANUFACTURE OF PRESSED BOARDS

Franciscus Paerels and Werner Ernst Hostettler, Zurich, Switzerland, assignors to Fred Fahrni, Zurich, Switzerland

Filed Oct. 30, 1961, Ser. No. 148,340
Claims priority, application Switzerland, Oct. 28, 1960, 12,099/60
7 Claims. (Cl. 264—122)



2. In a method for the manufacture of pressed boards from wood particles provided with bonding substances, characterized in forming a particle blank below a scattering device by scattering on an endless belt of a transport device, inserting this transport device in the open press, and withdrawing this device from the press while running the belt at the same time, the direction of motion of the belt and its speed being chosen in such a manner that the upper portion of the belt remains motionless in relation to the press plates during this withdrawing motion in order to deposit the blank on the lower press plate without relative motion between the blank and the press plate, and further characterized in that during the scattering operation running the upper portion of the belt alternatively back and forth below the scattering device while the transport device is motionless.

3,372,218
MELT-SPINNING POLYESTER FILAMENTS

David George Bennie, Kinston, and Thurman Ralston Jones, Jr., Greenville, N.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 30, 1964, Ser. No. 400,556
1 Claim. (Cl. 264—169)

1. In a melt-spinning process wherein molten polyethylene terephthalate is spun at a temperature of about 290° C. through a spinneret of chromium steel to form a multifilament yarn, and wherein wetting of the outer face of said spinneret by the molten polyethylene terephthalate has caused spinning discontinuities; the improvement for greatly reducing the frequency of said spinning discontinuities over an extended period of time which comprises conducting said melt-spinning process with a coating on said spinneret face of a continuous film of wax-like tetrafluoroethylene telomer having a number average molecular weight of about 25,000 to 35,000; said coating being produced by heating said spinneret in an electric furnace at a sufficiently high temperature to provide an oxidized surface and cleaning said spinneret, then applying said tetrafluoroethylene telomer as a dispersion, drying the applied dispersion to form a coating, and fusing the coating at a temperature above 325° C.

3,372,219
SYNTHETIC FIBRES BASED UPON POLYVINYL CHLORIDE

Louis Joseph Gord, Ligny-en-Barrois, Meuse, France, assignor to Societe Rhovyl, Paris, France, a French body corporate

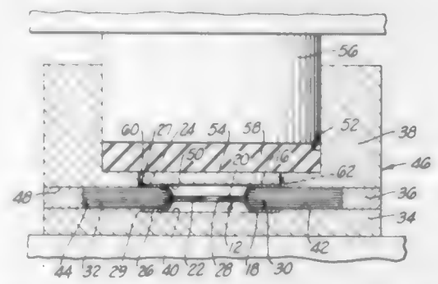
No Drawing. Filed Feb. 6, 1964, Ser. No. 343,148
Claims priority, application France, Feb. 12, 1963, 924,506; Jan. 21, 1964, 961,027
5 Claims. (Cl. 264—210)

Textile fibres based on polyvinyl chloride, but having a particularly low susceptibility to heat shrinkage, are made by spinning from solution or suspension a mixture of chlorinated polyvinyl chloride having a second order transition temperature of at least 100° C., containing at least 66% by weight of chlorine, and having an AFNOR index T51.013 of at least 100, an acetone-soluble content below 10%, and in the form of fibres consisting wholly of the chlorinated polyvinyl chloride, a stretchability in boiling water below 2 times stretch; with polyvinyl chloride, the proportion of the chlorinated polyvinyl chloride being 5–50% of the weight of the mixture.

3,372,220
METHOD OF MOLDING A POLISHING AND DEBURRING WHEEL

Norman H. Stingley, 12801 Woodland Ave., Garden Grove, Calif. 92640

Filed Apr. 12, 1965, Ser. No. 447,166
4 Claims. (Cl. 264—236)



A process for making a polishing and deburring wheel is disclosed in which a wheel having a hub and radially extending wire bristles is located in a mold fitting closely against the hub, a material which is thermohardening and which is elastomeric after thermohardening is injected into the mold adjacent to the hub so as to flow outwardly within the mold substantially parallel to the wires in order to prevent deflection of the wires from a substantially radial position.

3,372,221
PROCESS FOR PREPARING FILAMENTARY MICROTAPES OF LABYRINTHIAN CROSS SECTION

Lloyd E. Lefevre, Bay City, and Robert J. Mathieson, Rhodes, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 338,279, Jan. 2, 1964. This application Aug. 6, 1965, Ser. No. 477,908
10 Claims. (Cl. 264—285)

This application discloses and claims a process for forming filamentary microtapes comprising the sequential steps of orienting a flat fused ribbon of an organic thermoplastic resinous material passing the so oriented and folded ribbon through restricting means of narrower width than the width of the flat oriented ribbon while maintaining minimum forwarding tension on said ribbon and finally withdrawing the so folded microtape from the restricting means at an angle of at least 15 degrees from the straight line projection of the microtape passage through said restricting means.

3,372,222
PROCESS FOR PREPARING FILAMENTARY MICROTAPES OF LABYRINTHIAN CROSS SECTION

Floyd E. Romesberg and Gerald M. Hart, Midland, and Lloyd E. Lefevre, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 338,278, Jan. 2, 1964. This application Aug. 6, 1965, Ser. No. 477,909
9 Claims. (Cl. 264—285)

This application discloses and claims a process for forming filamentary microtapes comprising the sequential steps of passing a flat fused ribbon of an organic thermoplastic resinous material through restricting means of narrower width than the width of the flat ribbon while maintaining sufficient tension on said ribbon and finally withdrawing the so folded microtape from the restricting means at an angle of at least 15 degrees from the straight line projection of the microtape passage through said restricting means.

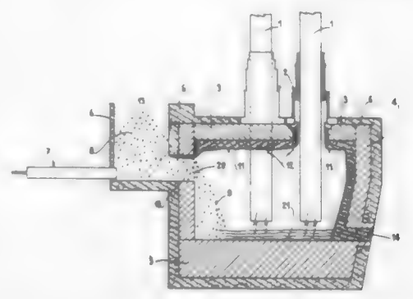
ELECTRICAL

3,372,223
ELECTRIC ARC REDUCTION FURNACE AND METHOD

Charles Daniel Menegoz, Francois Damesin, and Serge Socquet, Mourenx-Ville-Nouvelle, Basses Pyrenees, France, assignors to Pechiney Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

Filed Jan. 13, 1965, Ser. No. 425,229
Claims priority, application France, Jan. 14, 1964, 960,249
25 Claims. (Cl. 13—9)

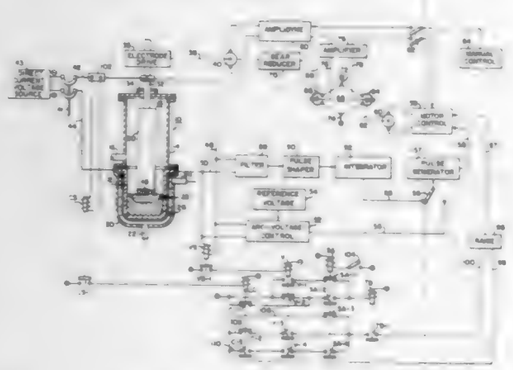
1. An electric arc furnace for reduction of a feed material comprising an oxide ore and a carbonaceous reducing agent, in which substantially all of the electric current supplied to each electrode passes from said electrode into the stripped molten bath on the hearth of the furnace directly through the arc as distinguished from passage through the arc and through the feed material, an electrically insulating device about a portion of each electrode and engaging the electrode in sealing relationship to prevent the escape of vapors therebetween, a lateral prolongation of said device gastightly extending like a dome across the top of the furnace to the furnace side walls, at least one feed opening in a furnace side wall for introduction of the feed material into the furnace, a feed tunnel leading to the feed opening which is located in spaced



relationship from the next electrode and above the hearth of the furnace by amounts to prevent the feed material from coming into contact with the electrode, pistons for displacing feed material laterally into said feed tunnel

and through said feed tunnel into the furnace whereby the feed tunnel is maintained substantially filled with feed material, the reaction vapors arising from within the furnace being limited to passage from the furnace through said feed tunnel whereby substantially all of the condensible part of the vapors condenses upon the feed material for return to the furnace in response to displacement of feed material from the tunnel into the furnace, and at least one top hole in a side wall of the furnace adjacent the hearth for drainage of molten product from the furnace.

3,372,224
CONTROL SYSTEM FOR CONSUMABLE ELECTRODE ARC MELTING FURNACE TO RAISE THE ELECTRODE UPON A POWER FAILURE
Harold S. Jackson, Troy, N.Y., and James B. Murtland, Jr., and Charles F. Rebhun, Natrona Heights, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Sept. 15, 1964, Ser. No. 396,647
11 Claims. (Cl. 13—13)

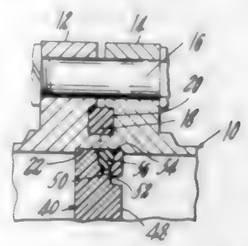


1. In a consumable electrode furnace of the type in which an arc normally exists between a consumable electrode and a molten pool of metal beneath it by virtue of the application of electrical power between the electrode and the pool to create arc voltage and arc current; the improvement of apparatus for moving the electrode upwardly and away from the pool upon failure of said power source, comprising means for sensing arc current, means for sensing arc voltage, and mechanism operable in response to the absence of both arc current and arc voltage for causing the electrode to move upwardly and away from the pool.

3,372,225
ELECTRONIC MUSICAL INSTRUMENT INCORPORATING ROTARY ELECTROSTATIC DEVICES FOR PRODUCING CELESTE OR CHORUS EFFECTS
Donald J. Leslie, Pasadena, Calif., assignor to Columbia Records Distribution Corp.
Filed Mar. 10, 1964, Ser. No. 350,717
53 Claims. (Cl. 84—1.24)

In order to produce a celeste or chorus effect, auxiliary electrical-acoustic channels are derived from the main channels of the electronic organ. One auxiliary channel, including a frequency changing device **15**, suitable amplifiers and a speaker **18**, derives signals from one organ output **11** at which impulses corresponding to notes C, D, E, F#, G# and A# exist. The other auxiliary channel, including the frequency changing device **19**, suitable amplifiers and a speaker **12**, derives signals from the other organ output **12** at which impulses corresponding to notes C#, D#, F, G and B exist. Each frequency changing device (FIG. 3) includes a rotary electrostatic plate **36** cooperable with stationary plates **31**, **32**, **33** and **34** at which the impulses respectively exist in equiangularly spaced phase shift relationship. Motive means M drives the plate **36** at a variable or random rate such as by the device shown in FIGS. 6, 6*a*, 7 and 8.

3,372,226
COAXIAL TRANSMISSION LINE GAS STOP
Donald N. Sewell, Acton, Mass., assignor to Dielectric Products Engineering Company, Inc., Littleton, Mass., a corporation of Michigan
Filed Dec. 14, 1965, Ser. No. 513,765
9 Claims. (Cl. 174—22)



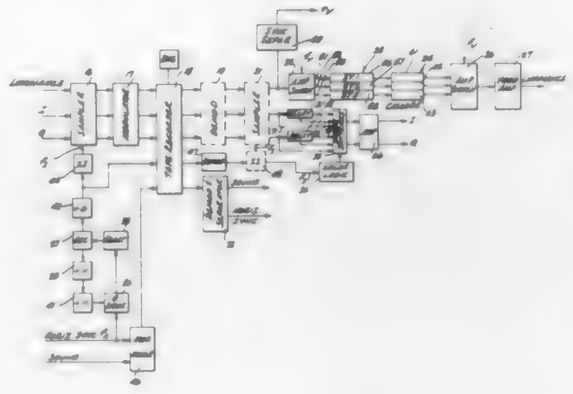
A gas stop structure for replacing an anchor insulator of standard configuration without the necessity of modifying the joint of a coaxial transmission line comprises a Teflon disc having a groove in its inner periphery in which an O-ring member is received for sealing engagement with the inner conductor of the transmission line. A V-shaped groove is formed in the outer periphery of the disc off center of its width and a compensating groove is formed in one face of the disc adjacent the base of the V-shaped groove. This latter groove, in addition to providing electrical compensation, increases the flexibility of one wall of the V-shaped groove. A silicone rubber O-ring having a cross sectional area approximately three times the cross sectional area of the compensation groove, is disposed in the V-shaped groove and forces the flexible wall of that groove out so that the rubber O-ring lies entirely within the V-shaped groove. Thus the rubber O-ring does not interfere with assembly of the disc and inner and outer conductors, while clamping pressure on the walls of the disc at its outer periphery forces the rubber O-ring out into sealing relation with the outer conductor.

3,372,227
ELECTRICAL CONNECTOR UNIT
Kenneth C. Allison, 1546 S. Shore Drive, Crystal Lake, Ill. 60014
Filed Sept. 21, 1966, Ser. No. 581,047
7 Claims. (Cl. 174—87)

Electrical connector unit having an inner sleeve of deformable sheet metal having openings with edge portions which define teeth adapted to pierce the insulation

of wire lead end portions confined within said sleeve. The sleeve has an entrance at one end thereof through which the wire lead end portions have access to the interior area of the sleeve so as to occupy a position opposite said teeth, said interior area of the sleeve being of gradually diminishing cross-sectional size away from said entrance pending such deformation of the sleeve.

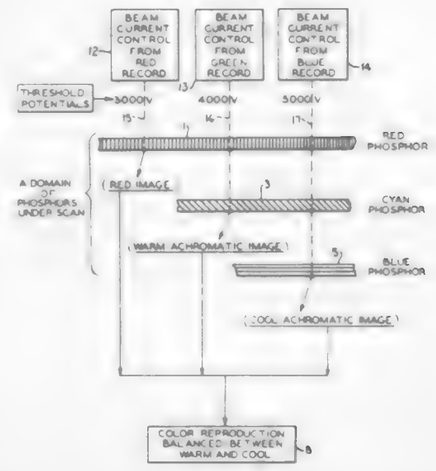
3,372,228
TELEVISION SIGNAL RECORDER
Russell R. Law, Malibu, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed May 21, 1965, Ser. No. 457,642
16 Claims. (Cl. 178—5.4)



A system for reducing the bandwidth requirements of a television signal including a sampler which samples one out of every *n* information areas in a pattern that is repeated every X-frames, a multiple channel recorder for recording the sampled luminance and chrominance information on separate channels; and a circuit for reconstructing the television signal from the played-back sampled information including a plurality of storage tubes alternately operable so that X-frames of played-back luminance information is written into one storage tube while X-frames of previously stored luminance information is read out of another storage tube and a pair of tapped delay lines which delay the played-back sampled chrominance signals for time durations which are multiples of one horizontal scan line whereupon the delayed chrominance signals are combined on the same scan line with non-delayed played-back chrominance information.

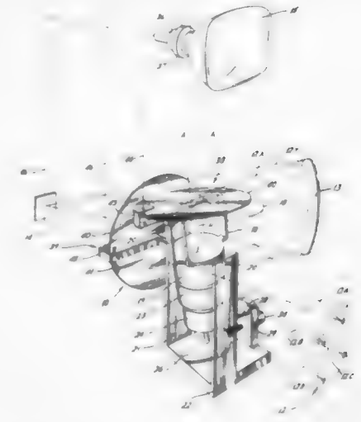
3,372,229
COLOR DISPLAY SYSTEM BY SUPERPOSITION OF A RED IMAGE WITH WARM AND COOL ACHROMATIC IMAGES
Carl A. Barlow, Jr., and Samuel R. Shortes, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 450,705, Apr. 26, 1965. This application Feb. 6, 1967, Ser. No. 614,362
25 Claims. (Cl. 178—5.4)

Disclosed are color display systems and methods for producing colored images from a plurality of records. The system includes a viewing screen having first, second and third phosphors which when energized emit light of different wavelengths. Switching means are provided for energizing the first phosphor in response to a first record to produce a corresponding image in light of relatively long wavelengths, for independently simultaneously energizing the first and second phosphors in response to a second record to produce a corresponding image in warm substantially achromatic light, and for independently simultaneously energizing all of the phosphors in response to a



third record to produce an image corresponding to the third record in cool substantially achromatic light.

3,372,230
TEMPERATURE SCANNING APPARATUS
Albert Wurz, North Wales, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,367
2 Claims. (Cl. 178—6.8)

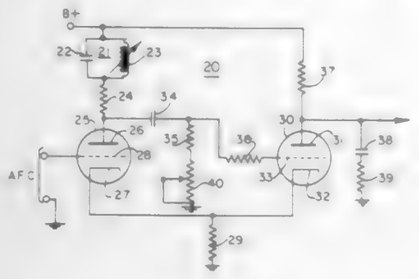


Apparatus for determining and displaying temperature patterns. A reflector is mounted for rocking and rotary motions, and is combined with individually illuminated light shutter members which partake of these motions. Thermal radiations, to be determined and displayed, are transmitted by this reflector to a transducer to control the cathode of a cathode ray tube. Electric signals are derived from the illumination passed by the shutter members to control the deflectors of the cathode ray tube.

3,372,231
SINE WAVE STABILIZED MULTIVIBRATOR
Donald J. Barchok, Chicago, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,495
8 Claims. (Cl. 178—7.3)

1. In a television receiver; a multivibrator oscillator including first and second vacuum tube units having respective anodes, cathodes, and control grids; an impedance

common to said cathodes providing feedback voltages between said vacuum tube units; a coupling circuit joining the anode of said first tube unit to the control grid of said second tube unit; a source of direct current control voltage controlling the frequency of said multivibrator coupled to the control grid of said first tube unit; a sine-

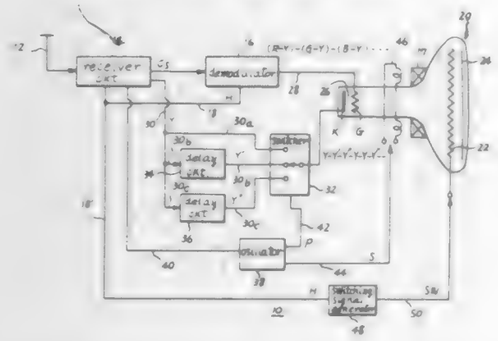


wave stabilizing circuit connected in the anode circuit of said first tube unit; and means in said coupling circuit altering the switching time of said multivibrator whereby a wider range of control voltage may be tolerated without danger of said multivibrator going into uncontrolled oscillation.

3,372,232
COLOR TELEVISION RECEIVER

Satoshi Shimada, Tokyo, Japan, assignor to Sony Corporation, Tokyo Japan, a corporation of Japan

Filed Aug. 30, 1965, Ser. No. 483,619
15 Claims. (Cl. 178—5.4)



A phosphor strip kinescope television receiver having means for applying a luminance signal to the electron gun of the color kinescope and including first and second delaying circuits for delaying the luminance signal for substantially the duration and twice the duration respectively of the horizontal sweep. The luminance signal, the delayed signal, and the subsequently delayed signal are rapidly switched by means of an oscillator circuit to cause each of said three signals to impinge on each vertical phosphor strip. Grid means are provided to assure that only one color is illuminated during each horizontal sweep, and the proper color difference signal is added to the luminance signals during the given color sweep. In this way, all of the picture information is applied to each color phosphor strip through sequential horizontal sweep illumination.

3,372,233
HORIZONTAL AND VERTICAL SYNC SIGNAL COMPARISON SYSTEM

Charles H. Currey, Northbrook, Ill., assignor to A. C. Nielsen Company, Chicago, Ill., a corporation of Delaware

Filed Mar. 29, 1965, Ser. No. 443,257
12 Claims. (Cl. 178—69.5)

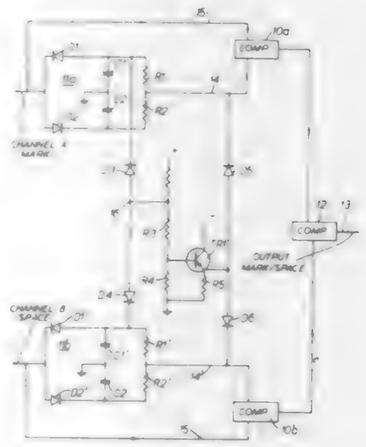
The phase of horizontal and vertical synchronization signals from reference and monitored receivers are compared to determine the channel to which the monitored receiver is tuned. First and second coincidence gates deliver output pulses when the horizontal and vertical synchronization signals are respectively in phase and the output pulses are applied to a third coincidence gate which de-

livers output pulses only when pulses are received from both the first and second gates. A multivibrator and integrator serve to provide a DC signal when output pulses are received from the third gate and the DC signal operates an indicator or recorder.

3,372,234
PULSE SIGNAL DEMODULATOR WITH JUDGEMENT LEVEL PRODUCING AND COMPARISON MEANS

Edward Albert Henry Bowsher, Romford, and Kenneth George Perkins, Cranham, England, assignors to Plessey-UK Limited, a company of Great Britain

Filed Feb. 10, 1964, Ser. No. 343,899
Claims priority, application Great Britain, Feb. 21, 1963, 6,944/63
4 Claims. (Cl. 178—88)

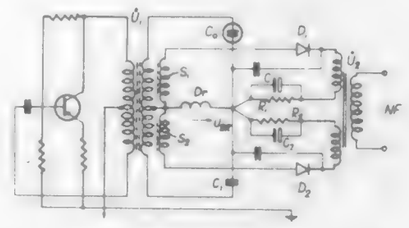


Telegraph receiving apparatus including independent demodulators for "MARK" and "SPACE" channels each demodulator being responsive to a repetitive input signal capable of having either of two levels whose relative and absolute values are liable to variation and including a comparator circuit arranged to receive as separate input signals the instantaneous level of the received signal and a judgement level which lies approximately half way between the level of the maximum and minimum values of the input signal, the comparator circuit being arranged to give an output indicating which of the instantaneous or judgement levels is the greater, the "MARK" and "SPACE" channel demodulators each being associated with a common clamping circuit arranged to prevent the judgement level for either demodulator from rising above a level corresponding to a predetermined fraction of the highest instantaneous signal level obtaining in either channel.

3,372,235
HIGH FREQUENCY CIRCUIT ARRANGEMENT FOR CAPACITIVE TRANSDUCER

Bernhard Weingartner, Vienna, Austria, assignor to Akustische U. Kino-Gerate Gesellschaft m.b.H., Vienna, Austria, a firm

Filed May 18, 1964, Ser. No. 368,104
Claims priority, application Austria, May 20, 1963, A 4,073/63
6 Claims. (Cl. 179—1)

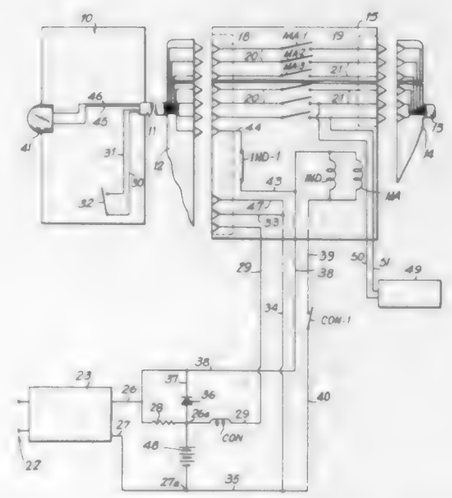


A high frequency electrostatic microphone circuit comprises a transformer having a center tapped secondary winding connected in circuit with a capacitor microphone and a fixed capacitor to form a bridge circuit. The transformer primary winding is connected to the output of a high frequency oscillator. An inductor is connected between the secondary center tap and the junction of the microphone and capacitor. The circuit also includes a demodulating network comprising a pair of oppositely poled diodes, an output transformer having a primary winding in two sections, and the parallel combination of a resistor and capacitor. These elements are connected together to form two series circuits, each including the inductor, across the center tapped secondary winding. The capacitor is chosen so that the parallel R-C circuit exhibits a low impedance to audio frequency signals.

3,372,236
ISOLATING SWITCH ARRANGEMENT FOR TELEPHONES

Edmund I. Schwartz, Fairlawn, N.J., assignor to Devenco Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 18, 1965, Ser. No. 426,261
8 Claims. (Cl. 179—1)



Relay has switches interposed between mainline cable and telephone instrument. Relay coil is energized to close switches when handset is lifted, and deenergized when handset is replaced. Relay embedded in mass of hardened plastic. Indicator lamp energized through switch of second relay when switches of first relay are open, and deenergized when first relay switches close.

3,372,237
MULTIPLEX COMMUNICATION SYSTEM WHEREIN A REDUNDANT BIT OF ONE SIGNAL IS REPLACED BY A BIT OF ANOTHER SIGNAL

Kenneth R. Hackett, Boulder, Colo., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado

Filed Sept. 18, 1963, Ser. No. 309,788
10 Claims. (Cl. 179—15)

10. Apparatus for multiplexing and demultiplexing a first digital signal and a second digital signal, comprising means to create spaces periodically at spaced time intervals on said first signal, said spaces being separated by a plurality of pulses of said first signal, means to insert pulses from said second signal successively into said spaces, at least a portion of which pulses constitute a synchronizing pattern, to form a multiplexed digital signal containing both said first and second digital signals, retiming means to alter said multiplexed digital signal into a series of pulses of substantially equal perods for subsequent transmission or manipulation, means to individually sample and examine selected pulses from said multiplexed digital signal to determine whether they constitute part of said synchronizing pattern including means to generate control pulses to advance the sampling process to a succeeding pulse until said synchronizing pattern is located, means to gate the pulses comprising said second signal from said multiplexed signal to obtain said second digital signal, means to retime the pulses on said multiplexed signal so that the pulses comprising said second signal occupy a substantially smaller time interval than the other pulses, and means to sample said retimed multiplexed signal so as to sample only the pulses comprising said first signal to obtain said first digital signal.

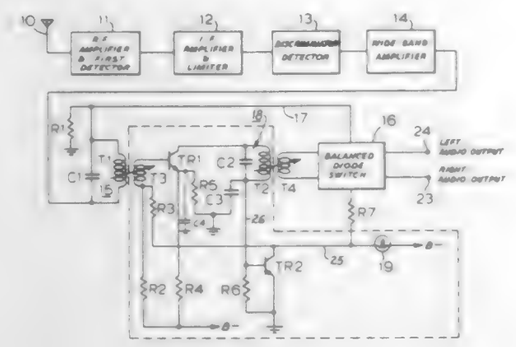
3,372,238
STEREOPHONIC DECODERS FOR F.M. RECEIVERS

Roland H. Fichtner, Waterloo, Ontario, Canada, assignor to Dominion Electrohome Industries Limited, Kitchener, Ontario, Canada

Filed Oct. 10, 1966, Ser. No. 585,660
6 Claims. (Cl. 179—15)

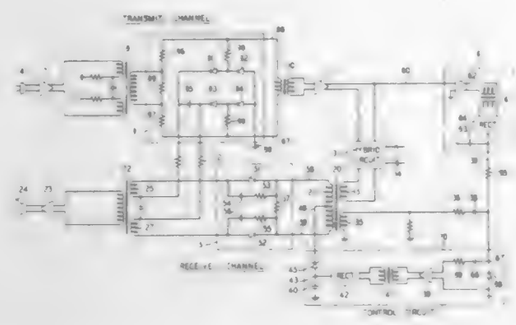
"Motorboating" of an F.M. receiver adapted to reproduce both monaural and stereophonic signals is avoided

by means of a single transistor connected to the tuned circuit of the frequency doubler of the stereophonic decoder and a D.C. feedback path between this transistor and the doubler transistor that varies the base-emitter D.C. bias of the doubler transistor and increases its collec-



tor current in response to an increase in the collector current of the former transistor, whereby a stronger signal is required to switch the decoder from the monaural to the stereophonic operating condition than the signal required to switch the decoder from the stereophonic to the monaural operating condition.

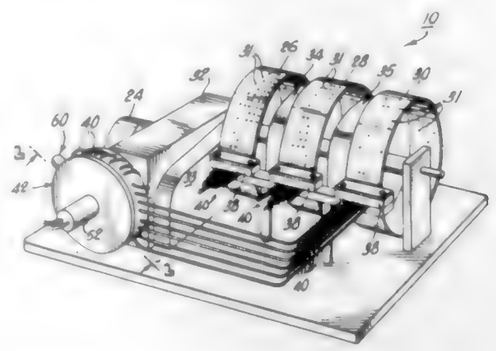
3,372,239
VOICE-SWITCHED INTERPHONE SYSTEM
Frank J. Clement, Matawan, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 1, 1964, Ser. No. 379,454
12 Claims. (Cl. 179—81)



In a loudspeaker telephone system, variolossers insert complementary losses into the transmit and receive channels respectively to reduce acoustical and transhybrid feedback. A direct current flowing through parallel branches of a control circuit regulates the loss inserted by each variolosser, the control circuit being constructed in such a way that clipping and variolosser unbalance are minimized.

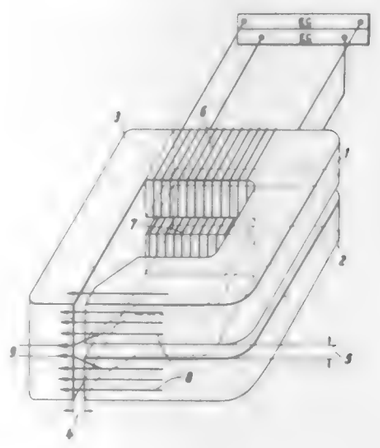
3,372,240
TIME INDICATING RECORDING AND REPRODUCING APPARATUS
John S. Boyers, Bridgeport, Roger C. Curtis, New Haven, Ralph H. Sherman, Jr., Bridgeport, and Raymond R. Crowley, Fairfield, Conn., assignors to Dictaphone Corporation, Bridgeport, Conn., a corporation of New York
Filed Oct. 14, 1963, Ser. No. 315,839
8 Claims. (Cl. 179—100.2)

A recording and reproducing system particularly useful in monitoring audio communications such as communications between aircraft and an aircraft control tower at an airport. The audio communication is recorded on a magnetic record such as a belt or tape, and coded digital signals are recorded at regular intervals on the record near the recorded audio communications. Each of the coded digital signals represents the time of day when the adjacent communication was recorded. The reproducing portion of the system audibly reproduces the audio communications while simultaneously converting the coded digital time of day signals into decimal form



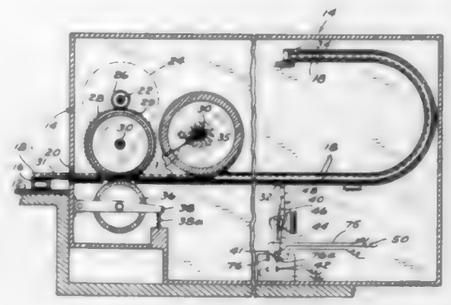
and displaying them visually. Thus, a particular recorded portion can be located rapidly because the time of day when it was recorded is displayed visually while the recording is being reproduced. The system for producing coded digital time-of-day signals includes synchronously-driven rotary drums with coded patterns of holes in them. Light from lamps shines through the holes and into a photoelectric light-to-electric signal transducer structure which produces the desired signals.

3,372,241
MULTITRACK ERASE HEAD
Werner Dziekan and Harald Harkensee, Wedel, Holstein, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Oct. 22, 1963, Ser. No. 318,027
Claims priority, application Germany, Oct. 22, 1962, T 22,897; May 18, 1963, T 24,017
6 Claims. (Cl. 179—100.2)



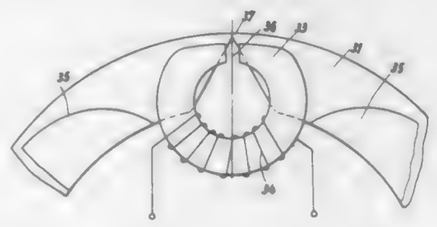
A magnetic erasing head for multiple track tape recorders in which a plurality of spaced core halves are attached at one end to a common core plate which is as wide as the magnetic tape for the recorder, each of the spaced core halves being as wide as a single track of the magnetic tape and being separated from the common core plate by an air gap, with an individual winding for each of the spaced core halves and circuit means for energizing all of the windings simultaneously to erase the entire magnetic tape or fore individually energizing selected windings to erase the corresponding individual track.

3,372,242
MAGNETIC TAPE DEVICE WITH FLEXIBLE HEAD MOUNTING AND MOVING MEANS
Elmer E. Garrett, Rte. 133, Bridgewater, Conn. 06752
Filed Dec. 10, 1963, Ser. No. 329,538
6 Claims. (Cl. 179—100.2)



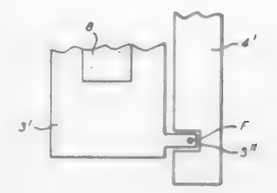
A magnetic tape device having a magnetic recording and reproducing head carried by a flexible tongue. The tongue is slidable in a guide which has straight and arcuate sections, the latter being housed. A motor driven feed means causes the tongue to move in and out of the arcuate guide while a spring pressed take up device winds and unwinds the electrical connectors for the head. Circuitry is provided for selectively stopping the tongue after a single cycle or alternatively to cause it to cycle continuously.

3,372,243
VIDEO TRANSDUCER INCLUDING HIGH AND LOW FREQUENCY SYSTEMS
Eduard Schüller, Wedel, Holstein, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Original application Sept. 10, 1962, Ser. No. 224,464, now Patent No. 3,255,307, dated June 7, 1966. Divided and this application Jan. 14, 1964, Ser. No. 351,880
Claims priority, application Germany, Sept. 8, 1961, T 20,724
8 Claims. (Cl. 179—100.2)



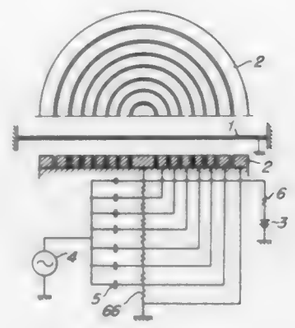
A rotatable magnetic head arrangement for the scanning of broad band signals in the form of a succession of magnetic traces carrying magnetic fields having but a single direction of magnetization and varying according to the entire frequency range of the board band signal, the head arrangement including two annular magnetic systems each having an air gap, the two system air gaps extending parallel to one another and being at least partially coextensive, one magnetic system being responsive to the high frequency portion of the signal band and the other magnetic system being responsive to the low frequency portion thereof.

3,372,244
SEMICONDUCTIVE TRANSDUCERS
Mathew E. Sikorski, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Original application May 23, 1963, Ser. No. 282,792. Divided and this application July 7, 1966, Ser. No. 574,521
1 Claim. (Cl. 179—110)



The disclosure is directed to electromechanical transducers in which stress is applied in various ways to one or both junctions of a transistor. Several device configurations are disclosed which are designed to increase the efficiency of translation of the stress to the junction.

3,372,245
ELECTROSTATIC ELECTRO-ACOUSTIC TRANSDUCER
Tomio Yoshida, Yokohama, and Yasuhiro Riko, Kawasaki-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Jan. 20, 1964, Ser. No. 338,679
Claims priority, application Japan, Jan. 25, 1963, 38/2,687; Oct. 5, 1963, 38/75,582, 38/75,583
9 Claims. (Cl. 179—111)

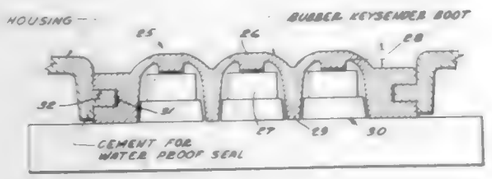


An electrostatic electroacoustic transducer including a novel driving electrode which drives the vibrating member in the manner that the force across the vibrating member is proportional to the free vibrational mode in order for that number to vibrate at a single mode over whole frequency range, the frequency characteristics being further improved by using a novel structure of driving electrode having an auxiliary electrode for motional feedback.

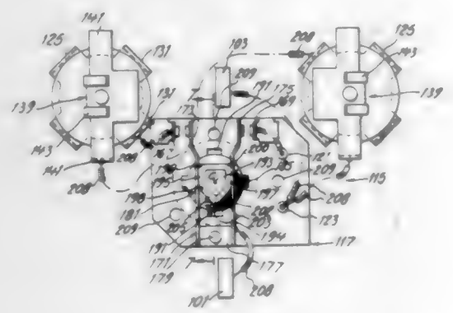
3,372,246
WATERPROOF PUSHBUTTON TELEPHONE SUBSET
Walter J. Knuepfer, La Grange, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 14, 1964, Ser. No. 389,676
1 Claim. (Cl. 179—179)

A waterproof telephone subset is provided. The set has

pushbuttons for dialing which are covered by a resilient boot. The boot permits operation of each button individually while preventing the ingress of water or dust into the set.

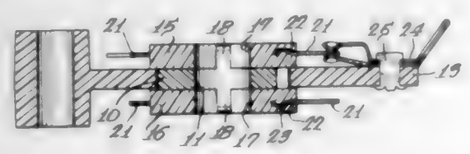


3,372,247
ELECTRIC SWITCH HAVING A PAIR OF CONTACTS ACTUATED BY A CAM MEANS HAVING A PLURALITY OF FLAT OUTER SURFACES
David R. Locke, Bridgeport, and Ronald B. Wuennemann and Robert J. Tolmie, Fairfield, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Original application Jan. 12, 1962, Ser. No. 165,819, now Patent No. 3,255,435, dated June 7, 1966. Divided and this application Oct. 21, 1965, Ser. No. 513,887
2 Claims. (Cl. 200—6)



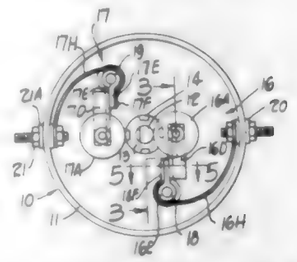
This disclosure is directed to an electric switch comprising a pair of spaced movable leaf spring contacts each adapted for engagement with a corresponding spaced stationary contact wherein an actuator member is provided with cam means disposed between said movable contacts for controlling movement thereof and having a plurality of spaced flat outer surfaces adapted to coact with said movable contacts to be detented by the latter in any moved position.

3,372,248
MULTIPOSITION ROTARY ELECTRIC SWITCH
Kenneth C. Allison, 1546 S. Shore Drive, Crystal Lake, Ill. 60014
Filed Dec. 27, 1966, Ser. No. 604,760
12 Claims. (Cl. 200—11)



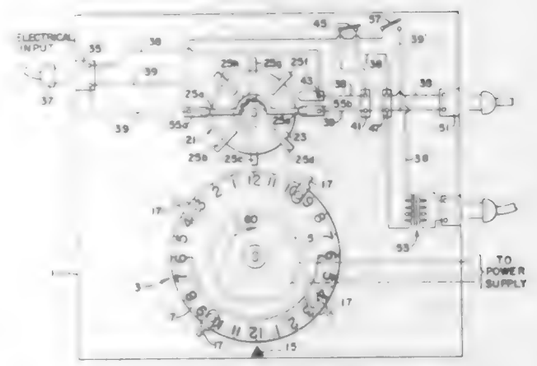
Three section rotor assembly having a pair of rotor contact supporting members containing embedded contacts and a hub member sandwiched between said rotor supporting members and joined in fixed relation to said rotor supporting members by means of axial extensions formed integrally with said hub member.

3,372,249
CIRCUIT BREAKER FOR IGNITION SYSTEMS
Donald D. Withem, 7251 Pettibone Road, Chagrin Falls, Ohio 44022
Filed May 12, 1966, Ser. No. 549,565
9 Claims. (Cl. 200—19)



A circuit breaker arrangement for an ignition system in which there are two cylindrical surfaces non-rotatably mounted on an engine-driven rotatable shaft of an internal combustion engine, the surfaces being spatially disposed relative to each other along the axis of the shaft, a first of the surfaces being of electrical conducting material around its circumference and a second of said surfaces being of electrical conducting material interrupted by electrical insulating material about its circumference, the electrical conducting material of the two cylindrical surfaces being in continuous electrical connection through the shaft, a pair of rollers of electrically conducting material, a first of the rollers being maintained in continuous engagement with the first of said surfaces during its rotation with the shaft, a second of said rollers being in continuous engagement with the second of said surfaces during its rotation with the shaft, one of said rollers being electrically connected with one side of the ignition system and the other of said rollers being electrically connected with the other side of the ignition system, the second roller on engaging the insulating material of the second surface breaking the circuit of the ignition system, the said surfaces and rollers all being enclosed in a unitary housing which carries the rollers in position and which protects the rollers and surfaces from foreign material which might interfere with good electrical contact between rollers and the respective surfaces.

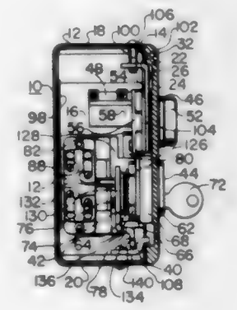
3,372,250
ALL-PURPOSE TIMER
Norman L. Douglas, 119 E. Fudge St., Covington, Va. 24426
Filed Apr. 20, 1966, Ser. No. 543,925
10 Claims. (Cl. 200—38)



1. An all purpose timer for selectively actuating electrically operated devices independent of the electrical requirements for such devices, comprising in combination:
(a) electrical input means;
(b) electrical output means for supplying an output required for the actuation of the electrically operated devices connected thereto;

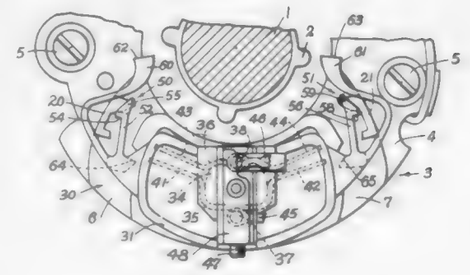
(c) conductive path establishing means electrically connected to said input means and said output means and including first and second contact members, said first contact member being electrically connected to said input means and said second contact member being electrically connected to said output means, and rotatable wafer switch means arranged for selectively connecting said first and second contact members to establish a closed conductive path between said input means and said output means, said switch means including a rotatable switch plate carrying a plurality of conductive bars, each of said bars extending radially from said plate and having another of said bars arranged diametrically opposite thereto, alternate ones of said contact bars being electrically connected with said diametrically opposed bar, said diametrically opposed bar being arranged for contacting said first and second contact members whereby two diametrically opposed and electrically connected bars form a closed conductive path between said first and second contact members so as to establish a conductive path between said input means and said output means;
(d) detent means operatively associated with said switch plate for fixing positions thereof wherein diametrically opposed bars are in alignment with said first and second contact members; and
(e) clock means arranged for cooperation with said wafer switch means for rotating the same at desired intervals so as to selectively cause said electrically connected diametrically opposed conductive bars and said diametrically opposed conductive bars which are not electrically connected to contact said first and second contact members, said clock means including a rotating plate having projecting finger means corresponding to the desired time switching for the electrical devices connected to the output means of the timer, said finger means upon rotation of said clock plate engaging one of said conductive bars of said switch means for pressing against such bar to cause rotation of said switch plate, said detent means fixing a different position of said switch plate and two different diametrically opposed conductive bars contact said first and second contact members.

3,372,251
TAMPER-PROOF KEY-OPERATED ELECTRIC CONTROL STATION
Robert J. Bowman and David F. Wesolowski, Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Feb. 23, 1967, Ser. No. 617,907
6 Claims. (Cl. 200—44)



A key-operated tamper-proof electric control station having a die cast outlet box and cover with externally accessible screws securing the cover to the box. An internal locking arrangement provided for the control station includes a pin extending from one internal end wall of the box and a strike plate extending from the other internal wall of the box prevents unauthorized access to switches carried by the cover when the securing screws are removed unless a key-operated lock, which actuates the switches and carries a member which hooks behind a portion of the strike plate, is rotated to an unlocked position.

3,372,252
DIRECTION SIGNALING APPARATUS
Walter T. Stol, Warren, and Robert Thomson, Dearborn Heights, Mich., assignors to Boyne Products, Inc., Boyne City, Mich., a corporation of Michigan
Filed Oct. 7, 1966, Ser. No. 585,037
11 Claims. (Cl. 200—61.34)

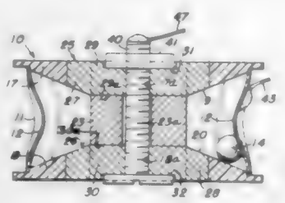


Vehicle direction signaling apparatus having a support on which an actuator is mounted for rocking movement about an axis in either of two directions from a neutral position to a latched, turn indicating position in which a set of indicator lamps at one side or the other of a vehicle is actuated, the support and actuator having cooperable latch parts on the same side of the axis for latching the actuator in its turn indicating position and the support having an abutment engageable by the actuator latch on the opposite side of the axis, the arrangement being such that when the actuator is rocked about the axis in such direction as to effect latching engagement of one actuator latch part and the corresponding support latch, the other actuator latch engages the abutment on the support to arrest the actuator in an intermediate position in which the direction signal indicators at one side or the other of the vehicle are operative and from which position the actuator automatically is restored to its neutral position.

3,372,253
ANTI-DISTURBANCE SWITCH
James L. Baker, Bethesda, and Laurence M. Andrews, Silver Spring, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 19, 1958, Ser. No. 736,409
2 Claims. (Cl. 200—61.45)

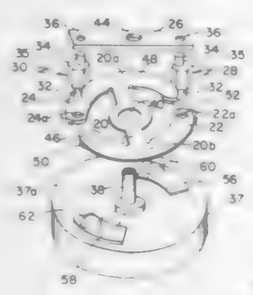
1. An anti-disturbance switch comprising: a hollow metallic cylindrical shell having a series of equi-spaced, inwardly projecting convex wall segments spaced around the shell circumference, said convex segments and said shell forming a series of cavities between successive convex wall segments, upper and lower tapered disks providing closures for the ends of said shell, said disks composed of an insulating material with surfaces tapering towards the shell center, a spur gear in said disk with tooth surfaces ground planar with the tapered surfaces of said disks, the outermost extremity of each tooth extending adjacent and opposite the innermost surface of a corresponding wall segment, said gear and shell acting as electrical conductors separated by the insulation of said disks, a metallic sphere in said shell, the

tapered disks and convex wall segments causing said sphere to rest in a cavity when the switch is at rest, the diameter of said sphere being small enough so that the sphere makes no electrical contact between said convex wall segments and the teeth of said gear, said sphere



being large enough so that when the sphere moves out of said cavity in response to disturbance of the switch it contacts the innermost surfaces of said convex wall segments and the outermost extremities of the gear teeth thus closing the circuit between the shell and gear.

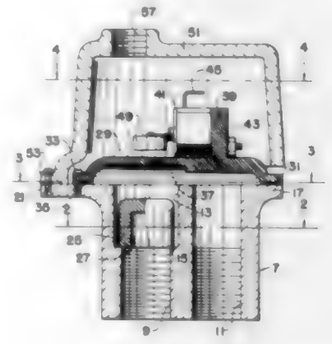
3,372,254
SNAP-ACTING SWITCH MEANS
Hadley Keys Burch, Pittsfield, Vt. 05762, and Lyndon Walkup Burch, 3 River St. Place, Boston, Mass. 02108
Filed Sept. 22, 1966, Ser. No. 583,492
21 Claims. (Cl. 200—63)



1. A snap-acting blade formed of thin resilient material and comprising a central leg, two tension legs each having means thereon forming a mounting point for a stress producing element, and two amplifier legs, one of said tension legs connected to one side, near one end of the central leg, the other tension leg connected to the other side and near the other end of the central leg, the mounting points of said tension legs so located with respect to said blade as to permit the application of tensional stress to said blade to cause it to warp, each amplifier leg connected to the blade in a location to permit amplification of the warpage of said blade, and so connected that when one amplifier leg is warped to one side of the blade, the other leg is warped to the other side, and vice versa, said tension legs and said amplifier legs substantially disposed within a circle centered on the middle of said central leg, projected through the ends of said central leg.

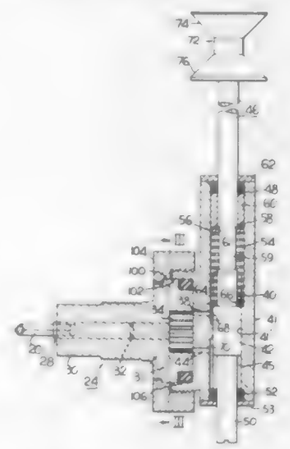
3,372,255
MAGNETICALLY RESPONSIVE FLUID FLOW SWITCH
Melvin O. Allen, 407 S. Coronado, and Shelley Graybill, 606 Cosmos Ave., both of Elkhart, Kans. 67950
Filed Aug. 9, 1965, Ser. No. 478,336
2 Claims. (Cl. 200—81.9)

1. A fluid flow switch comprising, a housing of non-magnetic material having an inlet bore and an outlet bore through same, the axes of said bores generally parallel to each other, each of said bores having internal threads in one end portion thereof, said inlet bore having a cylindrical float chamber in the other end portion thereof, said chamber having a diameter greater than the diameter of said bores and forming a float shoulder in said inlet bore, a generally circular flange portion of said housing on the other end portion thereof having a flat outer surface perpendicular to the axes of said bores, a plurality of threaded spaced cap mounting holes around the outside portion of said flange and through same, three integral cover mounting tabs around the outside portion of said flange having threaded cover mounting holes therein, a cylindrical float of magnetic responsive material having a diameter smaller than the diameter of said float chamber but greater than the diameter of said inlet bore and having a length less than the length of said float chamber, said float movably mounted in said float chamber with one end portion thereof engageable with said float shoulder, a blind bore in the said end portion of said float engageable with said shoulder, a circular domed cap of non-magnetic material sealingly mounted on said flange portion of said housing, an annular mounting flange portion of said cap having spaced mounting holes therethrough coincidental with said cap mounting holes of said housing, screw means mounting said cap on said housing, a sealing material between said cap and said housing sealing same, said dome portion of said cap forming a fluid chamber between said housing and said



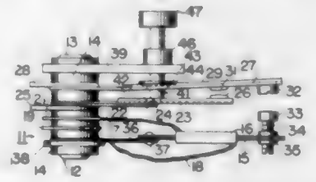
cap, a switch mounting bracket on the top outside portion of said cap, an electrical switch means mounted on said bracket, a switch actuating lever mounted on and extending from said switch means, a permanent magnet mounted on the projecting end portion of said lever and immediately above said float chamber, said magnet tending to be held away from said cap by said switch means, a non-magnetic cup-shaped cover having three mounting flanges around the bottom open end portion thereof coincidental with said cover mounting tabs of said housing, said cover mounted on said housing by screw means through said mounting holes, electrical wiring means operably mounted on said switch means and through said cover, said flow switch constructed and adapted to pass fluid into the threaded end portion of said inlet bore, through said float chamber and around said float and into said fluid chamber, out of said chamber and into and out through said outlet bore, the velocity of said fluid flow forcing said float upwards in said float chamber and engaging a bottom portion of said cap immediately below said magnet, said magnet drawn downwardly towards said float engaging the outside top portion of said cap, and moving said lever to actuate said switch until said fluid flow is insufficient to maintain said float in engagement with said cap, and said float falls downwardly away from said cap, whereupon said magnet lifting from said cap by said switch means and said lever activating said switch.

3,372,256
ROTARY MOTION DETECTOR WITH SIGNAL DEVICE
Neil J. Ryskamp, Markham, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed July 27, 1966, Ser. No. 568,158
1 Claim. (Cl. 200—82)



A rotary motion detector for sensing movement of a moveable part utilizing in combination a hydraulic actuator and positive displacement pump.

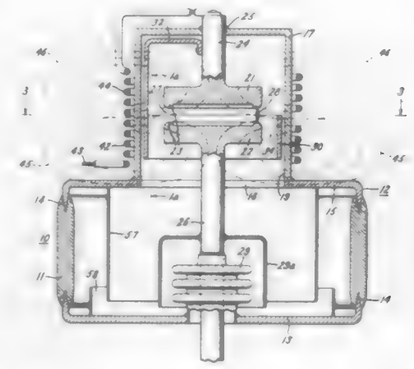
3,372,257
CIRCUIT OPENING RESET MEANS FOR NORMALLY CLOSED ELECTRIC SWITCHES
Edward S. Arlin, Norwalk, and Wayne T. Watson, Mansfield, Ohio, assignors to Norwalk Thermostat Company, Norwalk, Ohio, a corporation of Ohio
Filed Apr. 4, 1966, Ser. No. 539,764
10 Claims. (Cl. 200—122)



A resettable switch having two mutually engageable contacts, each separately mounted for displacement and a reset element having abutments which engage each contact mount to establish a separation of the contacts as a function of the separation of the abutments during a reset operation. The displacement of the reset element to the reset position displaces the contact mount, which makes the principal transit when the switch is tripped to its latch position while displacing the mount of the cooperating contact from its reset position to insure that separation of the contacts is maintained. When the resetting force is removed from the reset element, that element is retracted so that its abutment for the contact mount making the principal transit is spaced from the mount.

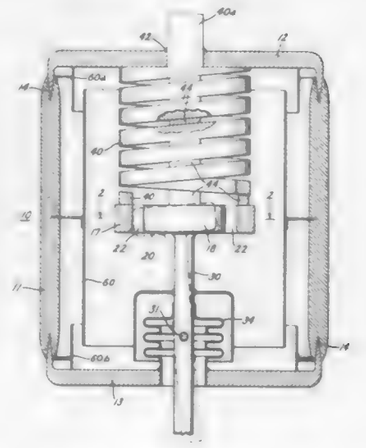
3,372,258
ELECTRIC CIRCUIT INTERRUPTER OF THE VACUUM TYPE WITH ARC-VOLTAGE CONTROL MEANS FOR PROMOTING ARC TRANSFER
Joseph W. Porter, Media, Pa., assignor to General Electric Company, a corporation of New York
Filed May 28, 1965, Ser. No. 459,656
11 Claims. (Cl. 200—144)

A vacuum type circuit interrupter in which arc transfer to a preferred arcing region of the interrupter is promoted by forcing high current arcs located outside the preferred arcing region tob urn with a higher arc voltage than when in said preferred arcing region. The lower arc



voltage in the preferred arcing region is obtained by a strong magnetic field that is oriented generally parallel to the arc when in the preferred arcing region but transverse to arc when outside the preferred arcing region.

3,372,259
VACUUM-TYPE ELECTRIC CIRCUIT INTERRUPTER WITH ARC-VOLTAGE LIMITING MEANS
Joseph W. Porter, Media, Pa., assignor to General Electric Company, a corporation of New York
Filed May 28, 1965, Ser. No. 459,657
9 Claims. (Cl. 200—144)

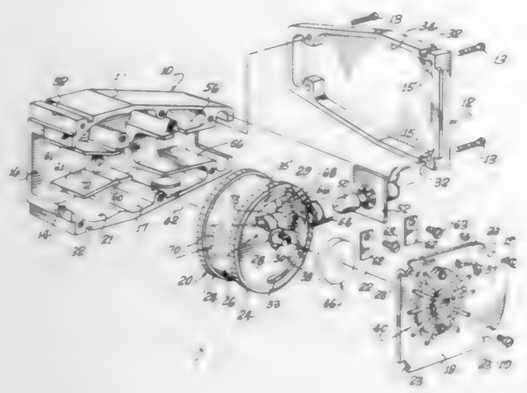


A high-current, A-C circuit interrupter of the vacuum type, comprises a first electrode and a second electrode of generally annular form surounding the first electrode in radially-spaced relationship to define an annular vacuum gap therebetween. During interruption, an arc extending radially of the annular gap is developed and driven circumferentially of the gap. The arc voltage developed by the circumferentially-moving arc is limited by a magnetic field that has its lines of force extending across the annular gap about its entire circumference in a radial direction.

3,372,260
POSITION INDICATOR FOR ROTARY ELEMENT
John M. Bell, Altadena, Calif., assignor to Victoreen Instrument Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 19, 1965, Ser. No. 497,992
8 Claims. (Cl. 200—167)

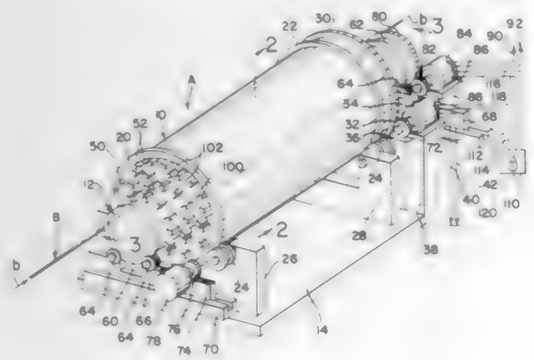
The rotary position of an element, typically a thumbwheel switch, is indicated visually by mounting symbols

at corresponding positions on a cylindrical shell that rotates wth the element; illuminating the symbol at a fixed postion; and projecting a optical image of the illuminated symbol onto a diametrically opposite translucent screen.



The optical projecting system is typically contained within the shell, but can greatly magnify the symbol, providing clearly readable indication even of closely spaced angular positions.

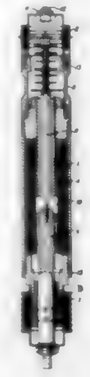
3,372,261
APPARATUS FOR HEATING AN ELONGATED METAL WORKPIECE
Cecil P. Porterfield, Cleveland, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed June 17, 1965, Ser. No. 464,753
6 Claims. (Cl. 219—10.61)



There is provided an apparatus for heating a wire as it moves along a longitudinal path. This apparatus includes two generally telescoped, rotatable drums with a plurality of mutually facing permanent magnets. The drums are rotated to bring together opposite polarity magnets on opposite sides of the path of the moving wire. These opposite polarity magnets are moved across the path to create heating currents in the wire, without actually coming in contact with the wire.

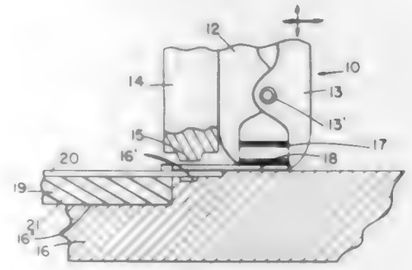
3,372,262
HYDROSOLENOID UNIT FOR ELECTRO-EROSION MACHINES
Abram Lazarevich Livshits, 5th V. Mikhailousky, 28, Apt. 9, and Vadim Evgenjevich Polotsky, Leninsky Prospect, 70/11, Apt. 238, both of Moscow, U.S.S.R.
Filed Apr. 24, 1964, Ser. No. 364,058
4 Claims. (Cl. 219—69)

A hydrosolenoid unit having a cylindrical housing containing a solenoid with a movable core having a vibration damping device including a rod connected to the core and supporting a plurality of removable discs of varied diameter for regulating vibration damping, the housing



having upper and lower bellows secured on both end faces thereof, the lower bellows being rigidly connected at its lower end to the movable core.

3,372,263
WELDING APPARATUS
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of application Ser. No. 362,869, Apr. 27, 1964. This application Feb. 7, 1966, Ser. No. 525,504
9 Claims. (Cl. 219—80)

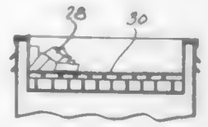


Welding apparatus is provided which is operative to engage, transfer or manipulate and position a member or assembly with respect to another member or assembly to be welded thereto. In one form of the apparatus, mechanical clamping means are provided for seizing and releasing articles to be welded. In another form, air suction means is used to seize, transfer and position articles to be welded whereafter the suction is released to cause release of the article after it is welded. The apparatus is controlled in its operation by automatic control means which may be operative to control the acts of seizing, moving and prepositioning one article to engage another article, the welding of said articles and the release of the assembly in a predetermined cycle of operation of said apparatus.

3,372,264
STOVE FOR SAUNA BATHS
Charles K. Williams, 475 Cambridge St., Ottawa 4, Ontario, Canada
Filed Jan. 27, 1967, Ser. No. 612,130
Claims priority, application Canada, Nov. 22, 1966, 976,104, Patent 764,585
2 Claims. (Cl. 219—367)

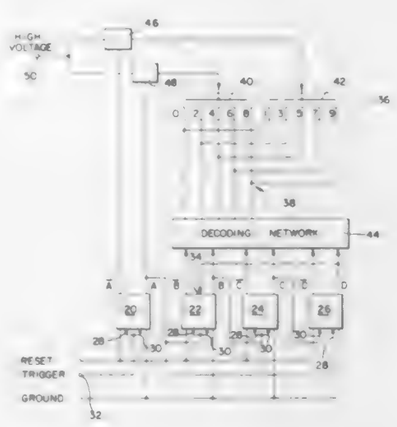
A sauna stove including an open-topped casing having in its upper portion an open-topped cage. The cage bottom comprises an open grid for supporting stones which are heated by electric heating elements mounted either immediately below the grid or positioned on the upper surface of the grid. In the latter arrangement, an expanded

sheet metal heat distributor coextensive in area with the grid may be superposed on the heating elements. Alternatively, a plurality of strips projecting above the heating



elements may be provided on the grid to prevent direct contact of the stove with the heating elements. The casing is provided with ventilating openings.

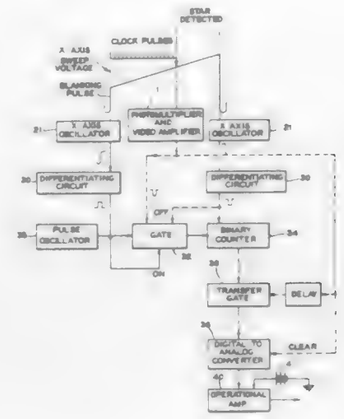
3,372,265
DIGITAL COUNTER
Bernard M. Gordon, Magnolia, and Zaki Abdun-Nabi, Framingham, Mass., assignors, by mesne assignments, to Transitron Electronic Corporation, a corporation of Delaware
Filed July 7, 1964, Ser. No. 380,891
12 Claims. (Cl. 235—92)



A decimal counter includes a biquinary indicator tube having a pair of anodes and ten cathodes associated with a four-stage binary counter and a decoding network so that the indicated count is stepped in sequence in response to each input pulse. There is a feed forward line from the first stage to the fourth stage and a feedback line from the fourth stage to the second stage for restoring the count in the counter to zero upon receipt of every tenth input pulse. The pair of outputs from the first stage are coupled to respective ones of the biquinary tube anodes by means including a gas discharge tube.

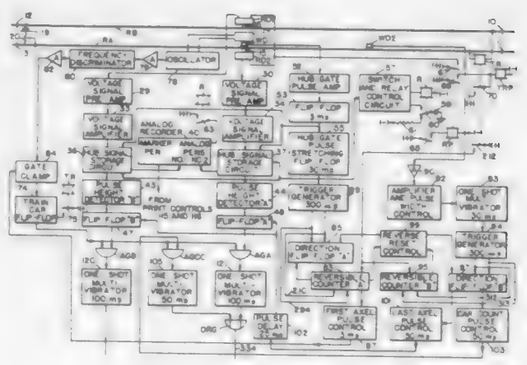
3,372,266
STAR POSITION DETERMINATION CIRCUIT
Edward A. Chilton, Westwood, and George V. Zito, Northvale, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed July 29, 1964, Ser. No. 385,902
8 Claims. (Cl. 235—92)

A circuit for sensing the position of a star has an image dissector tube with a photocathode and provides a signal corresponding to the position of a photoimage of the star thereon. A counter is controlled by scanning means associated with the image dissector to start a count at the beginning of a line scan and to clear the count at the end of a line scan. The signal from the image dissector stops the count of the counter to provide a count corresponding to the photoimage position. Memory means is connected by gating means to the counter, and provides an output corresponding to the photoimage position. The



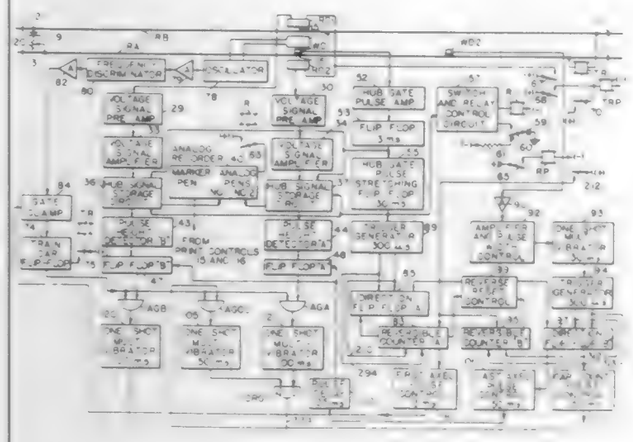
output of the memory means changes only upon a measured change in the photoimage position.

3,372,267
JOURNAL TEMPERATURE INFORMATION RECORDING SYSTEM FOR TRAINS
Donald W. Bramer, Fairport, Lyle Brockman, Rochester, Henry C. Sibley, Adams Basin, and John A. Snell, Rochester, N.Y., assignors to General Signal Corporation, a corporation of New York
Original application May 16, 1961, Ser. No. 110,528, now Patent No. 3,177,359, dated Apr. 6, 1965. Divided and this application Jan. 5, 1965, Ser. No. 423,557
5 Claims. (Cl. 235—92)



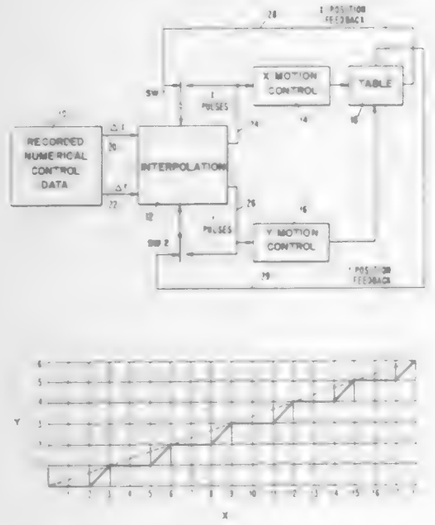
1. A system for counting vehicles as they pass a particular location along a right of way comprising, first and second wheel detectors disposed at spaced intervals along the right of way for providing outputs respectively each time a wheel of a vehicle passes in close proximity to the associated detector, said detectors being spaced a distance apart less than a distance between inside front and rear axles of any of the vehicles, reversible wheel counters for counting the outputs of the wheel detectors respectively, control means for causing said counters to operate through a complete cycle for each vehicle from a zero output count to a count of a total number of outputs for forward axles of a vehicle and return to zero count by subtracting counts of outputs for rear axles for that vehicle, said control means being operable in response to a particular count being made by at least one of the counters to reverse the counters after the outputs caused by passage of all forward axles of a vehicle have

been counted by both counters, respectively and means for generating a vehicle count output in response to the

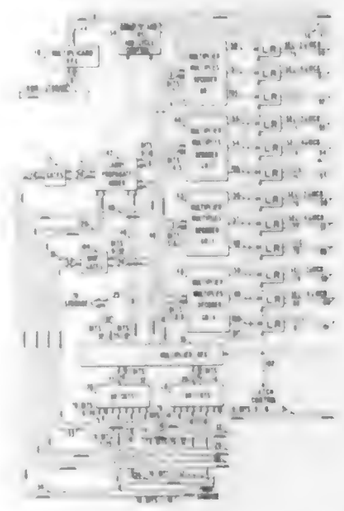


actuation of at least one of the counters to a predetermined condition during the cycle of operation of that counter in counting outputs for the axles of each vehicle.

3,372,268
PULSE GENERATOR
Gerhard Emmerich Hoernes, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 1, 1965, Ser. No. 491,993
4 Claims. (Cl. 235—151.11)

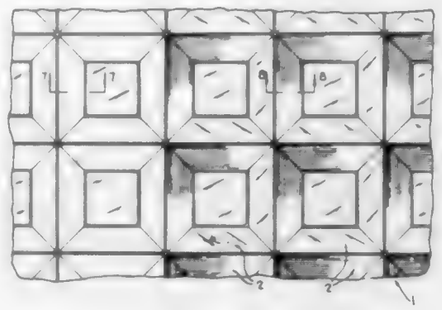


A positioning mechanism which responds to pulses supplied on a first and a second axis such that a movable element is moved along a slope. A pulse generator repetitively generates pulses on the *x* axis and generates a pulse on the *y* axis only when the pulse on the *y* axis will not cause the mechanism to be moved above the slope. An interpolator in the pulse generator subtracts the distance remaining to be moved in the *y* direction from the distance to be moved in the *x* direction repetitively until the result obtained is equal to or less than zero at which time a *y* pulse is emitted. For each subtraction, an *x* pulse is emitted. When the *y* pulse is emitted, the distance now remaining to be moved in the *x* and *y* directions is utilized in the calculations and the subtractions are performed again. This process continues until the distances in both directions are reduced to zero.

3,372,269
MULTIPLIER FOR SIMULTANEOUSLY GENERATING PARTIAL PRODUCTS OF VARIOUS BITS OF THE MULTIPLIER
Olin L. MacSorley and Frank R. Bielawa, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application June 30, 1961, Ser. No. 121,024, now Patent No. 3,253,131, dated May 24, 1966. Divided and this application Oct. 22, 1965, Ser. No. 511,013
10 Claims. (Cl. 235—164)

1. A device for deriving the product of two numbers by generating and accumulating partial products, said device including means to store signals representative of a multiplicand, means to store signals representative of a multiplier, decoder means coupled to the means for storing signals representative of the multiplier which accepts signals in groups starting at the radix point and containing equal numbers of signals in each group, the decoder means operating in response to signals of each group to provide signals representing the numerical value of the group if it has an even value or representing a value of one greater than the numerical value if the value of the group is odd, means to represent the signals of each group as a positive number if the signals of the next higher order group represent an even value, means to obtain the difference between the value represented by the signals of each group and the radix value and represent the result as a negative number if the next higher order group has an odd value, multiple generation means coupled to the means for storing signals representative of the multiplicand for obtaining all even multiples of the multiplicand up to and including the radix times the multiplicand, the decoder means being coupled to the multiple generator means for selecting a corresponding multiple of the multiplicand in the multiple generator means, partial product accumulating means coupled to the multiple generation means for accumulating the selected multiples from said multiple generation means.

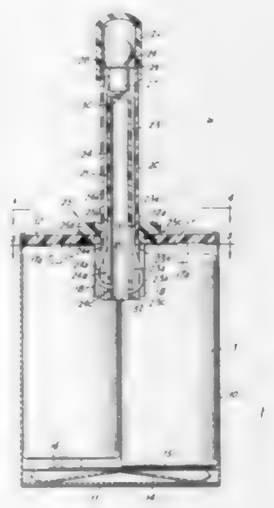
3,372,270
CEILING MODULES
Murray L. Quin, Overland, and Willard R. Garnett, Bellefountaine Neighbors, Mo., assignors to Emerson Electric Co., St. Louis County, Mo., a corporation of Missouri
Filed Sept. 22, 1965, Ser. No. 489,312
25 Claims. (Cl. 240—9)

A ceiling made up of ceiling modules each formed of four trapezoidal panels, each convergent edge of each of the panels being contiguous a convergent edge of another panel, the long bases of the panels lying in a common plane, and the short bases of the panels defining an open seat. A spine extends along and above each line of contiguity between adjacent panels and mounting means in the form of outwardly extending hooks are provided on the spines above the line of contiguity. A central closure



member openably mounted in the seat defined by the short bases of the trapezoids. The central closure member made up of a lamp housing and a light transmitting panel. Lamps mounted in the housing are offset vertically and cross intermediate their ends. Four modules supported at one corner by a single hanger.

3,372,271
BATTERY-OPERATED LIGHT
Douglas W. Rowed, East Lindfield, New South Wales, Norman D. Conran, Roseville, New South Wales, Neville J. Parker, Panania, New South Wales, Maurice L. Coates, Maroubra, New South Wales, and Edward L. Summers, Oyster Bay, New South Wales, Australia, assignors to Union Carbide Australia Limited, Sydney, New South Wales, Australia, a corporation of New South Wales
Filed Sept. 24, 1965, Ser. No. 490,049
4 Claims. (Cl. 240—10.64)

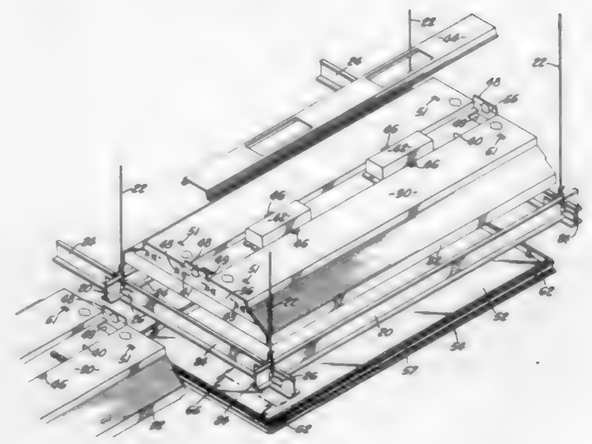


A battery-operated light consisting of a container having therein a cluster of battery cells arranged to form a central space therebetween for reception of a carrier standard for an electric lamp, the carrier standard being provided with electrical contact means for making and breaking a circuit between the battery cells and the electric lamp when the carrier standard is elevated from a fully nested position within the central space defined by the battery cells.

3,372,272
LIGHTING SYSTEM FOR FACILITATING THE DIAGNOSIS AND TREATMENT OF EYE DISORDERS
Donald W. Horley, Winchester, and Donald R. Korb, Boston, Mass., assignors to Donald W. Horley and Donald R. Korb, doing business as Boylston Research Associates, Boston, Mass., a partnership
Filed Dec. 7, 1965, Ser. No. 512,165
6 Claims. (Cl. 240—41.15)

A lighting unit for eye examination and treatment is arranged for suspension from the ceiling over a vertically adjustable patient's chair. The lighting unit includes five fixed 40 watt, 48 inch fluorescent bulbs, three of which produce black light for use in fitting contact lenses and are focused at the same point on the patient's eyes, a fourth of which provides direct white light and is also focused at that same point, and the fifth provides three levels of indirect white light. The lighting unit also includes a group of four 20 watt, 24 inch fluorescent lamps and a 3 watt incandescent lamp that is mounted behind the patient. A pushbutton control enables energization of the ten light sources at fixed intensity levels in different combinations to provide comprehensive accurate light environments for eye examination and treatment purposes.

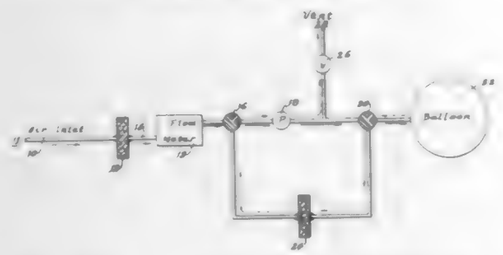
3,372,273
LIGHT FIXTURE FOR A SUSPENDED CEILING
Ormond S. Sutter, Placentia, Calif., assignor to Lok-Products Co., Fullerton, Calif., a corporation of California
Filed Mar. 8, 1965, Ser. No. 437,958
3 Claims. (Cl. 240—78)



A light fixture for suspended ceiling installations wherein a channel is formed along the upper surface of the reflector to form a wireway which can be adapted for easily

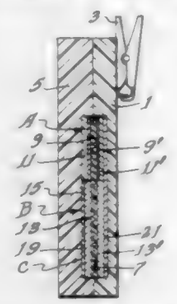
interconnecting a number of fixtures in a line, and further including a removable light diffuser.

3,372,274
INERT RADIOACTIVE FISSION GAS SAMPLER
Robert R. Landolt, West Lafayette, Ind., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 26, 1966, Ser. No. 523,513
3 Claims. (Cl. 250—83)



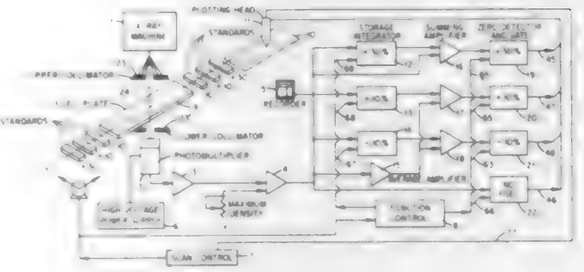
1. The method of measuring the radioactivity of an inert fission gas in a sample of a mixture of gases, comprising the steps:
removing all particulate matter from said sample, thereby obtaining a purified sample;
storing the purified sample in an airtight resiliently-expandable container for a predetermined time;
exhausting the contents of said collapsible container through a collecting means whereby particulate daughter products resulting from decay events occurring within said container are collected therein; and
measuring the radioactivity of the collecting means and the collapsed container to determine the amount of the particulate daughter present in the exhaust mixture;
whereby the quantity of radioactive inert fission gas present in the sample can be determined by the radioactivity decay characteristics of the inert fission gas.

3,372,275
NEUTRON FILM DOSIMETER USING MULTIPLE FILTERS
Leo F. Kocher, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 27, 1966, Ser. No. 554,292
7 Claims. (Cl. 250—83.1)



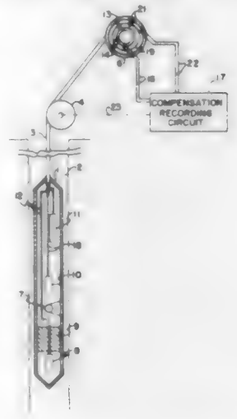
1. A film dosimeter adapted to be worn on the body, comprising at least one sheet of photographic film, three filters mounted adjacent to one face of said film, said filters having the following characteristics:
Filter A, comprising material which has a low capture cross-section for thermal neutrons and fast neutrons;
Filter B, comprising an inner layer adjacent the film having a high capture cross-section for thermal neutrons and an outer layer of a different material also having a high capture cross-section for thermal neutrons, both layers having low capture cross-sections for fast neutrons;
Filter C, comprising an inner layer of material adjacent the film which has a high capture cross-section for thermal neutron and an outer layer which has low capture cross-section for thermal neutrons, both layers having low capture cross-sections for fast neutrons;
Filters A, B and C being so designed as to give substantially equal absorption of photon radiation; and means for supporting said film and filters with the film adjacent the body.

3,372,276
METHOD AND SYSTEM FOR THE NON-DESTRUCTIVE INSPECTION OF VARIABLE DENSITY PLATES
Jay W. Reynolds, Oak Ridge, and Herman J. Stripling, Jr., Knoxville, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 21, 1965, Ser. No. 457,881
15 Claims. (Cl. 250—83.3)



A plate, having a plurality of different required area densities, and a plurality of corresponding standards are automatically inspected in a plurality of incremental longitudinal passes of the plate and standards between a source of penetrating radiation and a detector therefor to thus effect an inspection of the major portion of the plate. The plate inspection involves injecting data from the standards into circuitry for comparison with data derived from the plate itself, with the result that plate areas which are out-of-tolerance are indicated on a chart recorder.

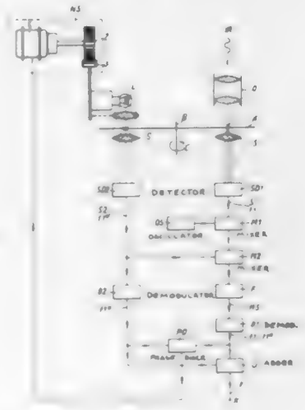
3,372,277
BOREHOLE ACTIVATION LOGGING SYSTEM COMPRISING VARYING STRATA IRRADIATION AS A FUNCTION OF THE RATE OF CHANGE OF TOOL VELOCITY
Arthur H. Youmans, Houston, Tex., assignor, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 24, 1963, Ser. No. 333,102
18 Claims. (Cl. 250—83.3)



1. A well logging instrument comprising:
a well logging tool adapted to be withdrawan from a well during logging operations;

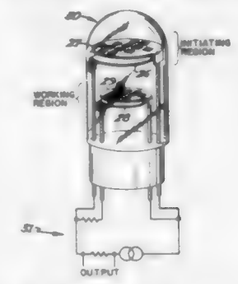
means disposed on said tool for irradiating the strata traversed by said tool;
a radiation detector responsive to radiation from said strata;
means for detecting variations in velocity of said tool while being withdrawn from said well; and
means for directly varying the irradiation to which said strata are subjected as a function of the rate of change of velocity of said tool thereby producing uniform irradiation of the strata.

3,372,278
APPARATUS FOR LOCATING SOURCES OF INFRARED RADIATION
Peter Aemmer, Milwaukee, Wis., assignor to Albiswerk Zurich S.A., Zurich, Switzerland, a Swiss corporation
Filed Feb. 9, 1966, Ser. No. 526,159
Claims priority, application Switzerland, Feb. 15, 1965, 2,025/65
5 Claims. (Cl. 250—83.3)



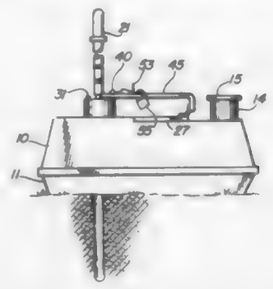
1. In apparatus for locating sources of infrared radiation by measuring at least one angular coordinate relative to the optical axis of the apparatus, said apparatus having a first radiation detector, an objective for projecting an image of the source-containing space onto said first detector, and a scanning member disposed between said detector and said objective for causing said detector to issue for each infinitesimal image element a first oscillating and frequency-modulated signal, the improvement which comprises a second radiation detector on one side of said scanning member, an internal auxiliary radiator situated on the other side of said scanning member for irradiating said second detector through said scanning member to produce in said second detector a second oscillating and frequency-modulated signal, said radiator being displaceable relative to said second detector for adjusting the phase position of said second signal relative to the phase position detectors for mixing said first and second signals, a filter connected to said mixer stage for furnishing a modulated of said first signal, a mixer stage connected to said two mixed signal, a frequency discriminator stage connected to said mixer stage for demodulating said mixed signal, a second frequency discriminator stage connected to one of said two detectors for demodulating the signal issuing therefrom, a phase discriminator connected to said two frequency discriminator stages for measuring the phase angle between the two demodulated signals, said phase discriminator having an output voltage indicative of said phase angle, positional control means mechanically connected with said auxiliary radiator and electrically connected to said phase discriminator for displacing said radiator in the phase-angle reducing sense under control by said output voltage, and an adding stage connected to said two frequency discriminator stages and having an output voltage corresponding to the sum of said two demodulated signals and indicative of the angular coordinate being measured.

3,372,279
ULTRAVIOLET SENSITIVE GEIGER-MUELLER TYPE RADIATION DETECTOR
Robert O. Engh and Robert G. Johnson, Hopkins, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 6, 1965, Ser. No. 453,792
12 Claims. (Cl. 250—83.6)



An ultraviolet detector having an anode-cathode arrangement providing an initiating region wherein discharge occurs in response to detected radiation and an anode-cathode arrangement providing a working region to which the discharge is subsequently transferred.

3,372,280
SAFETY HANDLE AND PROBE FOR PORTABLE SURFACE GAUGE USING RADIOACTIVE SOURCE
David B. Auld, 3123 Childers St., Andrew Lowery, 4901 Grinnell Drive, and Robert F. Penny, Rte. 1, Justice Drive, all of Raleigh, N.C. 27609
Continuation of application Ser. No. 290,539, June 25, 1963. This application Jan. 20, 1966, Ser. No. 560,396
3 Claims. (Cl. 250—106)

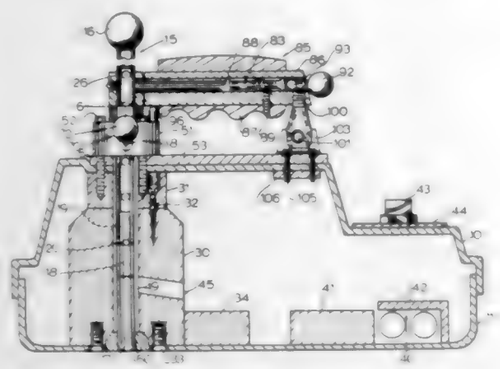


A portable radioactive surface gauge employs a probe rod which mounts a radioactive source and which is constructed so that it will interlock with the handle of the gauge only when the probe rod source is in a shielded above-surface position. The probe can otherwise be releasably secured for measuring in various sub-surface, direct transmission, positions. The handle remains useful as a handle when the probe rod, which is removably mounted in the gauge, is completely removed.

3,372,281
HANDLE-PROBE CONSTRUCTION FOR PORTABLE AND SUBSURFACE DENSITY GAUGE USING RADIOACTIVE SOURCE
David B. Auld, Raleigh, Robert W. Faulkner, Knightdale, and Andrew Lowery, Durham, N.C., assignors to Troxler Electronics Laboratories, Inc., Raleigh, N.C., a corporation of North Carolina
Filed Dec. 31, 1964, Ser. No. 422,796
3 Claims. (Cl. 250—106)

A cooperative probe and handle structure for a radioactive measuring gauge adapts the gauge source to surface

back-scatter measuring positions, subsurface direct transmission measuring positions and shielded transport positions. The gauge handle is hollow and mounts a locking device which locks the probe and handle and makes the



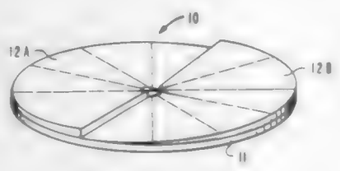
handle useful as a handle only when the probe is positioned so that the source is shielded. The gauge probe can be releasably locked in various positions such that the source can be placed in corresponding subsurface direct transmission positions or in a surface back-scatter position.

3,372,282

COLOR CODING OPTICAL RETICLE

Martin Bressler, Covina, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

Filed Apr. 29, 1965, Ser. No. 451,911
5 Claims. (Cl. 250—236)



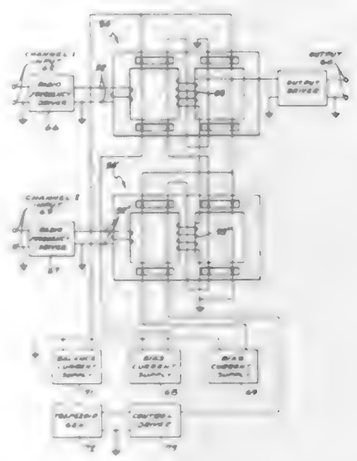
This disclosure concerns a color coding optical reticle for an optical system useful in detecting and tracking sources of infrared radiation. The reticle comprises a circular base of light-transmitting material, such as quartz, having a planar surface, and a coating disposed on the planar surface of the base. The coating comprises a material having light-absorptive and light-transmitting qualities so as to transmit a particular range of light wavelengths therethrough while absorbing other light wavelengths falling outside of the range. One such suitable material for the coating is germanium which transmits light in the infrared part of the spectrum, while absorbing a high percentage of light occurring in the visible part of the spectrum. The coating is of a specific variable thickness enabling the reticle to act as an optical wedge, wherein light incident thereon produces linear interference fringes because of interference occurring in light reflected by the reticle. These linear interference fringes are indicative of the particular wavelengths of light to which the reticle is exposed. Upon rotating the reticle at a constant angular velocity, the linear interference fringes produced thereon code the light incident to the optical system and to the reticle forming a component thereof as a composite frequency signal which is converted to a variable electrical signal by a light detector in registration with the reticle. The variable electrical signal from the detector may be analyzed so as to separate and compare the various spectral constituents of the light incident to the optical system.

3,372,283

ATTENUATION CONTROL DEVICE

Andre A. Jaecklin, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Feb. 15, 1965, Ser. No. 432,500
12 Claims. (Cl. 307—83)



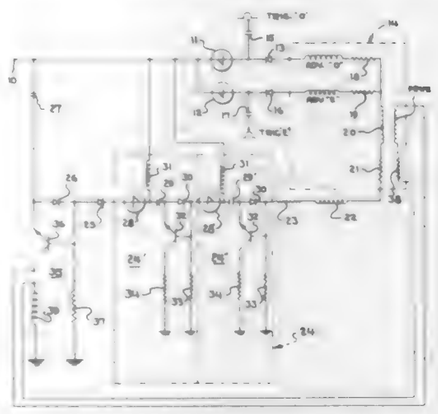
A transformer wherein attenuation of signals coupled between input and output windings on a core is controlled by varying the saturation of flux paths through the core between the windings. Very high level attenuation and a substantially linear attenuation control characteristic are obtained by the employment of a differential transformer configuration wherein input windings on two outer legs of a core are arranged to induce equal fluxes therein in directions of mutual opposition in a central leg of the core upon which an output winding is wound. Saturation inducing control windings in push-pull on legs interconnecting the outer and central legs vary the flux differential in the central leg to vary the attenuation of a signal coupled between the input and output windings in accordance with a control signal applied to the control windings. The transformer has varied utility as a slow switcher, automatic gain control, phase detector, analog adder, analog multiplier, etc.

3,372,284

VOLTAGE-MULTIPLYING DRIVE CIRCUIT FOR MAGNETIC CORE DEVICE

Keith Henry Dormer, Harrisburg, and Charles Thomas Wyrick, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Aug. 20, 1964, Ser. No. 390,980
16 Claims. (Cl. 307—88)



1. An electronic circuit comprising a pair of solid state switch means connected to be alternatively driven to conduction, an input for applying a substantially constant voltage to said switch means, means in circuit with each

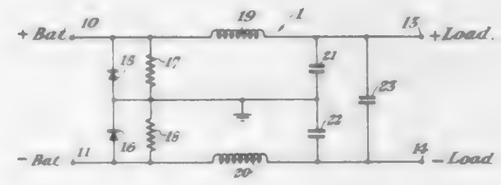
switch means and responsive to conduction thereof to produce output pulses, means connected to said last-mentioned means to delay conduction of said switch means to provide control current and to provide proper sequential conduction thereof, and voltage-multiplying means in said output pulse producing means to provide increased voltage.

3,372,285

TRANSIENT VOLTAGE SUPPRESSORS

Frank V. Blazek, Monroeville, and Chalmers W. Gilbert, Penn Hills Township, Allegheny County, Pa., assignors to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Oct. 9, 1964, Ser. No. 402,868
6 Claims. (Cl. 307—93)



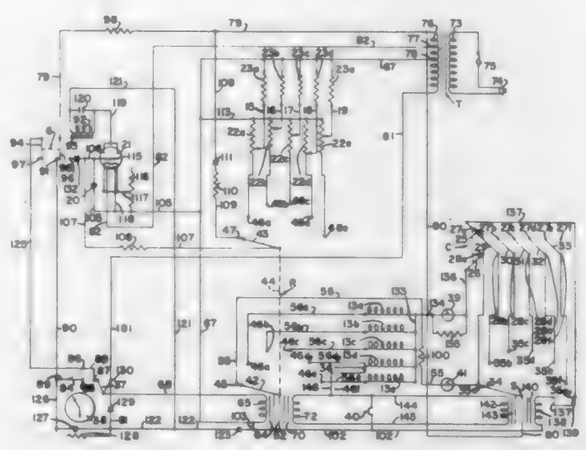
The present invention relates to an improved transient voltage suppressor for protecting solid state apparatus by subduing high voltage surges or transients which might appear on a source of power. The transient voltage suppressors comprises a three terminal network consisting of a plurality of diodes, resistors, capacitors and inductors for providing protection from each side of the power source to ground as well as across each side of the power source. The diodes are serially connected from line to line with the intermediate junction connected to ground. Similarly, the resistors are serially connected from line to line with their intermediate junction also connected to ground. Likewise, a pair of capacitors are serially connected from line to line with their intermediate junction also being connected to ground. An additional capacitor is connected between line to line, and an inductor is connected in each line between the source and load terminals. Accordingly, the voltage suppressor is capable of handling surges or spikes of either alternating or direct current types which may occur from line to line or line to ground.

3,372,286

SPRINKLER SYSTEM CONTROL APPARATUS

Orlo Rotunda, 1720 9th St., Greeley, Colo. 80631

Filed Aug. 20, 1964, Ser. No. 390,846
8 Claims. (Cl. 307—141.4)



The subject matter is an automatic sequence control for a multi-bank lawn sprinkling system or the like, having a plurality of electrical actuators, such as solenoid valves. The sequence control includes two stepper relay switches adapted to operate in unison. The circuit extending from the first step of the first stepper relay is a starter circuit which includes a normally open switch adapted to be momentarily closed by a clock mechanism at selected time intervals, such as 24 hours. Circuits extend from the other contacts of this first stepper relay to the solenoid valves. The final step of the sequence on this first stepper relay includes a circuit to return the stepper arm to its initial position.

The starter circuit is adapted to swing the arm of each stepper from its first step contact to the next step in sequence and a pulser circuit is adapted to thereafter swing each arm from one step contact to the next. This pulser circuit includes a tube which functions as an electronic gate and flow of current is prevented in this circuit as long as there is a charge upon the grid of this tube. A timer circuit connects with this tube grid and includes a capacitor adapted to hold a charge on the grid. The charging and discharging of this capacitor operates the pulser circuit. A first charging circuit connects with the first step of the second relay to charge the capacitor at the initiation of the operation of the control. A second charging circuit, including a normally open relay switch, is connected with the timer circuit and is actuated by the relay solenoid in the pulser circuit to close the switch and charge the capacitor whenever a current is flowing in the pulser circuit and when the stepper arms are stepping.

Resistor leads connect with the subsequent contacts of the second relay and each circuit formed through this relay, as the arm of the relay moves from one contact to the next, is adapted to short the timer circuit to discharge the capacitor. However, the resistance in each lead permits only a slow leakage of current from the capacitor, sufficient to establish a selected time interval before the capacitor is discharged and current may again flow through the pulser circuit.

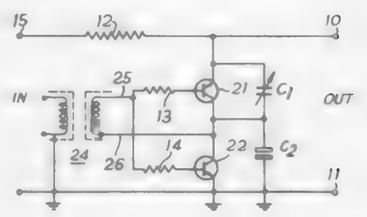
Additional features of this apparatus may include a manual switch for starting and stopping the apparatus at will. Such feaure may also include a third stepper type control adapted to shift one step once for each complete cyclic operation of the first two steppers with the leads of this third stepper interposed in the electrical auctuator leads, to allow or prevent operation of the electrical actuators during a cycle of operation of the sequence control, such, for example, as on alternate days.

3,372,287

SUPPRESSION OF TRANSIENTS AT THE OUTPUTS OF TRANSISTOR SWITCHING CIRCUITS

Eric Metcalf, Headley, Bordon, England, assignor to The Solartron Electronic Group Limited, Farnborough, England, a British company

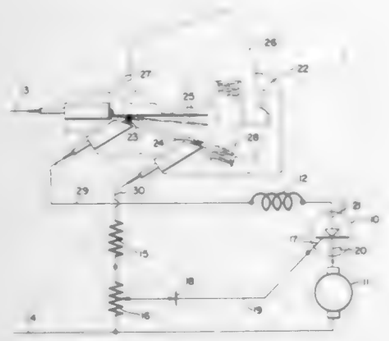
Filed Mar. 8, 1965, Ser. No. 437,664
11 Claims. (Cl. 307—240)



A circuit for connecting and disconnecting two terminals is described, which uses two transistors with their emitter-collector paths back to back, or one double emitter transistor with its emitter-collector paths back to back. A switching voltage is applied to the transistor or transistors when they are to conduct, and the switching voltage is prevented from reaching the two terminals by the

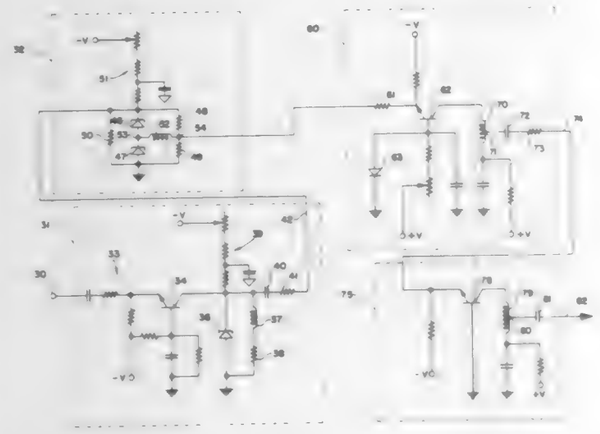
addition of a capacitor or capacitors to the circuit, connected as part of a balanced bridge circuit. The switching voltage is applied across opposite corners of the bridge, and the two terminals form another pair of opposite corners.

3,372,288
SEQUENTIAL SWITCHING WITH DELAY FOR CONTROLLED RECTIFIER CIRCUITS
Jerry Wigington, Pickens, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 24, 1964, Ser. No. 391,589
6 Claims. (Cl. 307—252)



A switching circuit employs a manually-operated sequential switch having two pairs of contacts and a single actuator for connecting and disconnecting an A.C. voltage to and from a circuit in which a semi-conductor rectifier having a signal current path controls a power current path to a load. The contact pairs are arranged mechanically to be closed and opened in a time sequence with a specified minimum time delay related to the period of the A.C. voltage. One pair of contacts applies A.C. voltage to the power current path and the other pair of contacts applies A.C. voltage to the signal current path.

3,372,289
TUNNEL DIODE BINARY OUTPUT CIRCUIT
Donald G. Meyer, San Pablo, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed June 30, 1965, Ser. No. 468,219
9 Claims. (Cl. 307—286)



1. An output circuit for use with a tunnel diode binary circuit, the tunnel diode binary circuit including a pair of series connected tunnel diodes connected to a bias source, first and second series connected resistances shunting said tunnel diodes, and a memory inductance connected from the junction of the tunnel diodes to the junction of said resistances, the improvement comprising

an output terminal for said binary circuit connected to the junction of said resistances,

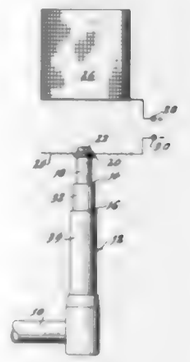
an amplifier,

said output terminal being connected through a third resistance to the input of said amplifier,

a current transformer, and

the output of said amplifier being connected through said transformer to an output terminal.

3,372,290
ELECTRICAL GENERATOR
Edmund S. Sowa, Westmont, and Charles J. Divona, Lockport, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 11, 1965, Ser. No. 455,020
3 Claims. (Cl. 310—5)



1. Apparatus for generating an electrical potential comprising:

a source of pressurized vapor;

means for forming said vapor into a high-velocity jet;

means having a surface fixed substantially normal to the flow direction of said vapor jet for abruptly deflecting said vapor jet, the relative motion of the vapor jet with respect to the deflecting surface being sufficient to cause a shock wave in the region of deflection whereby the vapor passing through said shock wave is ionized;

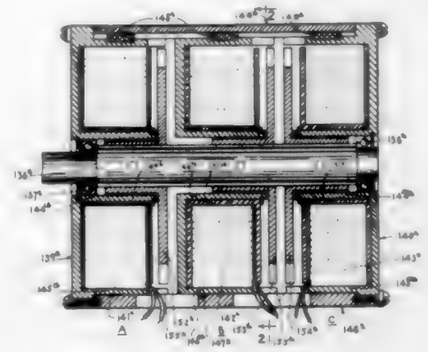
first conducting means located directly beyond the region of deflection and in the direction of flow of the deflected vapor for contacting said deflected vapor and collecting negative charge; and

second conducting means located further in the direction of flow than said first conducting means for contacting said vapor and collecting residual positive charge, whereby an electrical potential is built up between said first and second conducting means.

3,372,291
MOTOR DRIVES FOR CONTROL RODS OF REACTORS, AND THE LIKE
Chester W. Lytle and William A. Bradley, Albuquerque, N. Mex., and Robert V. Suhrke, Colorado Springs, Colo., assignors to Thomas A. Banning, Jr., Chicago, Ill.
Original application June 20, 1960, Ser. No. 37,503, now Patent No. 3,264,502, dated Aug. 2, 1966. Divided and this application Aug. 1, 1966, Ser. No. 578,951
4 Claims. (Cl. 310—49)

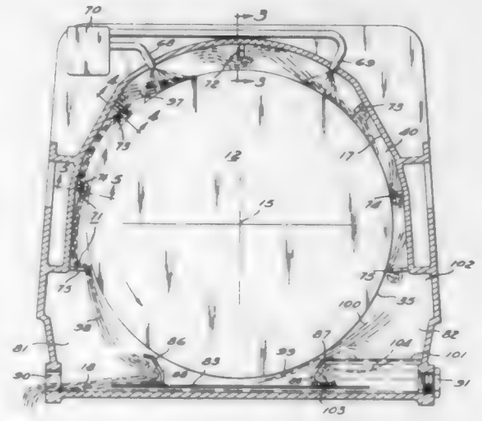
A stepping motor having a plurality of circular sections, each section including a stator and magnetic disk rotor

in axial alignment with each other and all elements having equally angularly spaced teeth. The stator and rotor of



each section are in full registry, upon the sequential energization of each section.

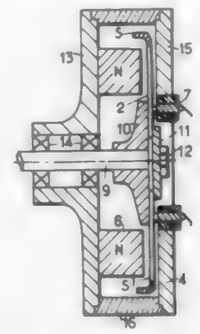
3,372,292
LIQUID-COOLED EDDY CURRENT DEVICE
Donald L. Lynch, Chagrin Falls, and Alexander K. Zweede, Euclid, Ohio, assignors to The Reliance Electric and Engineering Company, a corporation of Ohio
Filed Oct. 27, 1964, Ser. No. 406,790
16 Claims. (Cl. 310—105)



The disclosure shows an eddy current device, a clutch or brake, which is water-cooled by water spraying on the exterior passive surface of the eddy current drum. Centrifugal force of the rotating drum throws the water off and circumferential air flow caused by the rotating drum causes this water to travel circumferentially around the housing inner surface. Baffles are mounted on this housing inner surface to redirect the water several times onto the drum exterior surface to extract more heat from the drum to increase the power rating. A false bottom raised above the floor of the housing permits water to run underneath this false bottom to a drain in a lower corner of the housing.

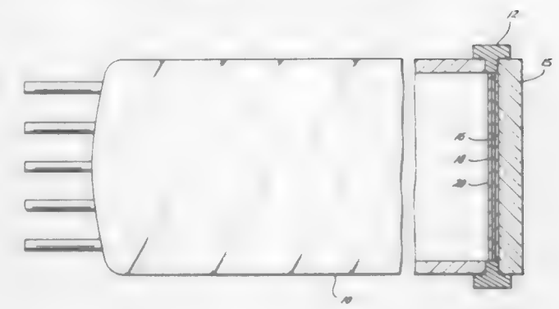
3,372,293
DISCOIDAL ELECTRIC ROTARY MACHINES
Jacques Henry-Baudot, Antony, France, assignor to Societe d'Electronique et d'Automatisme, Courbevoie, France
Filed July 27, 1964, Ser. No. 385,242
Claims priority, application France, Sept. 4, 1963, 946,579, Patent 1,375,231
9 Claims. (Cl. 310—268)

1. A low voltage high direct current dynamo-electric machine of the disc rotor type comprising in combination: a stator including an heteropolar field structure of permanent magnet poles and defining a magnetic airgap wherein the orientation of the magnetic field regularly reverses in successive zones; a disc shaped rotor rotatably mounted within said airgap, said rotor comprising a plurality of conductor blades arranged in at least one layer with their greater dimensions substantially oriented along the greater direction of the airgap, said blades being at least partly bare on one of their faces near at least one end



thereof; and brushes mounted in registration with the magnetic pole axes of said field structure and interconnected to D.C. transducing terminals, each one of said brushes electrically contacting and short-circuiting at least two of said conductor blades at ends and means for electrically connecting together other ends of said conductor blades to complete an electrical circuit only through those conductor blades which are in direct contact with said brushes.

3,372,294
CAMERA TUBE TARGET INCLUDING POROUS PHOTOCONDUCTIVE LAYER COMPRISING ANTIMONY TRISULFIDE, FREE ANTIMONY AND COPPER PHTHALOCYANINE
James K. Fisher, Garland, Tex., assignor to General Electrodynamics Corporation, Garland, Tex., a corporation of Texas
Continuation-in-part of application Ser. No. 452,640, May 3, 1965. This application July 29, 1966, Ser. No. 568,823
1 Claim. (Cl. 313—65)



A television camera tube having a photosensitive surface containing an inorganic photoconductor and a minor proportion of an organic photoconductor, such as copper phthalocyanine.

3,372,295
AIR PROPORTIONAL ALPHA DETECTOR
James R. Sparks, Albuquerque, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 3, 1966, Ser. No. 533,387
2 Claims. (Cl. 313—93)

An air proportional alpha detector having a removable screen sealed with an aluminized "Mylar" film removably

mounted on a metal coated plastic housing, and a removable detector unit positioned within the housing adjacent the screen and including a plurality of longitudinal

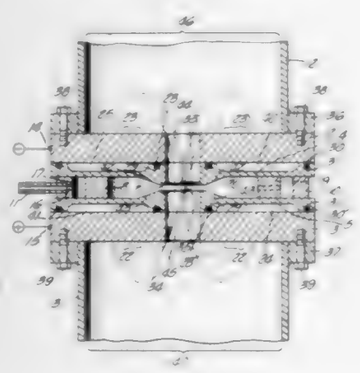
channels each having a wire independently suspended along the channel and an aluminized Mylar film seal adhesively bonded over the channels sealing the detector unit.

3,372,296

ARC PLASMA ELECTRODE PAIR HAVING A VENTURI-SHAPED CONFIGURATION

John Tom Naff, Costa Mesa, Calif., assignor to Automatic Fire Control Inc., South El Monte, Calif., a corporation of California

Filed Apr. 4, 1967, Ser. No. 628,355
5 Claims. (Cl. 313—231)



This invention relates to an arc reactor electrode configuration useful in generating an arc suitable for heating substances by passage through the arc plasma. A simple, replaceable parallel annular plate anode and cathode pair can be quickly replaced on wear.

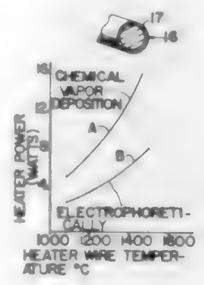
3,372,297

HIGH FREQUENCY ELECTRON DISCHARGE DEVICES AND THERMIONIC CATHODES HAVING IMPROVED (CVD) REFRACTORY INSULATION COATED HEATER WIRES

Cortland S. Pearsall, Los Altos, and Ray T. Wimber, San Diego, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Sept. 28, 1964, Ser. No. 399,461
17 Claims. (Cl. 313—337)

The heat transfer adherence, coating resistance, density and electrolytic degradation characteristics of a coated heater for use in a thermionic cathode are improved by utilizing a chemical vapor deposited (CVD) refractory insulation coating on a refractory metal heater wire. The terminology (CVD) is restricted to include only coatings which are formed by the deposition of a non-volatile compound on a selected substrate from a gas (vapor) or mixture of gases, said mixture containing all the chemical elements required to synthesize the desired compound in the form of one or more gaseous compounds differing from the following compound. The deposition may take place either by thermal decomposition of a gas or by chemical reaction of the gas mixture constituents at the substrate which has been raised to a suitable temperature.

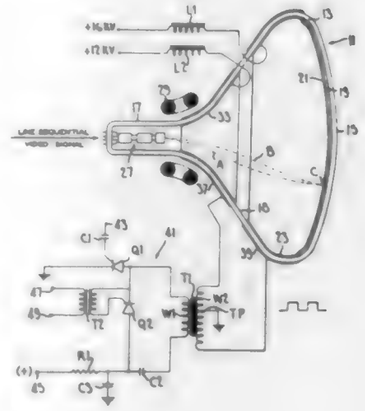


3,372,298

COLOR DISPLAY SYSTEM

Jerry D. Murryman, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed May 31, 1966, Ser. No. 553,771
9 Claims. (Cl. 315—14)



1. A color display system comprising:

a kinescope including,

an envelope of dielectric material, said envelope having a face portion, a neck portion and an intermediate portion connecting said neck portion to said face portion,

a phosphor screen on the inner surface of the face portion of said envelope, said phosphor screen including a plurality of phosphors which emit light of different colors when struck by electrons of different energies,

a first conductive band around the inner surface of the intermediate portion of said envelope adjacent said phosphor screen and electrically connected thereto for applying electron accelerating voltages to the screen,

a single electron gun in the neck portion of said envelope for emitting a beam of electrons toward said screen,

a second conductive band around the inner surface of the intermediate portion of said envelope adjacent said neck portion forming a generally annular electrode which is substantially concentric with said gun and axially displaced therefrom toward said screen,

a third conductive band substantially equidistantly spaced outwardly away from said first band and in substantial juxtaposition therewith, said first and third bands forming with said envelope a capacitor for coupling time-varying signals from said third band to said first band, and

a fourth conductive band substantially equidistantly spaced outwardly away from said second band and in substantial juxtaposition therewith, said second and fourth bands forming with said envelope a capacitor for coupling time-varying signals from said fourth band to said second band;

means for applying D.C. bias voltages to said first and second bands to accelerate electrons emitted from said gun toward said screen;

field generating means for deflecting said beam of electrons in a scanning raster; and

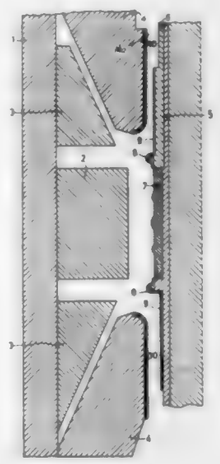
means for applying out-of-phase time-varying voltages to said third and fourth bands whereby electrons emitted from said gun are accelerated to at least two different energies for energizing said screen to produce multiple-color images having color image components which are in substantial registration.

3,372,299

RESONANT CAVITY MAGNETRON HAVING BUILT-IN MAGNETIC POLE SHOES WITH AN ELECTRICALLY CONDUCTIVE METAL COATING TO PREVENT FLASH-OVER TO THE CATHODE

Johannes Antonius van de Goor, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 16, 1964, Ser. No. 396,883
Claims priority, application Netherlands, Sept. 18, 1963, 298,079
3 Claims. (Cl. 315—39.71)



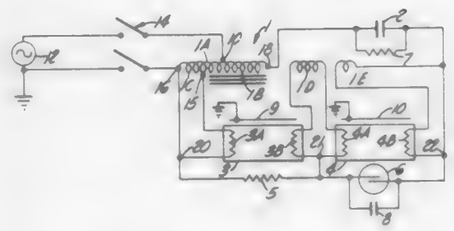
In a magnetron having built-in substantially conical perforated pole-shoes between which the ends of a cathode extend, at least the surface of the edge of the pole-shoes facing the cathode consists of refractory, electrically conductive metal such as molybdenum to prevent flash-over and reduce sputtering and evaporation of cathode material.

3,372,300

SEQUENTIAL STARTING CIRCUIT FOR A PAIR OF FLUORESCENT LAMPS

Shungo Furui, Yokohama, Japan, assignor of fifty percent to Grace Thunberg, Garden Grove, Calif.

Filed July 29, 1965, Ser. No. 475,682
7 Claims. (Cl. 315—96)



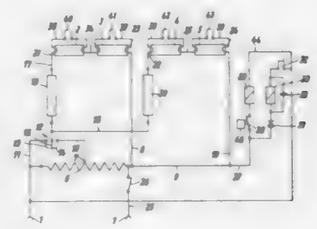
To light tubes are connected in series with a current supply and are lit in sequence during the starting operation. A relatively high resistance is permanently connected across one of the tubes and a glow switch starter is connected across the other of the tubes such that the requirement of a conventional ballast is obviated.

3,372,301

METHOD FOR IGNITING SEVERAL FLUORESCENT LAMPS AND CIRCUIT ARRANGEMENT FOR CARRYING OUT THIS METHOD

Henry Elfers, Hamburg, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany, a corporation of Germany

Filed Nov. 5, 1963, Ser. No. 321,613
Claims priority, application Germany, Nov. 15, 1962, L 43,456
10 Claims. (Cl. 315—106)



8. A circuit arrangement for operating a plurality of fluorescent lamps connected in a common circuit and each having a pair of heaters energizable for the passage of an electric current through said heaters preparatorily to the illumination of said lamps and sustaining a discharge through said lamps for illumination thereof, said circuit arrangement comprising:

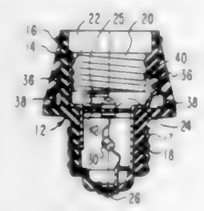
a high-voltage source capable of effecting discharge through said lamps upon the heating thereof and a low-voltage source of a level insufficient to ignite said lamps;

a two-position switch in circuit with said heaters and having a first position wherein said low-voltage source is connected across said heaters and a second position wherein said high-voltage source is connected across said heaters; and

a control network energized by said high-voltage source for initiating said discharge through said lamps, said network including an operating switch, and means operatively connecting said operating switch and said two-position switch for operating same after the lapse of a period of energization of said heaters in said first position of said two-position

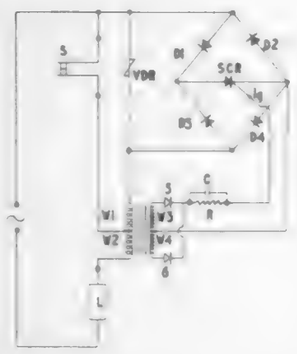
switch to shift same to said second position and apply high voltage to said heaters prior to the initiation of said discharge.

3,372,302
ADAPTOR MECHANISM FOR LIGHT CIRCUITS
Henry Fasola, Los Angeles, Calif., assignor to California Computer Products, Inc., Anaheim, Calif., a corporation of California
Filed Apr. 21, 1964, Ser. No. 361,325
7 Claims. (Cl. 315—272)



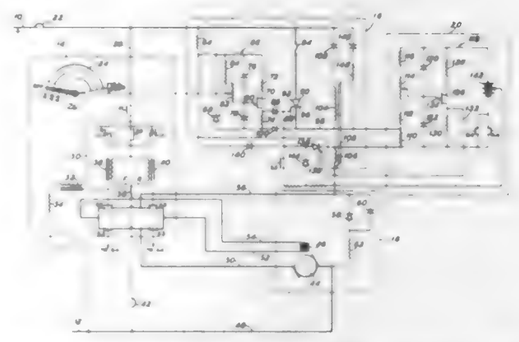
1. An adaptor mechanism for light circuits, comprising: a body structure having a base portion including a threaded member for engagement in mating relation with a conventional on-off type light socket and having a pair of electrical terminals arranged to make contact with corresponding terminals of the socket; a body structure socket portion adjacent to said base portion, including a threaded member for engagement in mating relation with a base of a single-filament light bulb having two terminals at the bulb base, said socket portion having a pair of terminals for contacting the light bulb base terminals; a diode rectifier connected to one of said terminals of said socket portion for blocking part of the applied alternating current energizing the light bulb; and said body structure including switch means for alternately opening and closing a circuit path bypassing the diode rectifier for establishing dual levels of illumination in the associated light bulb.

3,372,303
A.C. SWITCH CONTACTS
Leonard George Walter Knott, Hounslow, Middlesex, England, assignor to F. Devetta (Electronics) Limited, Hounslow, Middlesex, England, a British company
Filed Feb. 17, 1966, Ser. No. 528,304
Claims priority, application Great Britain, Sept. 28, 1965, 41,276/65
5 Claims. (Cl. 317—11)



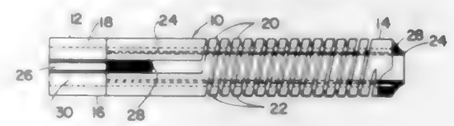
1. A device for connection across a pair of A.C. switch contacts comprising at least one silicon controlled rectifier connectable in parallel with the contacts for carrying current in either direction, split transformer means part in series with the contacts and part in series with the S.C.R. and means for deriving a control signal for the S.C.R. from the transformer means whereby the current which would otherwise produce arcing or sparking is passed through the S.C.R. and the S.C.R. is de-triggered thereby so that it switches off when the voltage across it has zero value.

3,372,304
OVERLOAD PROTECTION FOR SCR MOTOR CONTROL CIRCUIT
John J. Kuipers, Palos Heights, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 6, 1964, Ser. No. 409,431
12 Claims. (Cl. 317—33)



This invention relates to a motor control circuit in which the motor current is controlled by the combination of a silicon controlled rectifier and a saturable reactor. In particular, the invention relates to an overload protection circuit for the SCR. The invention also includes a filter to damp out undesirable transients.

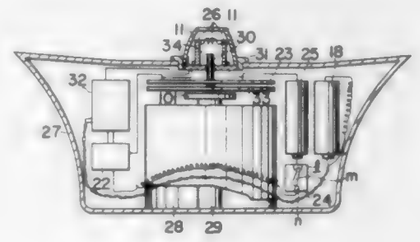
3,372,305
SILICON CARBIDE IGNITER
Anthony R. Mikulec, Snyder, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Apr. 15, 1966, Ser. No. 542,939
7 Claims. (Cl. 317—98)



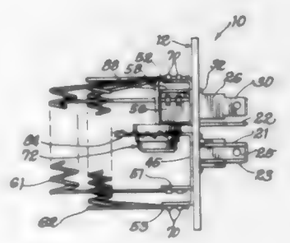
1. An igniter element comprising: an elongated hollow body composed of a non-metallic resistance material having a first portion comprising a pair of laterally spaced elongated members having outer surfaces and a second portion comprising a pair of spaced helical bands connected to and extending longitudinally from said elongated members, respectively, and terminating in an end portion; an elongated support member disposed within said body and secured adjacent the opposite ends thereof to said body with adhesive material; a coating of electrical conducting material deposited on said outer surfaces of said elongated members adjacent the ends thereof remote from said helical bands; and a polarizing key secured with said adhesive material between said elongated members adjacent the ends thereof remote from said helical bands.

3,372,306
PROXIMITY CONTROLLED AUTOMATIC CIGARETTE LIGHTER AND THE LIKE
Hiroyasu Koizumi, Yokohama-shi, Japan, assignor to Kobayashi Shinijiro, Tokyo, Japan
Filed Sept. 14, 1965, Ser. No. 487,147
Claims priority, application Japan, Sept. 15, 1964, 39/52,564
6 Claims. (Cl. 317—85)

In an electrically ignited gas fueled cigarette lighter, opening and closing of the fuel valve which connects the liquid reservoir with the discharge nozzle of the lighter is effected automatically upon placing a cigarette or the like at a predetermined position close to the outlet opening of said nozzle, by means of an electric proximity control circuit including sensing means influenced by the cigarette, to effect a current change in said circuit suitable for the opening of said valve via a solenoid or the like control device. According to one embodiment, the control circuit is in the form of a self-running high-frequency oscillator subjected to the varying capacity between said sensing means and the metal mass of the device, to start and stop the oscillation of the circuit. Alternatively, the proximity control is by means of a light beam being intercepted by the cigarette and impinged upon a photoelectric cell forming part of the control circuit. Simultaneously with the opening of the fuel valve, a heater also controlled by said circuit and disposed in the vicinity of the capacitative or optical sensing means may be energized to ignite the fuel jet, whereby to completely dispense with any manual operations in the use of the lighter. Upon removal of the lighted cigarette, the circuit returns to its normal or rest condition ready for a renewed operation.

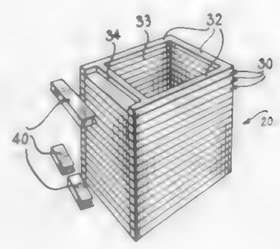


3,372,307
RESISTOR AND RECTIFIER UNIT
Michael F. Bedocs, Wilmette, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois
Filed Dec. 23, 1965, Ser. No. 516,009
10 Claims. (Cl. 317—100)



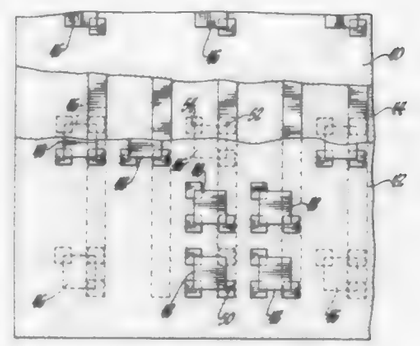
4. In an electrical device,
the combination comprising an insulating support,
a plurality of terminal members mounted on said support,
one of said terminal members having a flange thereon projecting away from said support,
said flange having a substantially circular opening therein,
a rectifier having a casing securely mounted in said opening,
said flange having a plurality of fins thereon radiating from said flange around said opening for dissipating the heat generated in said rectifier during use.

3,372,308
INTERCONNECTING FRAME ASSEMBLY WITH IMPROVED CONNECTOR STRUCTURE
Rocco J. Noschese, Rowayton, Conn., John C. Sarazen, Mansfield, Mass., and Nathaniel C. Williams, New Brunswick, N.J., assignors to Burndy Corporation, a corporation of New York
Filed Aug. 26, 1965, Ser. No. 482,806
8 Claims. (Cl. 317—101)



The electronic circuit assemblies are formed of a plurality of modular units, and a unique assembly of interconnecting frame elements which individually support separate circuit arrays.

3,372,309
MULTILAYER ELECTRONIC MODULE
Ralph W. Stockdale, Greendale, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 23, 1965, Ser. No. 516,012
2 Claims. (Cl. 317—101)

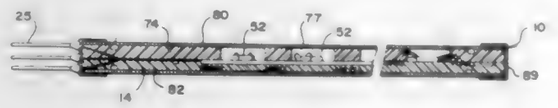


A printed circuit module contains a plurality of stacked interconnected substrates, each substrate bearing a plurality of identical components arranged in a preordered pattern. Some substrates will have only patterns of conductors thereon. Circuit interconnections are achieved by forming conductors in holes drilled through a stack of substrates and selectively making contact with certain components and conductors.

3,372,310
UNIVERSAL MODULAR PACKAGES FOR INTEGRATED CIRCUITS
Misha Kantor, Orlando, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida
Filed Apr. 30, 1965, Ser. No. 452,184
5 Claims. (Cl. 317—101)

1. An integrated circuit package, comprising a plurality of microelectronic circuit components, an insulating substrate having a plurality of groups of parallel conductors extending longitudinally along one surface thereof and transversely along another surface thereof op-

posite said one surface, said groups of conductors on each surface spaced from each other by a distance sufficient to accommodate the bonding of said microelectronic circuit components to insulative portions of said surfaces, said microelectronic circuit components bonded to said substrate in the spaces between said groups of conductors, a predetermined pattern of conductors extending between said surfaces and interconnecting various longitudinal and transverse conductors at crossover points thereof to form

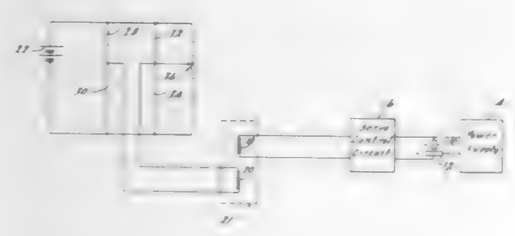


an intraconnected conductor matrix, means electrically connecting said microelectronic circuit components to said matrix to form the desired integrated circuit, a pair of cover plates insulatively spaced from said opposite surfaces, means hermetically sealing said substrate, said components, said matrix, and said cover plates in a modular package, and means at least partially encompassing the edges of said package for absorbing impact loads and vibrations to which said package is subjected.

3,372,311
BALANCING CIRCUIT FOR ELECTRICALLY CONTROLLED HYDRAULIC SERVO SYSTEMS

Walter Lobur, Clawson, Mich., assignor to Elox Corporation, Troy, Mich., a corporation of Michigan

Filed Sept. 16, 1965, Ser. No. 487,843
10 Claims. (Cl. 317—123)



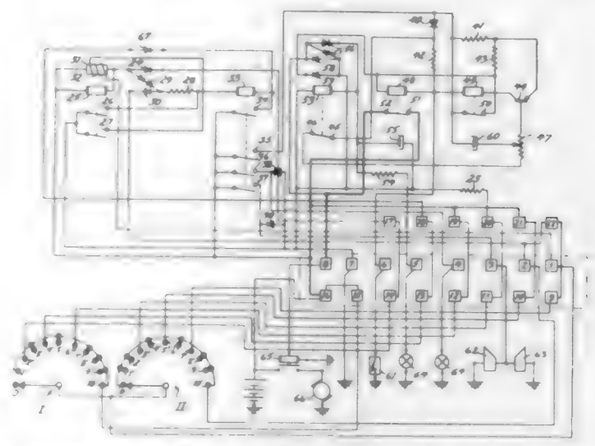
1. In an electrically operated hydraulic system having a servo valve responsive to an electrical control signal provided thereto, an adjustable balancing system for said servo valve comprising, a bias coil operatively connected to control said servo valve, a DC source, a first pair of substantially equal value, relatively low impedance resistors connected across said source, a second pair of substantially equal value, relatively low impedance resistors connected across said source, a potentiometer including a movable contact and having a linear resistance of relatively high impedance connected across said source, said bias coil having one terminal connected to the junction of said first pair of resistors and the other terminal connected to the junction of said second pair of resistors and to said movable contact of said potentiometer for manipulative adjustment.

3,372,312
ELECTRICAL SYSTEM

Artur Sirringhaus, Dortmunder Landstrasse 61, Herdecke-Ende, Germany

Filed Oct. 15, 1964, Ser. No. 404,037
Claims priority, application Germany, July 31, 1964, S 92,392
11 Claims. (Cl. 317—134)

A system for simultaneously and automatically unlocking the doors of a vehicle, turning on the ignition of the vehicle engine, and actuating the self-starter mechanism for such engine, with such system including a pair

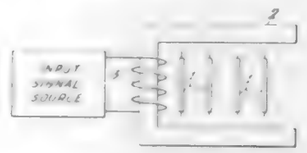


of rotary switches provided with different settings adapted to accommodate currents of opposite polarities.

3,372,313
SEQUENTIAL MULTIPLE CONTACT SINGLE CORE SWITCH APPARATUS UTILIZING GLASS ENCLOSED CONTACTS

Francis J. Beck, Philadelphia, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 2, 1964, Ser. No. 415,254
8 Claims. (Cl. 317—137)

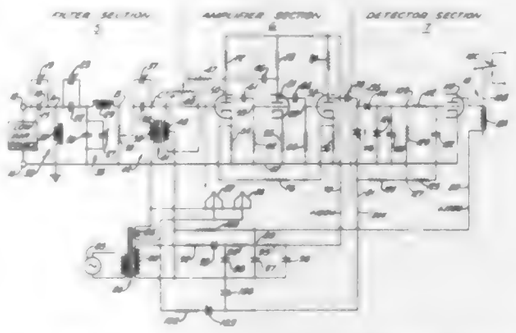


A sequential switching apparatus having glass-enclosed switches positioned between the legs of a U-shaped core piece. A coil is wound upon the core piece for providing an electromagnetic flux within the core. Each glass-enclosed switch is arranged at a different respective distance from the coil to provide the sequential switching as an electrical signal within the coil varies.

3,372,314
MEANS AND TECHNIQUES USEFUL IN TONE RECEIVERS

Jud C. Chastain, West Covina, Calif., assignor to American Meter Company, Inc., Fullerton, Calif., a corporation of Delaware

Filed Mar. 31, 1965, Ser. No. 444,352
6 Claims. (Cl. 317—147)



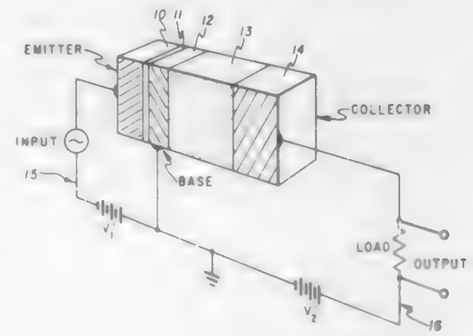
A tone receiver for a telemeter system has a signal applied thereto. When the signal is applied a relay is energized and when the signal is keyed off, there is no signal at the output terminal and the relay is deenergized.

The relay is operated at a fast rate in that the pull-in current is that current required to cause its armature to be moved to its attracted position; and the drop-out current is just that amount of current at which the armature is maintained in its attracted position. The band width of the amplifier circuit is established by three tuned filter sections with the band width being adjusted relative to the keying frequency.

3,372,315
ELECTRON TUNNEL EMISSION DEVICE EXHIBITING APPROXIMATELY 0.9 CURRENT TRANSFER RATIO

Thomas E. Hartman, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Continuation of application Ser. No. 477,274, Aug. 4, 1965. This application Feb. 27, 1967, Ser. No. 619,074
2 Claims. (Cl. 317—235)

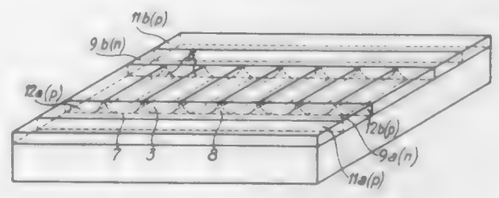


1. A solid-state electron device comprising first, and second conductive metal layers separated by a first insulating layer, said second conductive metal layer being aluminum and having a thickness of about 70 Angstrom units, said first insulating layer being aluminum oxide and having a thickness from about 25 to about 50 Angstrom units, a layer of mica adjacent said second conductive metal layer, said layer of muscovite having a thickness from about 100 to about 10,000 Angstrom units, a third conductive metal layer adjacent said layer of muscovite and opposite said second conductive metal layer, and bias means on said first and second metal layers for producing a current transfer of approximately 0.9.

3,372,316
INTEGRAL GRID AND MULTICHANNEL FIELD EFFECT DEVICES

Stanislas Teszner, 49 Rue de la Tour, Paris, France

Filed July 24, 1964, Ser. No. 385,023
Claims priority, application France, July 26, 1963, 942,896
3 Claims. (Cl. 317—235)

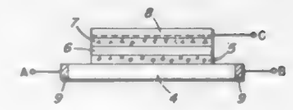


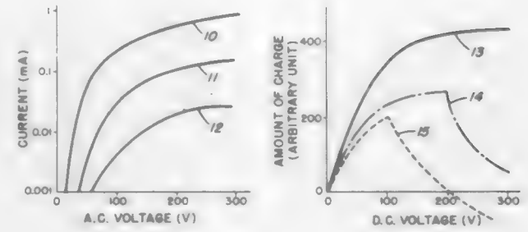
1. A field-effect multichannel semiconductor device comprising: a semiconductor wafer of a given type of conductivity; a surface layer of the opposite type of conductivity on one of the faces of said wafer and forming a plane junction therewith; parallel spaced-apart strips of said opposite type conductivity in said surface layer forming, respectively, a source and a drain interconnected by a plurality of parallel channels of said opposite type of conductivity lying between said strips; and elongated inclusions of said given conductivity type embedding said channels and forming a gate junction therewith, the channels having a cross section in the shape of a triangle with a rectilinear base along said plane junction and with two concave curvilinear sides along said inclusions, the altitude of the triangle being substantially equal to one-half of the length of said base; said inclusions being adjacent and integral with each other at the free surface of said layer and extending therethrough to reach onto said plane junction; with said curvilinear sides of said elongated channels forming quarter-cylindrical borders.

3,372,317
PHOTOELECTRIC DEVICE

Akio Yamashita, Ikeda-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Original application Mar. 10, 1964, Ser. No. 350,833. Divided and this application May 11, 1966, Ser. No. 566,698
5 Claims. (Cl. 317—235)



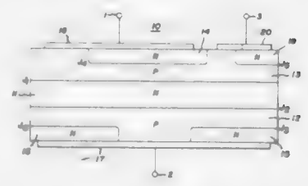


A semiconductor device for converting and/or controlling an electrical input, comprising successive layers of a first semiconductor, a mixture of a first electrical insulator and a second semiconductor, a second electrical insulator, a photosensitive member, and a transparent electrode.

3,372,318
SEMICONDUCTOR SWITCHES

Edward G. Tefft, Auburn, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 22, 1965, Ser. No. 427,393
4 Claims. (Cl. 317—235)

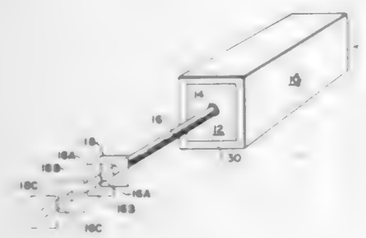


A semiconductor bilateral gate fired switch is provided which utilizes both junction and remote gate firing modes and a confined localized low resistance current path is provided between the gate electrode and the nearest device main emitter junction in order to assure that the current density required for switching the device is obtained at a low value of gate current and to achieve gate firing with a low gate voltage.

3,372,319
SENSING ELEMENT FOR PROXIMITY DETECTORS AND THE LIKE

William E. Rhodes, Columbus, Ohio, assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed May 23, 1966, Ser. No. 552,068
6 Claims. (Cl. 317—256)

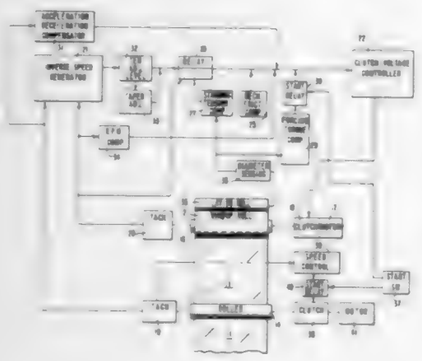


Capacitance type sensing elements are provided for extending the range of detection of proximity detecting devices, which sensing elements include a dielectric base plate in an exterior housing wall of the sensing device and conductive coupling means therein adapted to receive one end of an extended or elongated conductive support means maintaining a conductive plate or plates at selected distances from the sensing device.

3,372,320
WEB WINDING APPARATUS

Mardell L. Boyum and Peter F. Grinnell, Clinton, Iowa, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 12, 1965, Ser. No. 455,264
15 Claims. (Cl. 318—7)



1. Winding apparatus comprising

a rotatable member adapted to be driven by a drive motor;

an adjustable magnetic clutch operatively connected between said rotatable member and the drive motor;

advancing means adapted to advance a web of material to be wound into roll form on the rotatable member;

means adapted to transmit motive power to said magnetic clutch responsive to a control signal from a tension control means adapted to generate a control signal proportional to the ratio of the rotational speed of the advancing means and the rotatable member and bias signals selected from any one of:

an acceleration-deceleration control means adapted to generate a bias signal proportional to the speed of said advancing means;

a first adjustable friction control means adapted to generate a fixed bias signal;

a second adjustable friction control means adapted to generate a bias signal proportional to the speed of the rotatable member;

an adjustable forcing torque control means adapted to generate a bias signal proportional to the size of the roll of wound web material;

an adjustable standing tension control means adapted to generate a bias signal proportional to the size of the roll of wound web material;

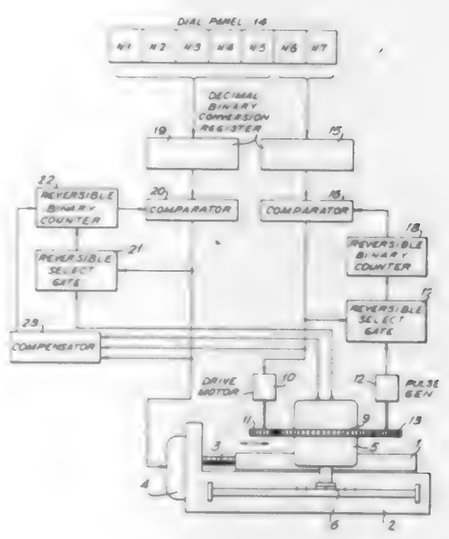
and an adjustable tension taper control means adapted to generate a bias signal of fixed percentage of the tension control signal;

for rotating said rotatable member and maintaining a uniform tension pattern between the core and the outer periphery of the wound web material.

3,372,321
DIGITAL SYSTEM FOR CONTROLLING THE POSITION ALONG A GIVEN PATH OF A MOVABLE STRUCTURE

Seiuemon Inaba and Kanryo Shimizu, Kawasaki, Tokiji Shimajiri, Mitaka-shi, and Yoshibiro Hashimoto, Nakaku, Yokohama, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Continuation-in-part of application Ser. No. 618,233, Feb. 23, 1967. This application June 22, 1967, Ser. No. 648,054
Claims priority, application Japan, Jan. 11, 1963, 38/1,160
7 Claims. (Cl. 318—18)

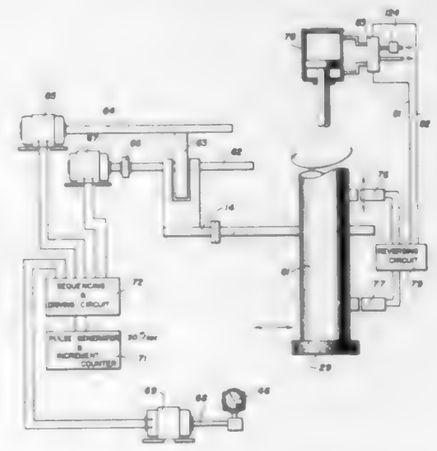


A drive is coupled to a movable structure for displacing it. A detector mounted on a fixed structure and on the movable structure, detects positional variation of the movable structure along the path thereof. The detector comprises a scale affixed to one of said structures and comprising a plurality of spaced indications. An optical detecting element is movably mounted on the other of the structures in operative proximity with the scale. The detector includes zero range device for providing a zero range at a given interval for each indication of the scale. A datum setter has a first portion selectively adjustable for setting the major amount of a desired positional datum value and a second portion selectively adjustable for setting the residual amount of the datum value. A presetting control is coupled to the optical detecting element for moving it relative to the structure in accordance with the residual amount. The presetting control comprises a first register having a content equal to that of the second portion of the datum setter. A servomotor is coupled to the optical detecting element for moving it along the given path. A pulse generator is coupled to the optical detecting element for providing pulses corresponding in number to the displacement thereof. A first counter has an input connected to the pulse generator for counting pulses generated thereby. A first comparator has an output connected to the servomotor, an input connected to the output of the first counter and an input connected to the output of the first register for comparing the contents of the first register and the first counter and for energizing the servomotor until coincidence of the contents of the first register and first counter. A drive control is coupled to the drive and comprises a second register having a content equal to that of the first portion of the datum setter. A second counter has an input connected to the detector for counting pulses generated by the detector. A second comparator has an output connected to the drive, an input connected to the output of the second counter and an input connected to the output of the second register for comparing the contents of the second register and the second counter for energizing the drive until coincidence of the contents of the second register and second counter. A zero compensator has an output connected to an input of the second counter, an input connected to the output of the first comparator, an input connected to the output of the second comparator and an input connected to the detector for selectively varying the count of the second counter in accordance with indications outside the zero range.

3,372,322
STEPPING MOTOR FEED FOR A GRINDER INCLUDING A HIGH SPEED SLEWING MOTOR

George H. Lockwood, Worcester, Glenn D. Johnson, Sterling, Edward G. Robillard, Leicester, and Henry E. Hirvi, Paxton, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware

Continuation of application Ser. No. 316,756, Oct. 16, 1963. This application July 11, 1967, Ser. No. 652,625
3 Claims. (Cl. 318—39)

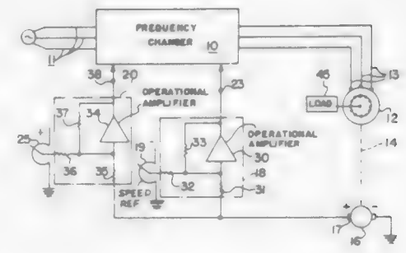


The present invention relates to a grinding machine, more particularly, to a grinding machine having a feedscrew for moving the wheel head to bring about a machining operation, the feedscrew being operated by a stepping motor which in turn receives pulses from a generator; a means is provided for regulating the transmission of the pulses to the motor and restricting the said transmission to the time when the spindle is at the end of a longitudinal stroke. In addition, means is provided for transmitting selectively pulses of substantially different frequency.

3,372,323
INDUCTION MOTOR SLIP FREQUENCY CONTROL SYSTEM

John C. Guyeska, Newbury, Ohio, assignor to Reliance Electric and Engineering Company, a corporation of Ohio

Filed Mar. 31, 1965, Ser. No. 444,193
19 Claims. (Cl. 318—230)

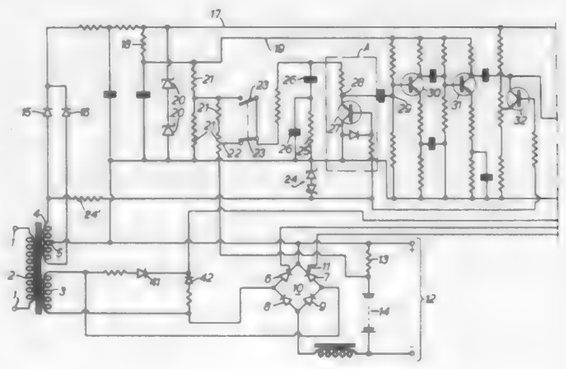


The invention relates to frequency changers supplying an alternating voltage to an induction motor at a variable frequency to control the speed of the motor. The slip of the motor is maintained at a fixed or predetermined maximum value regardless of speed change or load change in the motor. This fixed or determined slip is established by a slip reference voltage with the magnitude of the voltage determining the amount of the slip of the motor. A tachometer generator supplies a signal proportional to motor speed with this tachometer generator algebraically combined with a speed reference voltage and the difference being an error signal to control the voltage output of the frequency changer. Additionally the tachometer voltage is combined with a slip reference voltage and the algebraic sum is used to control the frequency of the output of the frequency changer.

3,372,324
D.C. POWER SUPPLY ARRANGEMENTS

John Alan Scarlett, Maldon, England, assignor to The Marconi Company Limited, London, England, a British company

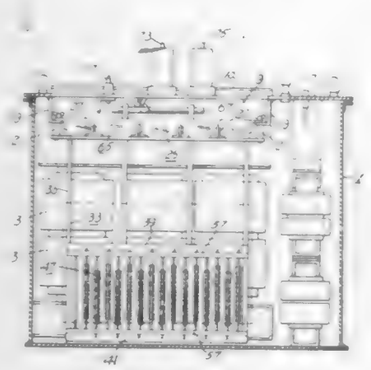
Filed Oct. 18, 1965, Ser. No. 497,241
Claims priority, application Great Britain, Aug. 3, 1965, 43,206/64
9 Claims. (Cl. 320—39)



A D.C. power supply arrangement employing a floating battery, the power supply arrangement is adapted for connection to an A.C. source, a rectifier circuit is employed for supplying charging current to the battery through a resistor in series with the battery. The charging current supplied to the battery is monitored and the time duration per A.C. cycle during which charging current is

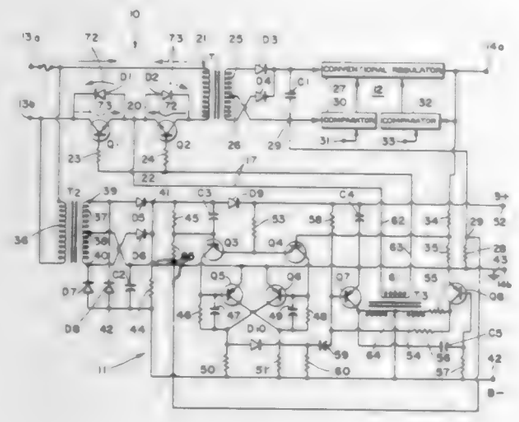
supplied to the battery is varied in accordance with an increase or a decrease in charging current level above or below a predetermined desired level thereof.

3,372,325
READILY SERVICEABLE POWER SUPPLY ASSEMBLY
Wallace W. Wahlgren, Oakland, Calif., assignor, by mesne assignments, to The Rucker Company, Oakland, Calif.
Filed Nov. 13, 1964, Ser. No. 410,983
4 Claims. (Cl. 321—8)



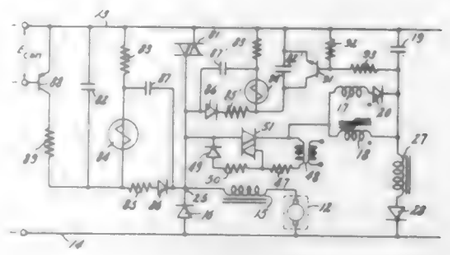
A readily serviceable power supply in which a rectifier rack is insertable through an opening in the transformer cover, to automatically effect circuit connections within the transformer casing, through complementary terminal strips.

3,372,326
HIGH EFFICIENCY LOW IRON AC-TO-REGULATED DC CONVERTER
Boris Stefanov, 5628 Harold Way, Los Angeles, Calif. 90028
Filed Apr. 30, 1965, Ser. No. 452,083
8 Claims. (Cl. 321—24)



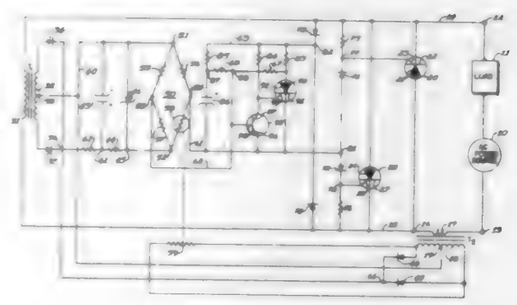
This disclosure relates to a power supply in which the primary of the input transformer is in series with a switch that is closed only for a very short time during the rising portions of the input AC sine wave half-cycles. The switch closing pulses are positioned such that the energy storage capacitor incorporated in the circuit is charged to a voltage determined by the control circuit providing the pulses. As a result, the input transformer size (iron content) can be reduced by a factor of from 10 to 20, and the regulator heat is minimized since the storage capacitor is never charged to a voltage higher than necessary.

3,372,327
TIME RATIO CONTROL AND INVERTER POWER CIRCUITS
Raymond E. Morgan, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Original application Dec. 26, 1963, Ser. No. 334,690. Divided and this application May 12, 1967, Ser. No. 639,594
8 Claims. (Cl. 321—43)



A family of time ratio control D-C power circuits comprises a load current carrying SCR, triac, diac, or dv./dt. fired SCR which is turned on and commutated off at desired intervals to supply power to the load, which is connected in series with a filter inductance and in parallel with a coasting diode for inductive loads. The commutation circuit comprises a commutating capacitor in series with a parallel-connected linear inductance and saturable reactor and with an auxiliary SCR-diode combination or triac. The capacitor-linear inductance are tuned to series resonance at a frequency substantially lower than the commutating frequency, while the capacitor-saturable reactor are tuned to series resonance at the commutating frequency. For power generating loads, a coasting-feedback triac, diac, or dv./dt. fired SCR is connected in parallel with the load and a bidirectional load current carrying device is used to return power to the supply and thereby provided a second mode of operation for the circuit. Inverters employ two cooperating pairs of circuits.

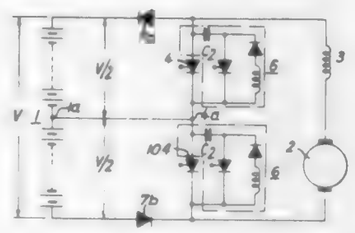
3,372,328
SCR TEMPERATURE CONTROL CIRCUIT
Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 14, 1964, Ser. No. 413,431
8 Claims. (Cl. 323—22)



A solid state thermostat having only two input wires in which both a voltage transformer and a current transformer are used to sequentially provide power to the thermostat. The power contacts of the thermostat comprise a bidirectional solid state controlled rectifier means. A primary winding of a current transformer is serially connected with the power contacts across the two wire AC input terminals. The AC source and load are connected to these terminals. A voltage transformer primary winding is connected across the power contacts. The voltage transformer or the current transformer provides power, de-

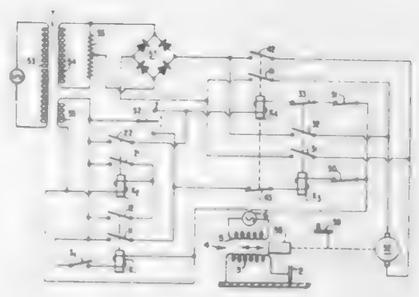
pending on whether the contacts are open or closed, to a temperature-responsive bridge circuit which provides a signal to close the contacts.

3,372,329
VOLTAGE CONTROL SYSTEM
Karl Steimel, Konigstein-Johanniswald, Taunus, and Klemens Heumann, Berlin-Reinickendorf, Germany, assignors to Licentia Patent-Verwaltungs-GmbH, Frankfurt am Main, Germany
Filed Sept. 24, 1963, Ser. No. 311,162
Claims priority, application Germany, Sept. 27, 1962, L 43,082
17 Claims. (Cl. 323—22)



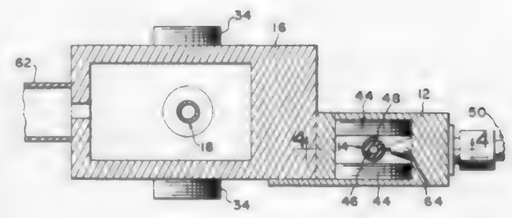
1. A circuit arrangement comprising, in combination:
(a) a first component incorporating a direct current source of electric energy;
(b) a second component connected across said first component incorporating a load;
(c) tap means on one of said components and dividing the same into at least two portions;
(d) a series circuit connected across said one of said components, said series circuit including at least two controllable semiconductor elements connected in series by at least one connector; and
(e) circuit means connecting said tap means to said connector.

3,372,330
ARC WELDING DECAY HEAT CONTROL SYSTEM WITH MOVABLE CASE TRANSFORMER
Robert A. Piscitello Uncasville, Arthur E. Petit, Hadlyme, and Bernard V. Wolski, Waterford, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1964, Ser. No. 337,652
9 Claims. (Cl. 323—51)



8. A decay heat control system for electric arc welding machines of the motor driven movable core type comprising a core drive motor, first and second switching means, either of said switching means controlling both the decay cycle and selective adjustment of said core, said switching means when actuated to a first position causing said core to be driven by said motor from an initial setting to a zero current output setting, said switching means, upon release from the first position, causing said core to be driven by said motor towards the initial setting a memory means for terminating the drive motor operation when the core reaches said initial setting, and said switching means allowing selective adjustment of the core position when actuated to a second position.

3,372,331
GYROMAGNETIC SPECTROMETER HAVING A TAPERED DIELECTRIC TRANSITION BETWEEN A COAXIAL LINE AND A HELIX STRUCTURE
John D. Larson, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Jan. 25, 1965, Ser. No. 427,869
7 Claims. (Cl. 324—.5)

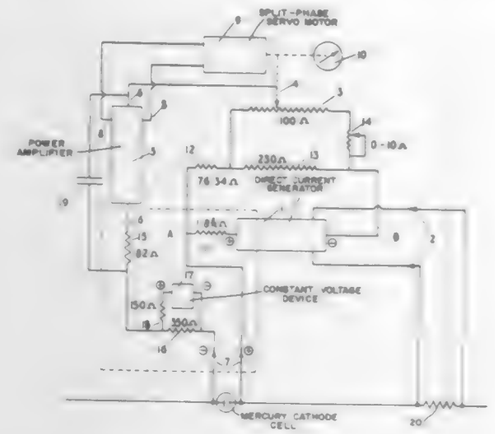


A gyromagnetic resonance spectrometer is disclosed for observing electron paramagnetic resonance of a sample under analysis. The spectrometer includes a probe structure having separate unknown sample and reference sample enclosures immersed in a common unidirectional polarizing magnetic field. Microwave energy is applied separately to both of the samples within their respective enclosures to excite resonance of both samples. Microwave energy is applied to the reference sample enclosure by means of a coaxial line coupled to a helix structure within the reference sample enclosure. The helix structure surrounds the reference sample and a tapered dielectric bead impedance matching transition is provided between the coaxial line and the helix structure. A second coaxial line is connected to the helix structure for observing resonance of the reference sample. A similar tapered dielectric bead impedance matching transition is provided between the output coaxial line and the helix structure. Various tapers are taught for the dielectric bead transition in order to obtain reflectionless impedance matches to the helix structure.

3,372,332
METHOD AND APPARATUS FOR ELECTRICAL RESISTANCE MEASUREMENT
Peter Ralph Michell and Frederick George Packham, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed July 19, 1965, Ser. No. 472,908
Claims priority, application Great Britain, Aug. 12, 1964, 32,850/64
11 Claims. (Cl. 324—30)

5. An apparatus suitable for measuring the electrical resistance of a circuit element which is carrying a direct current, which comprises a voltage-operated direct current generator, a potentiometer resistor having an adjustable tapping, a voltage amplifier, a servo-mechanism and an indicator scale, said voltage-operated current generator being connected for receiving an externally applied first input voltage and for feeding the whole or part of a current output through the said potentiometer resistor, said adjustable tapping on the potentiometer resistor being connected for applying to the input terminals of the said voltage amplifier in series opposition to a second externally applied input voltage a fraction of the voltage developed across the potentiometer resistor, said servo-mechanism being mechanically connected to the said po-

tentiometer tapping and to the said indicator scale and being electrically linked with the output terminals of the said voltage amplifier in such a sense that when there is an output from the voltage amplifier the servo-mechanism



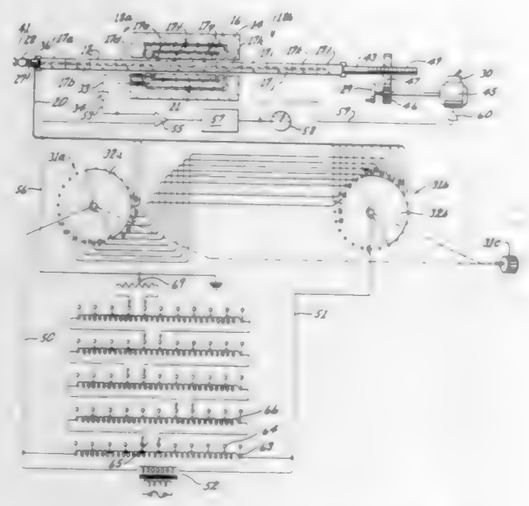
moves the tapping on the potentiometer resistor towards a position giving zero output from the amplifier and produces on the indicator scale a reading corresponding to the position of the said tapping.

3,372,333
DIFFERENTIAL CAPACITOR TRANSDUCER APPARATUS HAVING COARSE AND FINE ADJUSTMENTS AND MEANS FOR CHANGING SCALE SPAN

Robert E. Esch, Kettering, Ohio, assignor to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware

Continuation-in-part of application Ser. No. 250,536, Jan. 10, 1963. This application Sept. 28, 1964, Ser. No. 399,548

1 Claim. (Cl. 324—98)



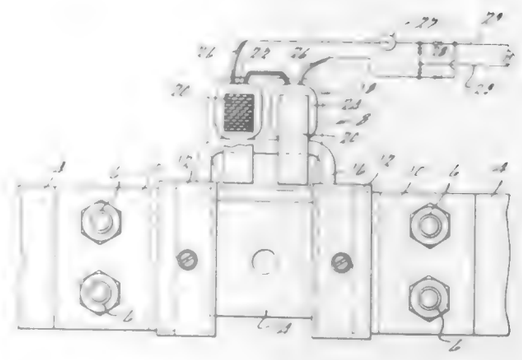
A position responsive measuring device having a differential capacitor transducer comprising a plurality of capacitive elements, means for shifting an electrical dividing line along the elements, and a pickoff capacitive membet. Indicating apparatus provide indications of the displacement of the pickoff member from the electrical dividing line. A plurality of operational mode control systems and mode selection devices are operated in conjunction with the transducer.

3,372,334
CALIBRATED BYPASS CONDUCTOR CURRENT MEASURING SYSTEM

Charles E. Fenoglio, Detroit, and Michael A. Koltuniak, Warren, Mich., assignors to The Udylite Corporation, Warren, Mich., a corporation of Michigan

Filed Mar. 25, 1964, Ser. No. 354,574

2 Claims. (Cl. 324—126)



A system for measuring the amount of current flow in a bus conductor which includes a shunt conductor connected in series with the bus conductor and a calibrated bypass conductor connected in shunt relation with the shunt conductor so that a predetermined portion of the main current flows between the shunt conductor and the bypass conductor. The system further includes a transductor for inductively sensing the current flow in the bypass conductor to provide an output signal, the amplitude of which varies in accordance with the amount of current flowing in the bypass conductor.

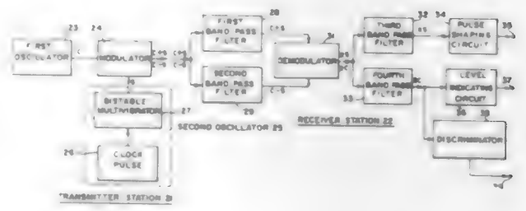
3,372,335
TWO CHANNEL, FREQUENCY DRIFT CORRECTING, REMOTE-CONTROLLED SUPERVISORY SYSTEM

Yuji Takada, Kawasaki-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Filed Feb. 23, 1965, Ser. No. 434,574

Claims priority, application Japan, Feb. 24, 1964, 39/10,038

6 Claims. (Cl. 325—49)



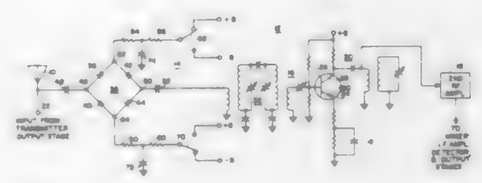
A transmitter station produces a first frequency and a second frequency and adds the first and second frequencies to produce a first supervisory signal comprising the sum component of the first and second frequencies. The transmitter station derives the difference between the first and second frequencies to produce a second supervisory signal comprising the difference component of the first and second frequencies. A receiver station receives the first and second supervisory signals transmitted from the transmitter station and derives the difference between the first and second supervisory signals to produce a first control signal comprising the difference of the first and second supervisory signals. The receiver station adds the first and second supervisory signals to produce a second control signal comprising the sum of the first and second supervisory signals. The first control signal is equal to twice the second frequency and the second control signal is equal to twice the first frequency.

3,372,336
RECEIVER INCLUDING INPUT OVERLOAD PROTECTION CIRCUIT

Raymond E. Bachman and Gabriel J. Luhowy, Rochester, N.Y., assignors to General Dynamics Corporation, a corporation of Delaware

Filed Dec. 16, 1964, Ser. No. 418,671

7 Claims. (Cl. 325—376)



1. A radio receiver input circuit for coupling the receiver to a source of radio signals, said input circuit comprising

(a) an amplifier stage including a current sensitive component,

(b) circuit means including a bridge circuit for coupling said component to said radio signal source,

(c) said bridge circuit including an individual diode in each arm thereof,

(d) means for biasing said diodes in their forward direction including a plurality of resistors respectively connected to said source through said bridge by way of different ones of said arms of said bridge, said different ones of said arms including different ones of said diodes which are polarized in opposite senses, and

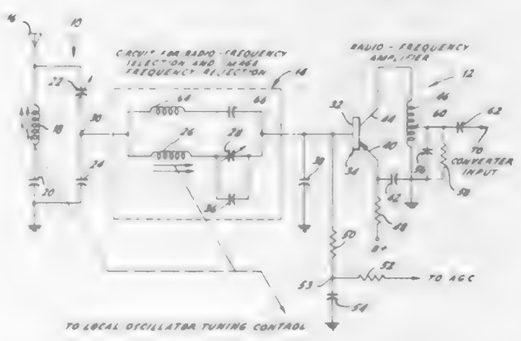
(e) capacitor means connected to said different ones of said diodes for charging whenever the voltage of said source exceeds said biasing voltage.

3,372,337
IMAGE FREQUENCY ATTENUATION CIRCUIT

John F. Beres, Southampton, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware

Filed Apr. 27, 1964, Ser. No. 362,781

19 Claims. (Cl. 325—388)


CIRCUIT FOR RADIO FREQUENCY SELECTION AND IMAGE FREQUENCY REJECTION
RADIO - FREQUENCY AMPLIFIER
TO CONVERTER INPUT
TO AGC
TO LOCAL OSCILLATOR TUNING CONTROL

An image frequency attenuation circuit comprising a tuning branch series-resonant at the frequency of a desired signal and a reactive branch shunted across the tuning branch. The tuning branch and the reactive branch form, in combination, a circuit which is parallel-resonant at approximately the frequency of the signal to be attenuated.

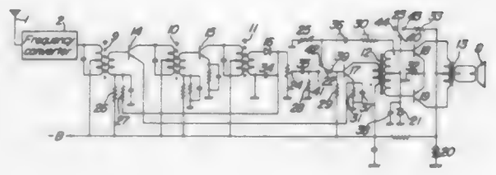
3,372,338
RADIO COMMUNICATION RECEIVER WITH STANDBY CONTROL AND WARNING CIRCUIT

Takashi Kubota, Kamakura-shi, and Seishi Yamazaki, Yokohama, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed May 26, 1964, Ser. No. 370,240

Claims priority, application Japan, May 28, 1963, 38/26,568, 38/26,569; Oct. 10, 1963, 38/52,795; Oct. 17, 1963, 38/54,845

14 Claims. (Cl. 325—364)



1. In a radio communication apparatus, a receiver circuit comprising a frequency converter, an intermediate-frequency amplifier transistor connected to said frequency converter, means for applying automatic gain-controlling voltage to said intermediate-frequency amplifier transistor, a low-frequency amplifier transistor, a transistor power amplifier connected to said low frequency amplifier transistor, a resistor through which flows the emitter current of said intermedite-frequency amplifier transistor and the emitter current of said low-frequency amplifier transistor concurrently, means for selectively feeding back the output signal of said low-frequency amplifier transistor to the input electrode thereof during the standby period of said receiver circuit and means for selectively interrupting the base bias current of said transistor power amplifier during said period, the collector current of said low-frequency amplifier transistor being increased in response to decrease in the collector current of said intermediate-frequency amplifier transistor upon receipt of any incoming signal for effecting oscillation of said low-frequency amplifier transistor, the output of said oscillation serving to excite said transistor power amplifier to amplify said oscillation output for indicating that signals are being received.

3,372,339
COMMUNICATION SYSTEM INCLUDING FREQUENCY SYNTHESIZER SYSTEM

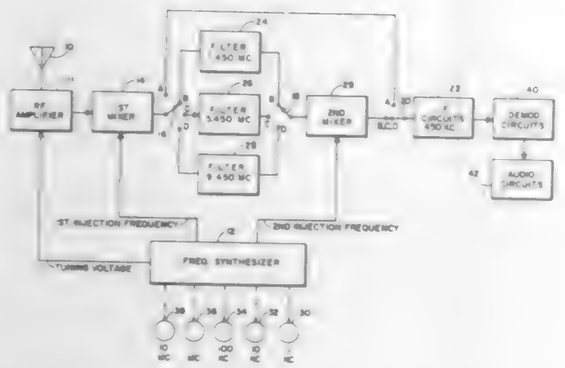
John E. Harrison, Rochester, Floyd A. Koontz, Penfield, and Thomas B. Michaels, Rochester, N.Y., assignors to General Dynamics Corporation, a corporation of Delaware

Filed Aug. 17, 1964, Ser. No. 390,111

12 Claims. (Cl. 325—421)

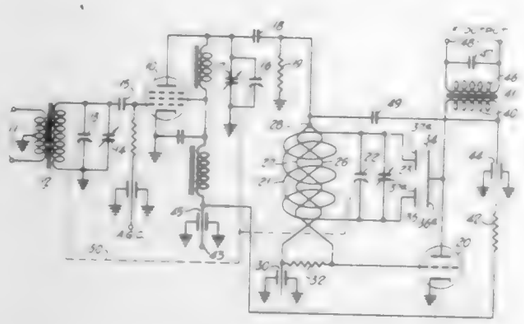
A communication system is described having an RF and IF channel. A frequency synthesizer provides injection signals for translating RF signals into IF signals or vice versa. The synthesizer is controlled in part by a digital frequency counter, the input of which is connected to a reference frequency signal generator and the output of which is connected to a mixer. The counter is controlled by the frequency selection knobs which select the lower order digits of a number which represents the frequency to which the system is to be tuned (100 kc., 10 kc. and 1 kc. digits), such that the mixer receives a frequency having the selected lower order digits. The synthesizer also includes a switched crystal oscillator, the output of which is connected to an error canceling loop which includes the mixer to which the portion of the synthesizer having the digital frequency counter is connected. Other mixers are provided in the error canceling loop in which signals from the reference frequency generator are com-

bined to provide the output injection signal from an output mixer in the error canceling loop. Selectable filters are included in the loop for reversing the direction of error cancellation therein, whereby to double the number of frequencies which are generated. The injections to



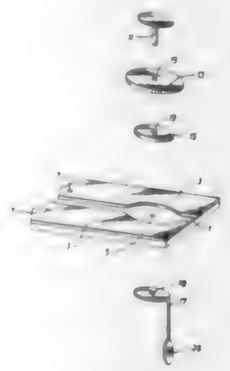
the other mixers in the loop are controlled by the tuning controls of the system so that lower order digits of the frequency of the output injection signal are variable by the lower order digit counter controls independently of any variation in the higher order digit controls.

3,372,340
TRIODE AUTODYNE CIRCUIT
James Edgar Krepps, Bloomington, Ind., assignor to Sarkes Tarzian, Inc., Bloomington, Ind., a corporation of Indiana
Filed Sept. 24, 1964, Ser. No. 398,951
6 Claims. (Cl. 325—440)



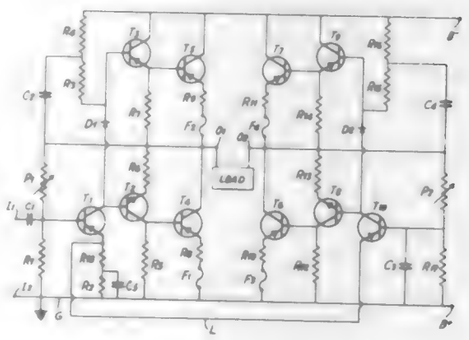
1. An autodyne circuit comprising, a triode tube, an oscillator tank circuit, means including first and second capacitors connected across said tank circuit for coupling the same to the plate of said triode, said capacitors being connected in series across said tank circuit and said plate being connected to the junction of said first and second capacitors, means including a pair of balanced windings inductively coupled to said tank circuit for feeding a signal from said tank circuit to the grid of said triode in the proper phase to sustain oscillations therein, a source of signal input voltage, means connecting said source to said balanced windings at a point of substantially zero oscillator voltage, an intermediate frequency output impedance, a third capacitor, means connecting said output impedance and said third capacitor in series between the plate of said triode and ground, said first, second and third capacitors and said output impedance forming a pi network at the intermediate frequency, said first and second capacitors collectively forming one shunt leg of said pi network, said third capacitor forming the other shunt leg of said pi network and said output impedance forming the series leg of said network, and a neutralizing capacitor connected from the junction of said output impedance and said third capacitor to said point of zero oscillator voltage.

3,372,341
SPARK GAP FOR PROTECTING ELECTRONIC COMPONENTS
Josef Eidecker, Anrath, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 7, 1965, Ser. No. 454,027
Claims priority, application Germany, June 10, 1964, 34,471
4 Claims. (Cl. 328—8)



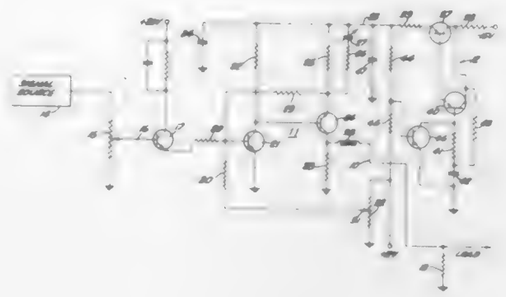
A spark gap apparatus for limiting the electrical potential applied to electronic components. A counter-electrode is precisely spaced from an electrode on a circuit board by an annular spacer. The edge of the counter-electrode extends beyond the spacer and defines a surface which overlies the electrode on the circuit board. Electric discharges will travel between the exposed surface of the counter-electrode and the adjacent surface of the electrode.

3,372,342
DIFFERENTIAL POWER AMPLIFIER
Martin G. Reiffin, 515 Cathedral Parkway, New York, N.Y. 10025
Filed Sept. 26, 1963, Ser. No. 311,732
20 Claims. (Cl. 330—15)



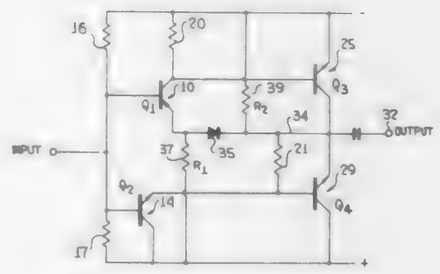
18. A transistor power amplifier comprising a differential amplifier stage having a pair of outputs with respective oppositely-phased output signals, a pair of push-pull complementary-symmetry drive stages each direct-current-coupled to a respective one of said differential amplifier stage outputs, a pair of push-pull output stages each direct-current-coupled to a respective one of said drive stages, and a pair of output terminals for connection to a load and each direct-current-coupled to a respective one of said output stages.

3,372,343
CONSTANT CURRENT GENERATOR SYSTEM
William R. Tompkins, San Diego, Calif., assignor to Cohu Electronics, Inc., San Diego, Calif., a corporation of Delaware
Filed May 4, 1965, Ser. No. 453,117
10 Claims. (Cl. 330—17)



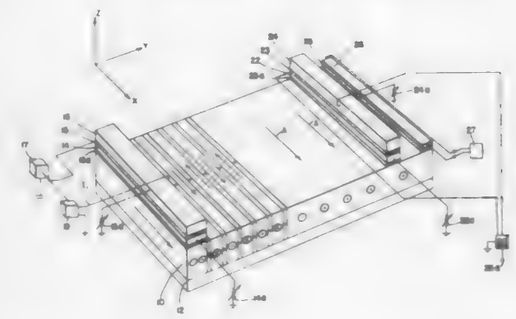
1. An amplifier circuit for driving an electrically long line having a characteristic impedance, comprising: a source of signals, an output circuit, a first transistor, resistive means for applying signals from said source to the base of said first transistor, a source of regulated potential, means for connecting the emitter and the collector of said first transistor in series with said source of potential, a second transistor having complementary symmetry with said first transistor, means for connecting the emitter and the collector of said second transistor in series with said source of potential, means connecting the collector of said first transistor to the base of said second transistor, resistive means connecting the emitter of said second transistor to the base of said first transistor, means coupling the collector of said second transistor to said output circuit, and an impedance connected to the collector of said second transistor and across said output circuit, said impedance having a value equal to said characteristic impedance.

3,372,344
TRANSISTOR AMPLIFIER PROTECTIVE CIRCUIT
David Hafler, 11 Merion Road, Merion Station, Pa. 19066
Filed Oct. 20, 1965, Ser. No. 498,570
5 Claims. (Cl. 330—17)



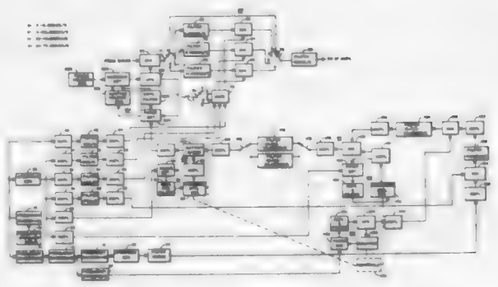
3. A transistor amplifier circuit comprising a driver stage including first and second transistors of opposite conductivity type couples to provide oppositely phased output signals therefrom in response to simultaneous application of input signal thereto; an output stage including first and second transistors coupled to receive respective output signals from said first and second transistors of said driver stage; means connecting the output circuits of the driver stage transistors to a first common junction; means connecting the output circuits of the output stage transistors to a second common junction for deriving output signal therefrom; a negative feedback path connecting said first and second common junctions; and means in said negative feedback path for limiting the flow of feedback current to a predetermined maximum level and for variably biasing said driver stage to maintain signal conduction at low signal levels.

3,372,345
MAGNETIC AMPLIFIER
Harrison W. Fuller, Needham Heights, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Feb. 19, 1964, Ser. No. 345,974
5 Claims. (Cl. 330—63)



A magnetic amplifier including an anisotropic magnetic thin film having an easy axis of magnetization. A rotating magnetic field applied at one end of the film generates a succession of magnetic domains, alternate ones being magnetized in opposite directions. An electrical signal applied to electrodes at the other end of the film generates a restraining magnetic field thereby slowing down propagation of the magnetized domains along the film. Varying the electrical signal applied to these electrodes, varies the amount of magnetic energy passing along the film and a pick-up transducer sensing the magnetic field from the film converts it into an electrical output signal which varies in proportion to the variable signal applied to the restraining electrodes.

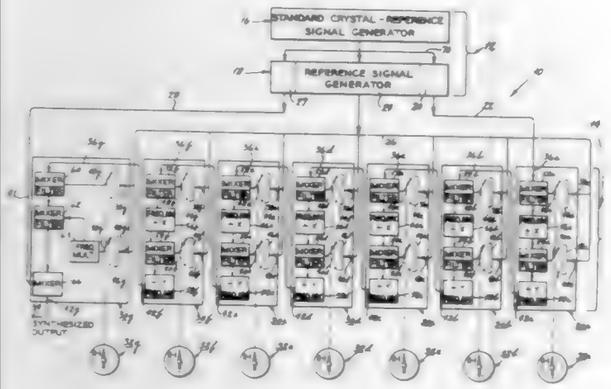
3,372,346
FREQUENCY SYNTHESIZER SYSTEM FOR GENERATING SIGNALS HAVING FREQUENCIES OVER A WIDE BAND OF FREQUENCIES ALL OF WHICH ARE PHASE COHERENT WITH FREQUENCY STANDARD SIGNALS
Raymond J. Rogers, Rochester, N.Y., and Ernest W. Hughes, Ft. Wayne, Ind., assignors to General Dynamics Corporation, a corporation of Delaware
Filed Sept. 9, 1966, Ser. No. 578,338
9 Claims. (Cl. 331—2)



A frequency synthesizer system is described which produces signals over a band from 2–76 mc./s. all coherent with frequency standard signals. The synthesizer includes

two channels which generate signals and apply them to an output mixer. The output mixer drives an output phase locked loop which follows the selected output mixer product. The output phase locked loop produces injection frequency signals for the mixer stages of a radio. Each of the channels includes phase locked loops which are locked by spectrum components obtained from the frequency standard. The input to one of the channels is a frequency stable component obtained from the spectrum which has a frequency of about 17 mc./s. A preset divider phase locked loop, which is locked by a frequency stable signal from the standard, generates signals which may be varied in 1 kc. or smaller steps. The preset divider phase locked loop signal is translated into the 17 mc./s. range and then further translated by the output of the other phase locked loop in the second channel so as to provide an input to the output mixer.

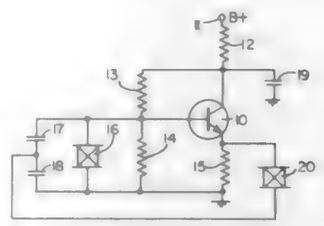
3,372,347
FREQUENCY SYNTHESIZER EMPLOYING MINIMAL NUMBER OF DRIVING FREQUENCIES
Earle D. Jones, Portola Valley, and Albert Macovski, Palo Alto, Calif., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 29, 1966, Ser. No. 546,457
11 Claims. (Cl. 331—39)



A frequency synthesizer having modular-type digit selector units consisting of two mixers and two dividers connected in series, the mixers being separated by one divider and the other divider serving as the selector unit output stage. Each mixer has one of its inputs connected through a switch to one of four auxiliary reference signals. In the decade embodiment of the frequency synthesizer one of the dividers provides division-by-two and the other provides division-by-five. In this arrangement only four auxiliary reference signals are required for mixing with a basic reference signal to provide a synthesized signal frequency the lowest digit of which may be one of ten unique digits. The particular synthesized digit results from the particular combination of auxiliary inputs selected by the digit selector unit and applied to the mixer input terminals.

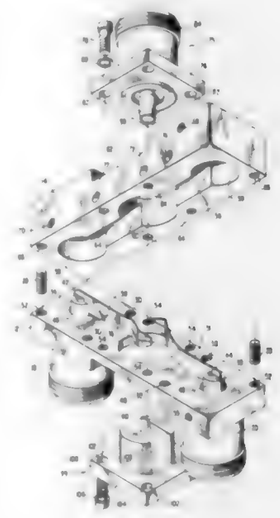
3,372,348
OSCILLATOR HAVING PIEZOELECTRIC ELEMENTS OPERATING AT DIFFERENT HARMONIC MODES
James H. Feit, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 2, 1966, Ser. No. 546,683
4 Claims. (Cl. 331—116)

Crystal oscillator circuit including two piezoelectric resonators having different natural resonant frequencies and operating at different overtone modes to respond at the same frequency. One resonator is connected in the frequency determining portion of the oscillator and the second resonator is connected in the feedback path for



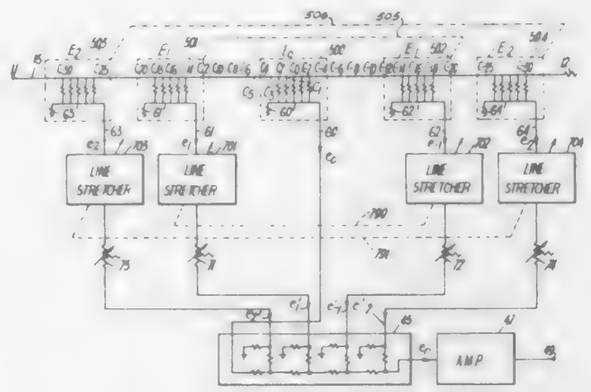
the oscillator. The oscillator includes a transistor and the feedback is from either the emitter electrode or the collector electrode to the base electrode.

3,372,349
MODULAR COAXIAL SWITCH
Carl W. Concelman, Danbury, Conn., assignor to Amphenol Corporation, Broadview, Ill., a corporation of Delaware
Filed Aug. 13, 1965, Ser. No. 479,458
13 Claims. (Cl. 333—7)



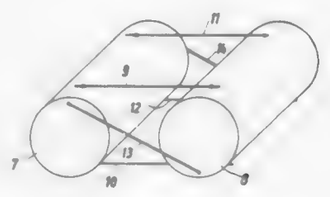
1. An electrical switch for high frequency circuits comprising an elongated switch housing having a longitudinally extending internal chamber and having upper and lower faces each provided with a recess in a central portion thereof, said housing being provided with a first pair of apertures extending inwardly from the bases of said recesses into communication with said chamber and also being provided with a pair of additional apertures extending inwardly from one of said faces into communication with end portions of said chamber, first and second connector fittings extending respectively through said additional apertures and being secured to said housing, each of said connector fittings having an outer end portion adapted for coupling to a transmission line and an inner end portion including a conductor extending into said chamber and being insulated from said housing, first and second switch blades connected respectively to said conductors of said connector fittings and extending longitudinally along said chamber in spaced relation to the walls of said chamber, the free end portions of said switch blades remote from said conductors being disposed in the zone where said first pair of apertures communicate with said chamber, a connector module including a base portion adapted to be received in either of said recesses, said connector module having an outer end portion adapted for coupling to a transmission line and an inner end portion including a contact element disposed between the free end portions of said switch blades in said chamber, and means connected to said housing for moving said switch blades, whereby either of said switch blades may be disposed in contact with said contact element.

3,372,350
ARRANGEMENT FOR COMPENSATING AMPLITUDE AND PHASE DISTORTION OF AN ELECTRIC SIGNAL
Takeshi Kawahashi and Haruo Shiki, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Sept. 17, 1963, Ser. No. 309,512
Claims priority, application Japan, Sept. 17, 1962, 37/40,297
19 Claims. (Cl. 333—28)



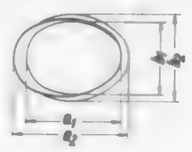
1. A directional coupler employed in systems which compensate for distortion of an electrical signal wave comprising:
first and second transmission lines having characteristic impedances Z_0 and mZ_0;
said second transmission line being of a predetermined length;
said first transmission line being at least as long as said second transmission line;
first and second terminating impedances Z_0 and mZ_0 each being respectively connected to one end terminal of said first and second transmission lines;
the remaining end terminal of said first transmission line receiving said electrical signal wave;
the remaining end terminal of said second transmission line providing the desired output signal;
a plurality of non-inductive resistors coupling said first and second transmission lines;
each of said resistors having their end terminals connected to said first and second transmission lines;
the points of connection along said first and second transmission lines being arranged at equally spaced intervals so as to space said resistors apart by a distance $\frac{1}{4}n$ wavelength of the substantial center frequency of said electrical signal wave interconnecting said first and second transmission lines.

3,372,351
MECHANICALLY STRONG MECHANICAL RESONANT FILTER HAVING WEAK COUPLING BETWEEN RESONATORS
Manfred Börner, Ulm (Danube), and Hans Schüssler, Beimerstetten, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Jan. 20, 1964, Ser. No. 338,724
Claims priority, application Germany, Jan. 18, 1963, T 23,355
15 Claims. (Cl. 333—71)



1. A mechanical resonant filter device having a small relative bandwidth comprising, in combination:
at least two mechanical resonant bodies; and
homogeneous coupling line means for directly connecting said resonant bodies, said coupling means including at least two coupling lines connected for coupling oscillations which are only approximately 180° phase-shifted with respect to each other in the pass wave range for reducing the coupling factor, said coupling lines having an acoustical length of $(2n+1)\lambda/4$, where λ=wavelength at the center frequency of the coupling line and n is equal to an integer.

3,372,352
WAVEGUIDE
Wolfgang Krank, Backnang, Wurttemberg, and Günter Möhring, Langenhagen, Hannover, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), and Hackethal-Draht und Kabel-Werke A.G., Hannover, Germany
Continuation of application Ser. No. 395,532, Sept. 10, 1964. This application July 24, 1967, Ser. No. 655,672
3 Claims. (Cl. 333—95)

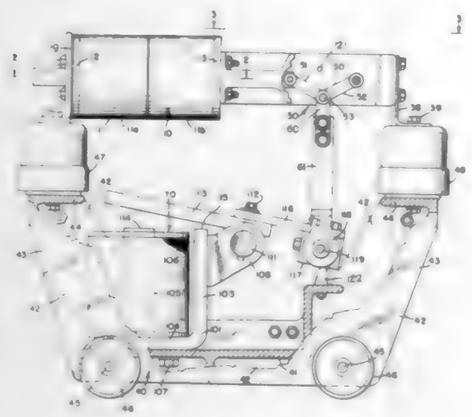


A waveguide having optimum dimensions and in the form of a flexible hollow conductor for the wideband transmission of linearly polarized electromagnetic waves, the waveguide being in the form of a corrugated metal tube of oval cross section and being dimensioned so that a certain relationship exists between the maximum and minimum dimensions of its major and minor axes, the shape and dimensions of the corrugations, the spacing between two successive corrugation ridges and the corrugation pitch angle.

3,372,353
TOGGLE OPERATED ELECTRIC VACUUM SWITCH
Merlin R. Jensen, Minneapolis, Minn., assignor to Electric Machinery Mfg. Company, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 20, 1966, Ser. No. 588,104
4 Claims. (Cl. 335—26)

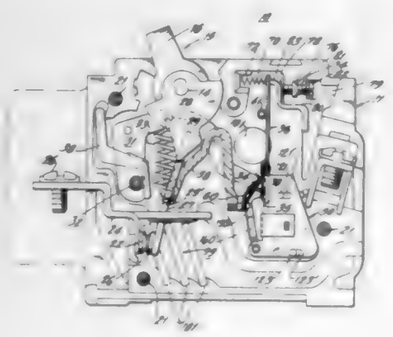
A vacuum electric switch operated by an electromagnet

by means of toggle mechanism and including resilient



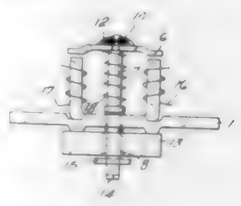
means concentric with one of the contacts for holding the contact in either closed or open position.

3,372,354
ADJUSTABLE MAGNETIC TRIP CIRCUIT BREAKER
Felix E. Myers, Haddon Heights, N.J., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1966, Ser. No. 585,162
9 Claims. (Cl. 335—176)



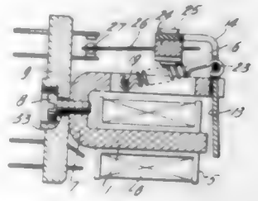
1. In a circuit breaker comprising:
a stationary contact, a cooperating movable contact, and an operating mechanism for moving said movable contact between contact engaged and contact disengaged conditions with said stationary contact;
said operating mechanism including a latchable member, and a latch means operatively positionable in latching engagement therewith for maintaining said latchable member in a first position;
means for urging said latchable member towards a second position;
said contacts being in said engaged condition corresponding to said latch means maintaining said latchable member in said first position;
said contacts being tripped to said disengaged condition responsive to release of said latching engagement and movement of said latchable member towards said second position;
an electromagnetic trip means for releasing said latching engagement responsive to predetermined circuit conditions;
said electromagnetic trip means including cooperating magnet and armature means;
said armature means normally air gap separated from the pole faces of said magnet means and operatively mounted for movement towards said pole faces to close said air gap;
tripping means moved by said armature means responsive to movement of said armature means towards said pole faces for striking a trip portion of said latch means and causing release of said latching engagement;
means for adjusting the normal air gap separation between said armature means and magnet pole faces, whereby the electromagnetic energization required for moving said armature towards said pole faces is adjustably varied;
said adjustment means including means for simultaneously controlling the trip spacing between said armature tripping means and latch means trip portion, whereby said trip spacing is controlled corresponding to a range of armature air gap adjustments.

3,372,355
SOLENOID ARRANGEMENT
Horst Zielasko, Nordenham-Einswarden, Germany, assignor to Felten & Guilleaume Carlswerk Aktiengesellschaft, Cologne-Mulheim, Germany
Filed July 11, 1966, Ser. No. 564,282
Claims priority, application Germany, July 20, 1965, F 46,657
10 Claims. (Cl. 335—230)



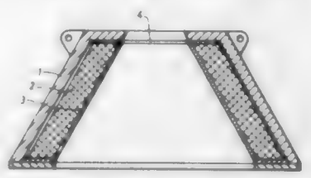
1. A polarized magnetic arrangement comprising, in combination, an electromagnetic solenoid unit composed of a base, two spaced pole pieces integral at one end thereof with said base and having free ends and secondary pole portions on said base integral therewith and arranged spaced from each other; a permanent magnet mounted on said electromagnetic solenoid unit in permanent contact with said spaced secondary pole pieces; an armature having portions located in the region of said free ends of said spaced pole pieces; and means mounting said armature movable towards and away from said free ends.

3,372,356
COMPACT RELAY WITH SINGLE YOKE-CORE MEMBER
Masao Hiyane and Yukihiro Suizu, Suzaka-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Jan. 18, 1966, Ser. No. 521,313
6 Claims. (Cl. 335—281)



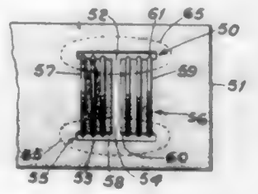
A relay comprises a yoke-core member of unitary structure and substantially U-shaped configuration having a first core arm, a second yoke arm spaced from and substantially parallel to the first core arm and a center part joining the first and second arms. The first and second arms have substantially coplanar end surfaces. The second yoke arm has an elongated slot formed therethrough. The yoke-core member is of magnetizable material and supports an energizing coil on its first core arm. An armature member of substantially L-shaped configuration is pivotally mounted in operative proximity with the first core arm on the second yoke arm at the end surface thereof. A release spring positioned in the elongated slot formed through the second yoke arm has one end affixed to a first fastener in the slot and another end affixed to a second fastener in the armature.

3,372,357
ELECTROMAGNET FOR LIFTING LARGE LOADS OF FINE-GRAINED FERROMAGNETIC SUBSTANCES
Karl Dietzel, Krefeld-Urdingen, and Ulrich Veiel, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Feb. 23, 1966, Ser. No. 529,385
Claims priority, application Germany, Feb. 25, 1965, F 45,357
6 Claims. (Cl. 335—291)



Electromagnet without an iron core for lifting heavy loads of fine-grained ferromagnetic substances, including a solenoid composed of a spool having its winding in the form of a hollow cone expanding or diverging in the direction of the material to be lifted thereby, such that the magnetic field strength thereof increases along the axis of rotation of said core towards that end which is remote from the material to be lifted.

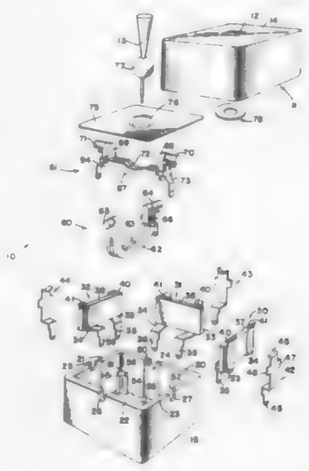
3,372,358
FILM TRANSFORMERS
James W. Roy, Morristown, and Andre Sunnen, Montclair, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Apr. 12, 1966, Ser. No. 542,046
4 Claims. (Cl. 336—200)



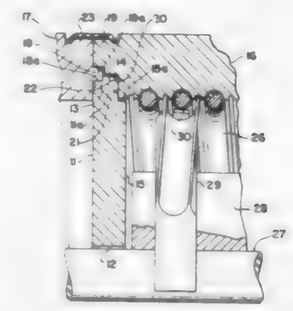
This is an invention of a transformer having primary and secondary windings composed of conductive film disposed on a substrate having magnetic permeability properties.

3,372,359
COORDINATED CONTROL FOR VARIABLE RESISTORS
Gordon K. Wilson, Lake Forest, Ill., assignor to Carter Precision Electric Company, Skokie, Ill., a corporation of Illinois
Filed Jan. 30, 1967, Ser. No. 612,499
9 Claims. (Cl. 338—128)

A coordinated control for a plurality of variable resistors having movable U-shaped carriers mounted at right angles in a housing, each of which mounts or carries at least one conducting wiper for simultaneous engagement with a resistor and stationary terminal to provide a conducting path. A single joy stick-type control lever is carried by a ball-and-socket joint intermediate its ends for nutating (i.e. joy stick) movement and has one end slidably engaging elongated slots in each of the carriers thereby to obtain coordinated control and adjustment of the wipers and associated resistors when the free end of the control lever is moved. Several variable resistors may be positioned for coordinated control with suitable modification of the slide or wiper positioned on the carriers.



3,372,360
COMPOSITE HOUSING FOR ELECTRICAL DEVICES
Lloyd E. Hall, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Feb. 28, 1967, Ser. No. 619,373
4 Claims. (Cl. 338—143)

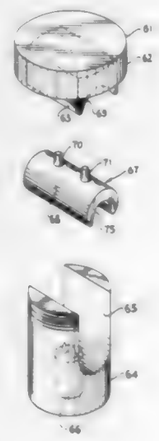


A composite housing for electrical components formed of at least two casing members adapted to be assembled in end-to-end relationship with a separator wall supported therebetween separating the respective spaces in said casing members.

3,372,361
CABLE CONNECTOR
Henry R. Wengen, Poughkeepsie, N.Y., assignor to Fargo Mfg. Company, Inc., Poughkeepsie, N.Y., a corporation of New York
Filed June 15, 1965, Ser. No. 464,020
1 Claim. (Cl. 339—97)

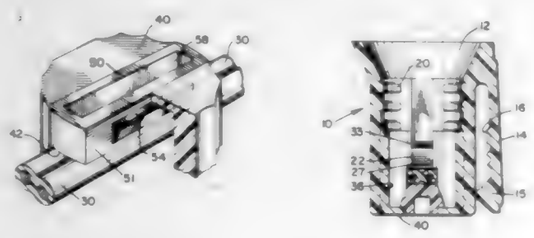
1. A connector for a cable having a plurality of strands of substantially equal diameter and a surrounding insulation including in combination a non-conducting cylindrical body, a transverse groove formed in said body at

one end thereof, a threaded portion of said body, a non-conducting cover, a threaded section of said cover engageable with said threaded portion, a non-conducting pressure pad pivotally attached to said cover and dimensionally formed to be received within said groove, said pad having a first arcuate surface of relatively large dimension, an adaptor adjacent said pressure pad nd formed to be embraced by said arcuate surface, a second arcuate surface of said adaptor having a dimension less than the dimension of said first arcuate surface, a contact member supported by said body and formed of a conducting material, an exposed threaded well of said contact member, a plurality of electrically conducting piercing points formed on said contact member and which



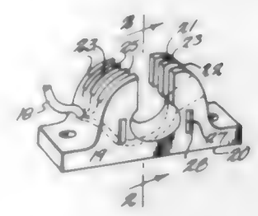
project within said groove, each of said piercing points being in length sufficient to pass between two layers of strands of said plurality and said insulation and each of said piercing points having a contoured point with its apex away from said body and a base adjacent said body and being spaced from adjacent piercing points a distance greater than the diameter of one of said strands of said plurality allowing a straddling of said strands, whereby upon said threaded portion and said threaded section being engaged and said cover and said body drawn together said adaptor is forced against said cable and said piercing points are forced through said insulation and between strands, and means to maintain said adaptor in position on said pressure pad while the cable is being pierced.

3,372,362
LAMP SOCKET AND CLIP
Henry Schick, Commack, N.Y., assignor to Gilbert Manufacturing Co., Inc., Long Island City, N.Y., a corporation of New York
Filed Oct. 6, 1965, Ser. No. 493,472
10 Claims. (Cl. 339—99)



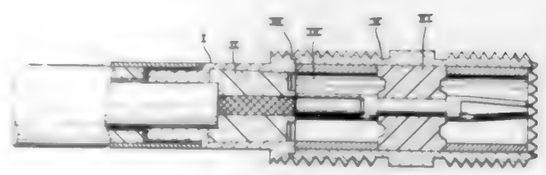
A socket for receiving a light bulb having an opening in the bottom wall for receiving a pair of current carrying wires, the socket having a cover piece with arms mounted on deformable side walls which arms engage the socket bottom wall to hold the cover piece thereto.

3,372,363
LIGHT BULB CONSTRUCTION
Roberto L. Bustamante, 4a. C.P. #40, Santa Ana, El Salvador
Filed Oct. 5, 1964, Ser. No. 401,619
9 Claims. (Cl. 339—145)



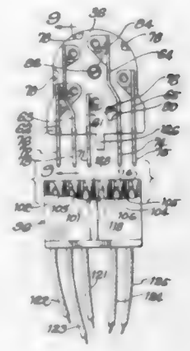
The socket assembly comprises a body made of electrical insulating material with a cylindrical aperture passing therethrough from end face to end face. The sockets also have a first slot extending outwardly from the cylindrical aperture and from end face to end face for receiving contact tines on electrical energy dissipating devices which are inserted in the socket. One or more lateral slots, provided with electrically conductive contacts for engaging tines of the electrical energy dissipating devices, extend from the first slot and are located intermediate the end faces of the socket. In addition, a pair of spaced-apart apertures with contacts mounted therein are located on one end face of the socket on either side of the cylindrical aperture. Electrical energy dissipating devices such as plugs and bulb assemblies are also provided. These devices are provided with radially and longitudinally extending tines which are adapted to be received in the lateral slots and the pair of slots, respectively.

3,372,364
COAXIAL CONNECTOR
Michael Francis O'Keefe, Mechanicsburg, and John Changnien Fan, New Cumberland, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 10, 1965, Ser. No. 486,360
12 Claims. (Cl. 339—177)



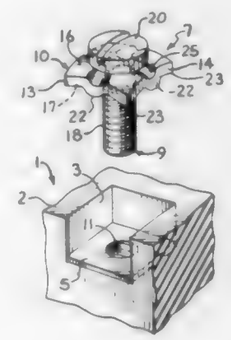
A coaxial connector device is disclosed including a double-ended receptacle and a mating plug structure. The plug structure includes a conductive shell having a smooth bore with a slight taper carrying a dielectric insert compressively loaded against axial pullout by the slight taper to axially lock a center contact member therein. The contact member has a substantially constant outer diameter but includes a series of slight serrations engaged by the dielectric material of the insert in compression. The receptacle carries in the center thereof a dielectric insert carrying a center contact member locked against axial displacement by thin wedge fitted rings within the shell on either side of the insert. The mating portions of the receptacle and plug are held of a substantially constant diameter.

3,372,365
TERMINAL CONSTRUCTION FOR ELECTRICAL SWITCHES OR THE LIKE
Michael F. Bedocs, Wilmette, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois
Filed Dec. 23, 1965, Ser. No. 515,890
4 Claims. (Cl. 339—186)



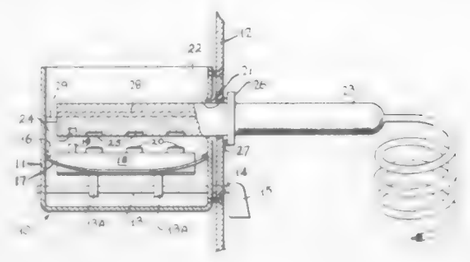
An insulating member, a plurality of terminal prongs projecting beyond said member, a connector having receptacle openings for receiving said prongs, said openings having receptacle contacts therein for engaging said prongs, said connector having an extra receptacle opening therein, and a locating peg on said insulating member and receivable in said extra opening when said connector is properly oriented, each of said receptacle openings having a main portion for receiving one of the prongs and a narrower side portion for receiving the receptacle contact, said peg being receivable in the narrower side portion of the extra opening.

3,372,366
FASTENING DEVICE
William A. Cochrum, Bloomingdale, Ill., assignor to The Fastron Co., Franklin Park, Ill., a corporation of Illinois
Continuation of application Ser. No. 397,952, Sept. 21, 1964. This application Oct. 24, 1966, Ser. No. 589,133
8 Claims. (Cl. 339—272)



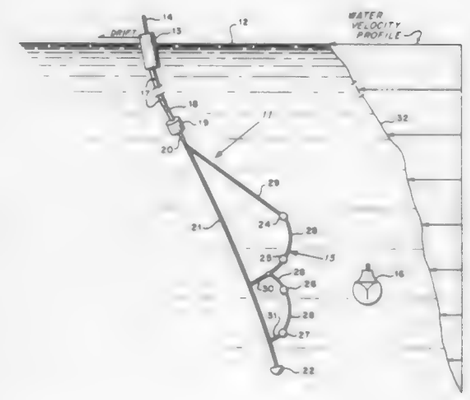
A fastener including a washer for securing a wire to an electrical terminal having a threaded recess. The washer having a body with a generally concave surface on one face and a generally convex surface on the opposite face. The body of the washer having an axial hole therethrough to receive a screw for threading into the recess to hold the wire between the concave surface of the washer and the terminal. The concave surface of the washer having rib means to grip the wire. The rib means being tapered to cam the wire towards the screw.

3,372,367
ELECTRICAL CONNECTION APPARATUS
Virgil K. Concannon, Mount Arlington, N.J. (285 Mount Arlington Blvd., Landing, N.J. 07850)
Filed Aug. 30, 1966, Ser. No. 576,522
3 Claims. (Cl. 339—274)



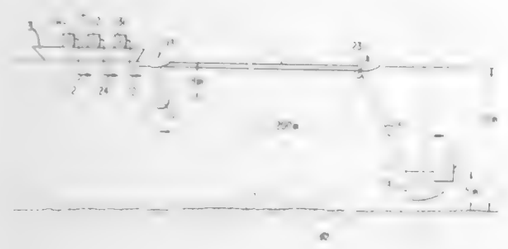
1. Electrical connection apparatus comprising,
a connector receptacle having a support member and an apertured front panel, a cam shaft having cam means and extending through said member and panel, a snap acting spring having its ends secured to said member, a connector plate having protruding contact means and guide means and being normally biased by said spring toward said cam shaft,
a cable connector plug having recessed contact means and means for receiving said guide means, stop means on said plug for engaging said panel upon said plug having traversed its aperture a predetermined distance such that said recessed contact means and guide receiving means correspondingly overlie said protruding contact means and guide means, in vertical alignment, and
means on said cam shaft forwardly of said panel for actuating said cam means to elevate said plate and interengage said aligned means.

3,372,368
VERTICAL STABILIZATION OF LINE HYDROPHONE ARRAYS
John R. Dale, Willow Grove, and Harry R. Menzel, Hatboro, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed May 31, 1966, Ser. No. 554,939
11 Claims. (Cl. 340—2)



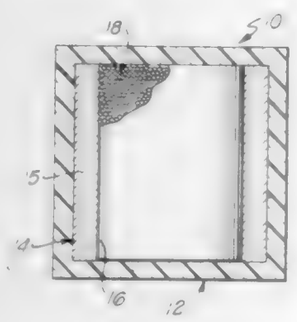
A plurality of hydrophones or the like are maintained in a substantially vertical line array over a large range of water velocity profiles by a truss arrangement having members of preselected lengths. The truss also isolates the array from cable vibrations caused by fluid drag forces and thus substantially reduces cable strumming.

3,372,369
ACOUSTIC METHOD FOR MAPPING UNDERWATER TERRAIN EMPLOYING LOW FREQUENCY CONTINUOUS ACOUSTIC WAVES AND FIXEDLY SEPARATED TRANSDUCERS
Andre Cecchini, Montrouge, Michel Hanff, Brest, and Pierre Juhel, Soyaux, France, assignors to Compagnie des Compteurs, Paris, France, a corporation of France
Filed Sept. 20, 1965, Ser. No. 488,468
14 Claims. (Cl. 340—7)



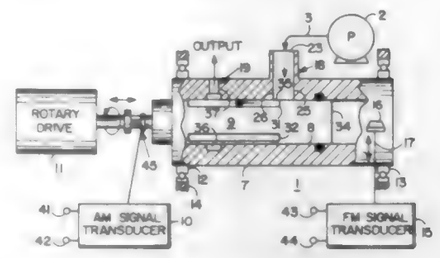
An acoustic method for prospecting the surface of the sea bed which consists in producing low frequency continuous acoustic waves at a first point below the water above the bed. The acoustic waves are received continuously at at least one second point lying below the surface of the water above the bed at a predetermined constant distance above the bed and at a predetermined constant distance from the first point. The received acoustic waves are continuously recorded and measured and the continuation of the signal employed to define data relating to the nature of the sea bed.

3,372,370
ELECTROACOUSTIC TRANSDUCER
Reginald J. Cyr, Woodland Hills, Calif., assignor to Aquasonics Engineering Company, Inc., Canoga Park, Calif., a corporation of California
Filed Sept. 22, 1965, Ser. No. 489,342
6 Claims. (Cl. 340—8)



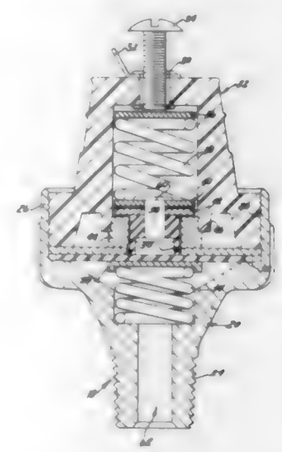
1. In an electroacoustic transducer adapted for underwater applications, the combination of: a piezoelectric transducing element; means including a pressure-accommodating mass of acoustic energy absorbing material disposed in operative relationship with said transducing element for supporting said element against destructive deformation from the pressure of surrounding water while permitting the vibratory functioning of said element, said mass consisting of a plurality of inorganic microballoons supported in closely juxtaposed operative relationship with each other by a suspensory body with the assembly thereof disposed in operative supporting relationship with said piezoelectric transducing element; and a housing encompassing said transducing element and said pressure-accommodating mass.

3,372,371
AM/FM HYDROACOUSTIC GENERATOR
Marshall W. Lesser and Joseph F. McCormick, Monroe, N.Y., assignors to General Dynamics Corporation, a corporation of Delaware
Filed May 13, 1966, Ser. No. 549,871
5 Claims. (Cl. 340—8)



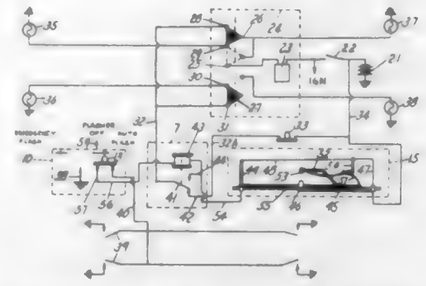
An AM/FM hydroacoustic oscillator is described comprising a housing having inlet and outlet ports through which fluid (under pressure) flows, and a spool disposed in the housing having a channel cut therein, the spool being adapted for rotation and translation movement with respect to its axis so that when the spool is translated the flow area through the oscillator is varied to produce amplitude oscillation of the fluid flow. FM oscillation is accomplished by cyclically rotating the housing in relation to the spool.

3,372,372
AUTOMOBILE DECELERATION SIGNAL SWITCHING CIRCUIT
William R. Carpenter, Muskegon, and David G. Passmore, Comstock Park, Mich., assignors, by mesne assignments, to Medallion Instruments, Inc., Spring Lake, Mich., a corporation of Michigan
Filed Mar. 31, 1965, Ser. No. 444,266
7 Claims. (Cl. 340—71)



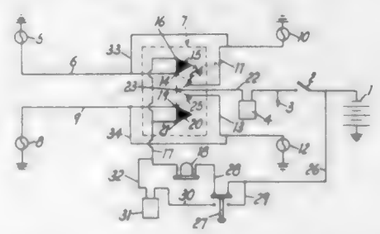
A circuit for switching on an incandescent alarm lamp in response to deceleration of a motor vehicle, in which a relatively high-impedance branch of the circuit constantly maintains a very low current through the lamp sufficient only to warm its filaments but insufficient to drive the same into incandescence, and wherein a switch means senses the engine vacuum and upon deceleration conditions closes a shorting circuit across the aforesaid high impedance branch to raise the current flow through the indicating lamp and cause incandescence thereof. The vacuum-sensing switch means incorporates a diaphragm-operated contact, a relatively fixed contact, and a floating contact positioned therebetween which is attached to neither and which can move between them to keep such contacts clean and unpitted.

3,372,373
AUTOMOBILE DOOR OPERATED SAFETY SIGNAL
William A. Heidman, Jr., 1139 Lakeside Drive SE., Grand Rapids, Mich. 49506
Filed Sept. 11, 1964, Ser. No. 395,679
13 Claims. (Cl. 340—74)



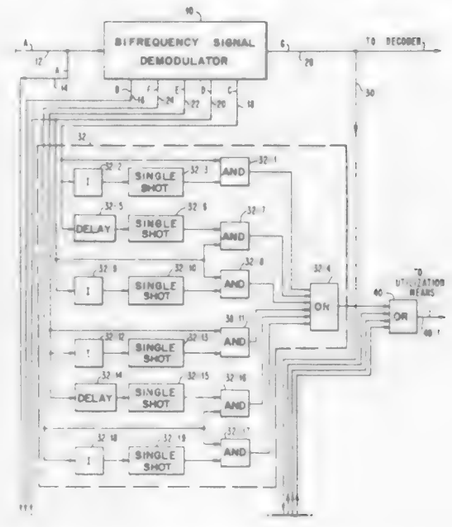
1. In an automotive vehicle having two exterior rear lights with one on each side of the vehicle, a battery, a first normal rear light energizing circuit including individual conductors connected separately to said two rear lights, and a selectively operable switch adapted to connect said rear light circuit including both said individual conductors through said battery,
an emergency signal system comprising a thermally actuated switch adapted to alternatively and intermittently pass a relatively small and a relatively high amperage current,
said small current being insufficient to effectively light said rear lights,
a relay switch having a coil connected in series with said thermally actuated switch and adapted to be actuated by either said low or high amperage currents,
emergency circuit means including a switch closed by the energized condition of said coil connecting said rear light circuit to said battery through said thermally actuated switch, independently of said selectively operable switch,
another switch closed by the deenergized condition of said coil connecting said rear light energizing circuit to said battery through said selectively operable switch,
and a second selectively operable switch arranged to connect said coil and thermally actuated switch in series through said battery to permit selective energization of said coil.

3,372,374
AUTOMOTIVE STOP LIGHT AND TURN SIGNAL CIRCUITS
William A. Heidman, Jr., 1139 Lakeside Drive SE., Grand Rapids, Mich. 49506
Filed Dec. 28, 1964, Ser. No. 421,267
7 Claims. (Cl. 340—81)



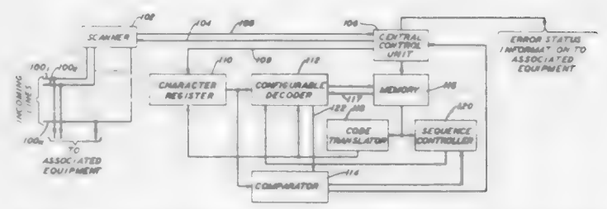
Stop light and turn signal circuits for vehicles in which a manually operable switch is connected to alternatively disconnect the brake switch from the stop lights and connect a second emergency flasher to the stop lights. A variation includes door operated switches in circuit with the emergency flasher.

3,372,375
ERROR DETECTION SYSTEM
Donald J. Lem, Peekskill, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 5, 1964, Ser. No. 365,028
11 Claims. (Cl. 340—146.1)



An error checking device for a bi-frequency data signal analyzes the signal as it is decoded to detect erroneous data reception. The factors checked are (1) signal distortion as evidenced by a too short time interval between any two crossings of the zero amplitude reference by the received signal, (2) amplitude distortion which reduces the received signal below a safe level, (3) phase distortion caused by noise and putting a reconstituted signal out of phase with the transmitted signal and (4) decoder clock amplitude which should be at least up to a safe amplitude.

3,372,376
ERROR CONTROL APPARATUS
Harry A. Helm, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 5, 1964, Ser. No. 401,408
14 Claims. (Cl. 340—146.1)



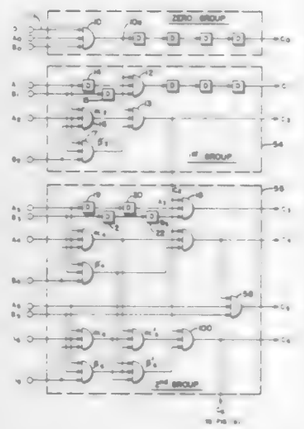
A coding and error control apparatus is incorporated as common equipment in a transmission network containing a plurality of data lines, each of which transmits redundant information signals in accordance with a given error control format. The configuration and state of the apparatus are selectively variable in response to stored control words descriptive of the various error formats associated with the lines. Thus, for example, if information is received on a given line, gating signals derived from the control word associated with that line are applied to configure the apparatus so that decoding of the redundant information may be accomplished in accordance with the error format characteristic of that line. Similarly, the apparatus can be utilized in a multiline system to encode information in accordance with a selected error format associated with a given transmission channel.

3,372,377
DATA PROCESSING SYSTEM

Marius Cohn and Richard Lindaman, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 442,448, Mar. 24, 1965. This application Aug. 2, 1965, Ser. No. 476,458

15 Claims. (Cl. 340—146.2)



1. A carry generator, for generating n signals $C_{n-1} \ldots C_1 \ldots C_1C_o$, representative of carries corresponding to an augend of the form $A_{n-1} \ldots A_1 \ldots A_1A_o$ and an addend of the form $B_{n-1} \ldots B_1 \ldots B_1B_o$, comprising:

N carry generating groups $N_1=0 \ldots N-1$, where N is defined by the relation $2^{N-1} \leqq n < 2^N$, for generating signal representations of $C_{n-1} \ldots C_1 \ldots C_1C_o$, each of said carry generating groups $N_1=0 \ldots N-2$, coupled to the next lower carry generating group, for generating 2^{N_1} signals representative of

$$C_{2(2^{N_1}-1)} \ldots C_{2^{N_1}-1}$$

corresponding to digit orders

$$A_{2(2^{N_1}-1)} \ldots A_{2^{N_1}-1}$$

of said augend and digit orders

$$B_{2(2^{N_1}-1)} \ldots B_{2^{N_1}-1}$$

of said addend, comprising;

input means for receiving signal representations of digit orders

$$A_{2(2^{N_1}-1)} \ldots A_{2^{N_1}-1}, \; B_{2(2^{N_1}-1)} \ldots B_{2^{N_1}-1}$$

and carry signal

$$C_{2^{N_1}-2}$$

the latter being representative of the highest digit order carry generated by the next lower carry generating group, and

means coupled to said input means for utilizing said digit order and carry signals to generate signals representative of

$$C_{2^{N_1+1}-3} \ldots C_{2^{N_1}-1}$$

and to generate a signal representative of

$$C_{2(2^{N_1}-1)}$$

in accordance with the function,

$$C_{2(2^{N_1}-1)} = \alpha_{2(2^{N_1}-1)}^{N_1} \# \beta_{2(2^{N_1}-1)}^{N_1} \# C_{2^{N_1}-2}^{N_1}$$

said carry generating group $N_1=N-1$, coupled to the next lower carry generating group, for generating

$$n-\sum_{N_1=0}^{N-2} 2^{N_1}$$

signals representative of carries $C_{n-1} \ldots C_{2N-1-1}$ corresponding to digit orders $A_{n-1} \ldots A_{2N-1-1}$ of said augend and digit orders $B_{n-1} \ldots B_{2N-1-1}$ of said addend, comprising;

input means for receiving signal representations of digit orders $A_{n-1} \ldots A_{2N-1-1}$, $B_{n-1} \ldots B_{2N-1-1}$, and carry signal C_{2N-1-1}, the latter being representative of the highest digit order carry generated by the next lower carry generating group, and

means coupled to said input means for utilizing said digit order and carry signals to generate signals representative of $C_{n-2} \ldots C_{2N-1-1}$ and to generate a signal representative of C_{n-1} in no more than N logic levels if $n-1<2^N-2$ and in accordance with the function,

$$C_{n-1} = \alpha_{2^N-2}^{N-1} \# \beta_{2^N-2}^{N-1} \# C_{2^{N-1}-2}$$

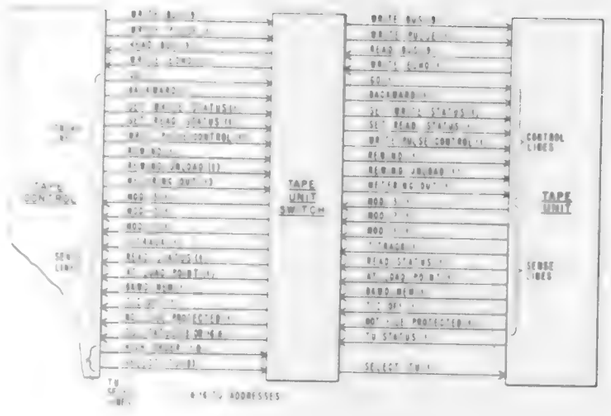
if $n-1=2^N-2$.

3,372,378
INPUT/OUTPUT UNIT SWITCH

Ernest W. Devore, Poughkeepsie, Roy J. Smith, Wappingers Falls, and John M. Tyrrell, Hyde Park, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 27, 1964, Ser. No. 362,710

21 Claims. (Cl. 340—172.5)



An input/output (I/O) unit switch operated by a plurality of control units, permitting them to independently select and use any available I/O unit from a plurality of I/O units. No additional computer instruction is needed to recognize the existence of the I/O unit switch, which is a passive device that responds to standard I/O select instructions needed without the I/O switch. Coordinating selection circuitry prevents improper selection of any I/O unit. A modular configuration with nodes having slow speed (relay) bus switching circuits and high speed (semiconductor) control circuits permits full performance in switching and controlling magnetic tape units. The control units may be connected to the same or different computer systems.

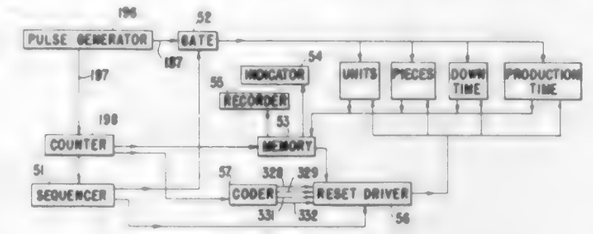
3,372,379
SYSTEM FOR READING, RECORDING AND RESETTING REGISTERED DATA

Donald J. Collom, Birmingham, and Charles G. Mann, Farmington, Mich., assignors to Weltronic Company, Southfield, Mich., a corporation of Michigan

Filed Aug. 21, 1964, Ser. No. 391,084

21 Claims. (Cl. 340—172.5)

A system for reading, storing and recording information accumulated in one or more registers and for verifying the read, stored or recorded values by applying and advancing signal to each register which causes an advance according to the read, stored or recorded value. The advance signal is of a value which advances the register from its present setting to a predetermined reset value, usually zero. The failure to return any register to the predetermined reset value indicates a malfunction in the sequence, while return of all registered to the respective predetermined reset values verifies the read, stored or recorded value, whichever is used as the basis for establishing the reset signal.



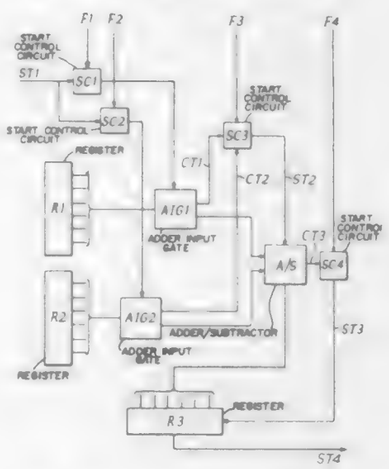
3,372,380
DATA HANDLING APPARATUS

Ronald Threadgold and David Hartley, Liverpool, England, assignors to Automatic Telephone & Electric Company Limited, Liverpool, England, a British company

Filed Sept. 8, 1964, Ser. No. 395,095

Claims priority, application Great Britain, Sept. 20, 1963, 37,141/63

6 Claims. (Cl. 340—172.5)



Data handling apparatus including control means and a plurality of functional elements arranged to be operated sequentially for carrying out a required data handling operation under the control of the control means, each functional element being arranged to perform a predetermined function on data applied to it upon the application of a start signal individual to each functional element, and in which each functional element comprises function monitoring means for deriving an output signal only upon the successful completion of its function by that functional element, and in which the start signal for each, but the first functional element in the sequence, is derived from the output signal signifying the successful completion of the function of the immediately preceding functional element and from said control means.

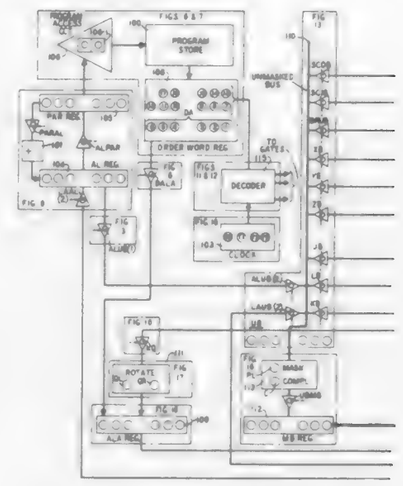
3,372,381
DIGITAL COMPUTER TEACHING MACHINE

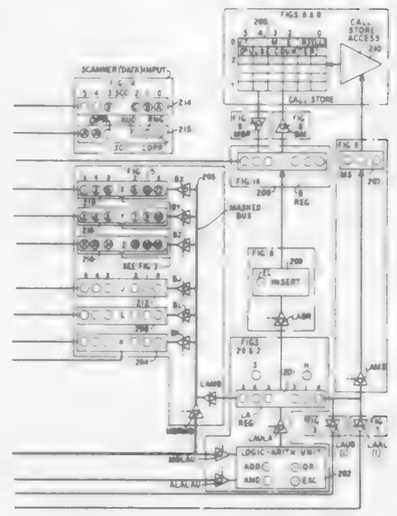
Matthew Raspanti, Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 6, 1965, Ser. No. 423,693

10 Claims. (Cl. 340—172.5)

A word-organized stored program digital computer having a block diagram display unit which visually displays the states of various of the internal elements of the computer and various of the external equipments controlled by the computer. In the context of this disclosure, the computer controls a telephone switching system. The computer operates at a slow rate, and can even be stopped during execution of instructions, so that the visual display can be utilized as a teaching tool.



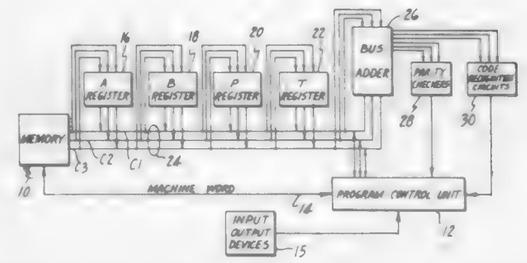


3,372,382
DATA PROCESSING APPARATUS

Erwin L. Newman, Philadelphia, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Continuation of application Ser. No. 46,017, July 28, 1960. This application Aug. 16, 1965, Ser. No. 482,031

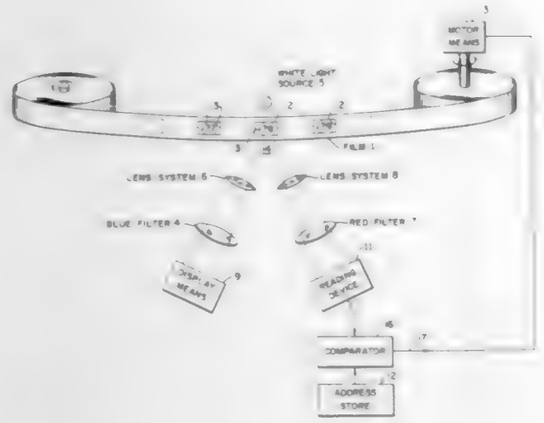
13 Claims. (Cl. 340—172.5)



5. In a data processing system employing binary coded groups of signals for representing data and wherein a parity signal is used to maintain a fixed parity in each group, an adder circuit having inputs arranged for incrementing or decrementing a number defined by a group of signals received at said inputs in accordance with one

or more control signals, a parity modifier circuit having inputs for receiving certain of said group of number signals and providing, when necessary, an output signal for modifying said parity signal of said received number signals in accordance with the amount by which said number signals are incremented or decremented, means for applying said number signal group and said parity signal to said adder circuit, means for applying said number signals and said one or more control signals to said parity modifier circuit, means for applying said parity modifier output signal to said adder circuit, and a parity checking circuit having inputs for receiving other signals representing said incremented or decremented number and providing an error signal when said received other signals have incorrect parity.

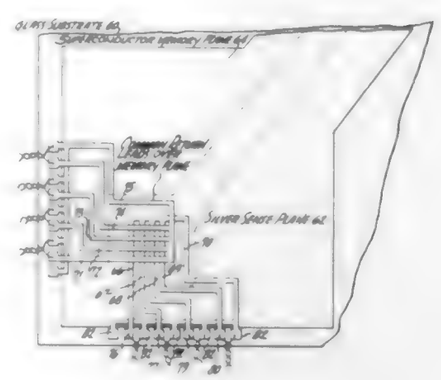
3,372,383
INFORMATION RETRIEVAL SYSTEM
Jacob J. Konen, Jr., and Max K. Muir, San Diego, Calif., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Aug. 20, 1964, Ser. No. 390,958
3 Claims. (Cl. 340—173)



1. An information retrieval system comprising, a film bearing a plurality of display images transparent to light of a first color and a plurality of indexing images transparent to light of a second color associated with said display images and occupying the same area of said film as said display images, a viewing area, means for driving said film to present particular display images with their associated indexing images to said viewing area, first filter means positioned on said one side of said film for transmitting said display images of said first color but not said indexing images of said second color, second filter means positioned on said one side of said film for transmitting particular ones of said indexing images of said second color but not said display images of said first color, and a light source positioned on the other side of said film for causing said display images of said first color to be directed at said first filter means and for causing said indexing images of said second color to be directed at said second filter means.

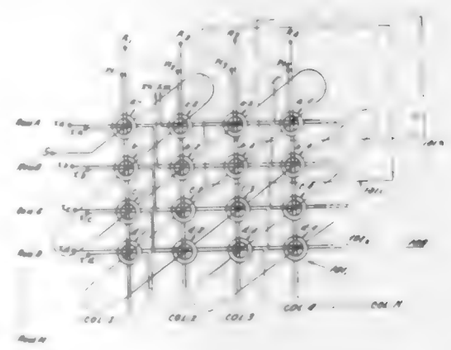
3,372,384
CRYOELECTRIC MEMORY
Richard W. Ahrons, Somerville, and David A. Christiansen, Trenton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 16, 1964, Ser. No. 352,177
12 Claims. (Cl. 340—173.1)

1. In a cryoelectric memory,
a superconductor memory plane;
a plurality of drive leads which are insulated from the memory plane and lying over one surface of the memory plane; and



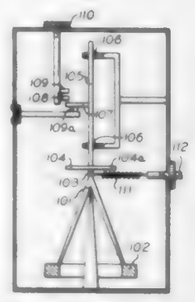
a return lead which is insulated from the memory plane, connected at one end to one end of each of said plurality of drive leads and lying over one surface of the memory plane for substantially the entire length of said return lead.

3,372,385
ELECTRIC SIGNAL DELAY CIRCUIT
Yoshiyasu Kikuchi, Shiba Mita, Minatoku, Tokyo, Japan, assignor to Nippon Electric Company Limited, a corporation of Japan
Filed Dec. 27, 1962, Ser. No. 247,607
Claims priority, application Japan, Dec. 28, 1961, 36/47,951
9 Claims. (Cl. 340—174)



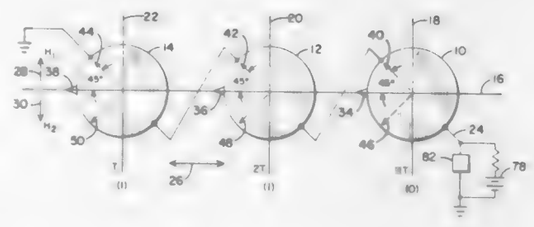
1. A variable electric signal delay means comprising:
a magnetic element matrix composed of saturable magnetic elements arranged in regular rows and columns;
columnar write-in windings each threading all magnetic elements of an associated column in said matrix;
a group of first row windings each threading all magnetic elements of an associated row of said matrix;
a group of second row windings associated with each of the rows of said matrix and threading at least one magnetic element of its associated row;
each of the second row windings threading at least one magnetic element of at least two rows other than the row with which said second row winding is associated; the magnetic elements of each row of the matrix which are threaded by a common second row winding being located in a column other than the columns occupied by the magnetic elements of adjacent rows which the common second row winding threads to effect said variable signal delay.

3,372,386
APPARATUS FOR THE DETERMINATION OF THE HORIZONTAL ACCELERATION COMPOSED OF DIFFERENT COMPONENTS IN AUTOMOTIVE VEHICLES
Paul Klinger, Vienna, Austria, assignor to Kuratorium für Verkehrssicherheit, Vienna, Austria, a corporation of Austria
Filed Feb. 15, 1965, Ser. No. 432,540
Claims priority, application Austria, Mar. 13, 1964, A 2,194/64; May 4, 1964, A 3,915/64
4 Claims. (Cl. 340—262)



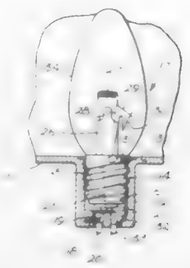
An apparatus for the determination of the amount of the horizontal acceleration composed of at least one component in automotive vehicles, comprising a housing secured to a vehicle, a pendulum mounted swingably in the housing and including a mass substantially horizontally movably disposed in the housing in at least two degrees of freedom, a disc associated with the pendulum, an electric contact device having a plurality of contacts, an indicating device connected with each of the plurality of contacts, a linkage means abutting a surface of the disc and being moved by the swinging of the pendulum by acceleration and for operating the electric contact device upon movement of the pendulum mass, wherein each of the plurality of contacts are successively operated with additional swinging of the pendulum, and two of the indicating devices are operated simultaneously in a transfer range of operation of one of the indicating devices to the next adjacent range of operation of another of the indicating devices.

3,372,387
DIGITAL TO ANALOG CONVERTER
Charles H. Tolman, Bloomington, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 9, 1964, Ser. No. 395,137
5 Claims. (Cl. 340—347)



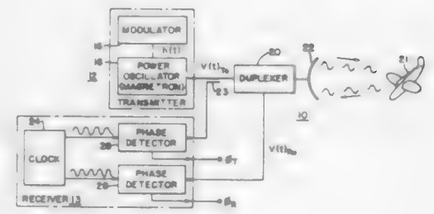
A D/A converter or code translator which utilizes magnetic thin films whose resistance varies when their magnetic vectors are rotated, whose thickness forms a geometric progression T2, T4, etc., and whose resistance changes also form a geometric progression. For *n* thin films there will be *n* discrete resistance changes or evenly spaced voltage levels produced on the output line as the magnetic vectors are rotated.

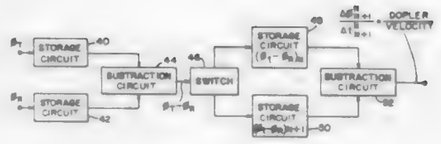
3,372,388
CHIME LIGHT
Robert A. Sanford, 6971 Cozycroft Ave., Canoga Park, Calif. 91306
Filed July 30, 1965, Ser. No. 476,092
3 Claims. (Cl. 340—371)



The chime light has a housing in the form of a horn with a socket in the wall of the housing to receive a flashing light. The flashing mechanism for the flashing light produces a sound as it turns on and off and this sound is directed to the surroundings by the housing.

3,372,389
DOPPLER RADAR SYSTEM
Brian M. Bellman, Severna Park, Guy H. Bias, Jr., Baltimore, and Thomas M. Moore, Severna Park, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 13, 1967, Ser. No. 615,489
8 Claims. (Cl. 343—8)



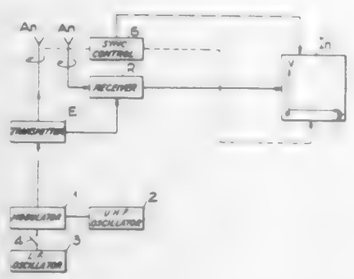


This invention relates to a Doppler radar system illustratively including a free running oscillator such as a magnetron tube for generating a high powered, transmission signal, an antenna for radiating the transmission onto a moving object and for receiving the return or echo signal, a clock for providing a continuous signal of controlled frequency, phase detecting circuitry for measuring the relative phase of the transmission signal at the time of transmission with respect to the phase of the continuous clock signal and for measuring the relative phase of the return signal at the time of reception with respect to the continuous clock signal, and computing circuitry for measuring the round trip time of the transmitted signal in terms of phase and for determining the rate of change of the round trip transmission time for successive pulses of the transmission signal.

3,372,390
DOPPLER RADAR SYSTEMS

Richard Maugué, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Dec. 14, 1966, Ser. No. 601,781
Claims priority, application France, Dec. 17, 1965, 42,678, Patent 1,467,244
5 Claims. (Cl. 343—9)



The distance of a target to a surveillance Doppler radar system is measured, without stopping the surveillance, through sinusoidally frequency modulating the transmitted wave and evaluating the length of the spot supplied by the echo on a conventional velocity bearing indicator.

3,372,391
AUTOMATIC FREQUENCY CONTROL FOR RADAR RECEIVERS

Theodore Lerner, Buffalo, N.Y., assignor, by mesne assignments, to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware

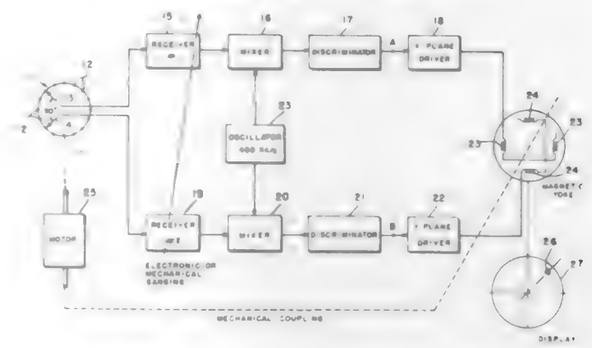
Filed Feb. 1, 1960, Ser. No. 5,881
16 Claims. (Cl. 343—17.1)

1. A radar system comprising radar pulse generator means having mechanical pulse-frequency varying means; drive means coupled with said frequency varying means for changing the tuning thereof; pulse echo receiver means having a voltage-tunable local oscillator; transducer means connected with said drive means for delivering a coarse automatic frequency control voltage for said local oscillator, said voltage having an amplitude dependent upon the position of said pulse frequency varying means; fine automatic frequency control means including a mixer receiving a sample of each transmitted pulse and the output of said local oscillator for developing an intermediate frequency, an I.F. amplifier for amplifying said intermediate frequency, a frequency discriminator for developing a fine automatic frequency control voltage for said local oscillator, said control voltage being a function of the difference in frequency between said intermediate frequency and the desired intermediate frequency; and switch means controlled in step with the radar pulse generator to connect said control voltages to correct the frequency of the local oscillator after each echo-pulse receiving period.

3,372,392
ELECTRONIC ALIDADE FOR A DIRECTION FINDER SYNCHRONOUS INDICATOR

John M. Beukers, Stony Brook, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed June 28, 1966, Ser. No. 562,434
7 Claims. (Cl. 343—113)

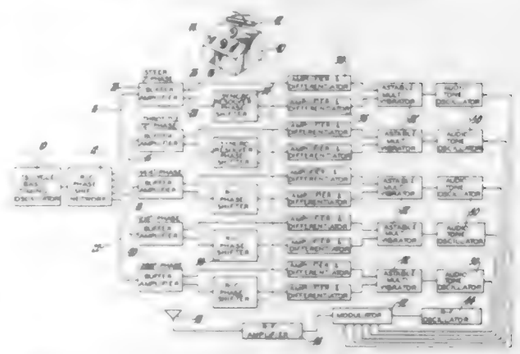


An electronic alidade for providing digital readout of both azimuth and elevation information from Doppler direction finders is provided. In its basic form the Doppler radio direction finder comprises of a number of equally spaced antenna elements which are located on the circumference of a circle. Each antenna element is sequentially connected to a receiver by means of a commutator. The receiver processes the information and it is displayed on a cathode ray screen as a dot. The distance of the dot from the center of the cathode ray tube display is a measure of the amplitude of the signal and its angular position from a reference axis is a measure of the phase angle. From this information azimuth and elevation can be determined by the operator by use of a line alidade and peripheral azimuth degree scale. In the disclosed system an electronic alidade and digital readout is provided. The electronic alidade consists of means controllable by the operator for generating a spot anywhere on the face of the cathode ray tube. The elevation and azimuth signals from the receiver are applied to the electronic alidade system. The operator manipulates two dials on the electronic alidade so as to superimpose the spot generated by the electronic alidade system on the spot generated by the Doppler direction finder. The angular positions of the dials are converted to digital information that is either displayed or printed out at the command of the operator.

3,372,393
RADIO REMOTE CONTROL SYSTEM

Roy S. Cataldo, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 5, 1965, Ser. No. 445,575
7 Claims. (Cl. 343—225)



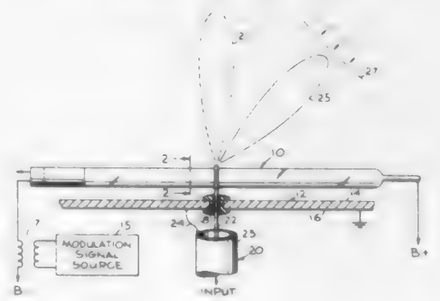
A radio remote control signal system comprising a transmitter producing a chain of distinct frequency pulses of separately variable width. Pulse width modulation is

accomplished by steering a sinusoidal waveform into two paths, one of which may be phase shifted with respect to the other and generating a tone during the time interval between like amplitude points of the original and shifted waveforms. A frequency-selective, width demodulating receiver is provided.

3,372,394
ELECTRONICALLY STEERABLE ANTENNA SYSTEM UTILIZING CONTROLLABLE DIPOLAR RESONANT PLASMA COLUMN

Irving Kaufman, Woodland Hills, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio

Filed July 29, 1963, Ser. No. 298,174
6 Claims. (Cl. 343—754)



3. A radio frequency antenna system for selectively receiving electromagnetic wave energy, said system comprising:

a gas discharge device extending substantially normal to the electric field vector of said wave energy for providing, when energized, an elongated plasma column, said plasma column characteristically exhibiting dipole plasma resonance oscillation at a frequency which varies as a function of the free electron density of the plasma and characteristically exhibiting propagation of resonant frequency waves along the plasma column in a manner such that successive elemental portions oscillate in the dipole mode at successively later phase relations;

means including a current source connected to pass discharge current longitudinally through said discharge device for controlling said electron density;

means positioned adjacent said discharge device and responsive substantially only to the dipole electric fields produced by said oscillating plasma for deriving signals therefrom; and

means coupled with said current source for varying said discharge current in accordance with a predetermined function of time to thereby variably control the angular position of maximum sensitivity to impinging electromagnetic wave energy.

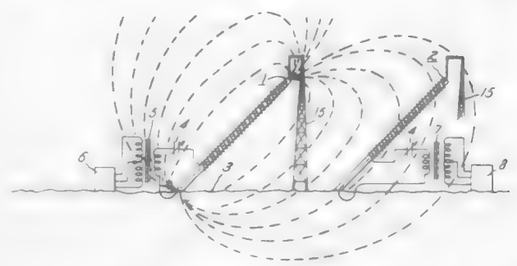
3,372,395
VLF ANTENNA

Halsey W. Kline, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Nov. 13, 1963, Ser. No. 323,370
2 Claims. (Cl. 343—787)

1. An inductive-type antenna system for the transmission and reception of electromagnetic radiation in the very low frequency (VLF) range and including at least two relatively widely spaced-apart antennae, each antenna comprising

a magnetic core being hollow cylindrical in cross section and comprised of a relatively high permeability material, said core being disposed at an angle of approximately 45 degrees relative to the ground plane to thereby reduce interference developed by vertical and horizontal antennae systems operating at a similar frequency as said inductive-type antenna system, and

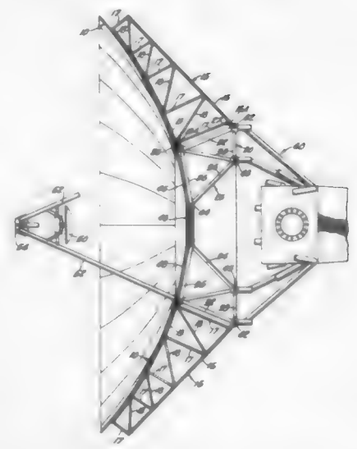


a first part of an electrical conductor wound coaxially around said core along substantially the total length thereof and electrically insulated therefrom to produce a relatively high Q inductive circuit, a second part of said conductor passing along substantially the total length of said core on the inside thereof, said core being of length h substantially shorter than conventional half wavelength straight-wire antennae operable in the very low frequency range up to 30 kilocycles per second of the electromagnetic energy spectrum and the magnitude of the product Q_h of said inductive-type antenna being in the order of the Q_h product of said straight-wire antennae.

3,372,396
CANTILEVERED PETAL-BEAM PARABOLIC ANTENNA REFLECTOR

Alfonso A. Braccini, La Mesa, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California

Filed Oct. 16, 1964, Ser. No. 404,342
3 Claims. (Cl. 343—916)

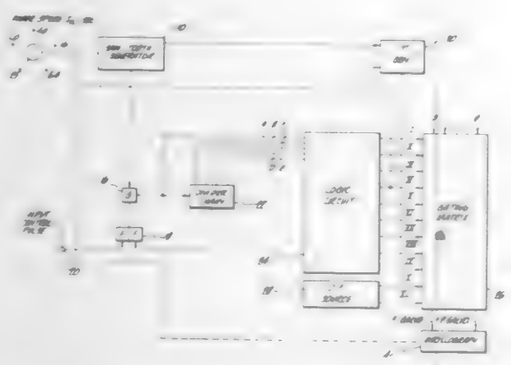


A reflector for microwave energy consists of twenty-four cantilevered assemblies supported from a rigid torus. High structural efficiency is obtained by making the reflective panels and centrally disposed radial beams integral composite structures, with the reflective panels contributing bending stiffness to the radial beams. Additional stiffness is achieved by interconnecting the panels and by circumferentially connecting the radial beams to intercostal members which serve to stabilize and support the panel edges. The individual reflective panels are secured rigidly and permanently to the reflector's backup structure, the shape of the individual panels being accurately established at that time. At assembly, the individual panels are aligned with each other and a pair of fastening means on the ends of each centrally disposed radial beam is secured to spaced points on the torus.

3,372,397
TRAVEL RECORDING APPARATUS FOR COAL CUTTERS OR OTHER MINING MACHINES
Pierre Louis Joseph Tison, Saint-Avold, Moselle, France, assignor to Houilleres du Bassin de Lorraine, Merlebach, Moselle, France
Filed Sept. 22, 1965, Ser. No. 489,351
Claims priority, application France, Sept. 25, 1964, 989,354, Patent 86,439
6 Claims. (Cl. 346—33)

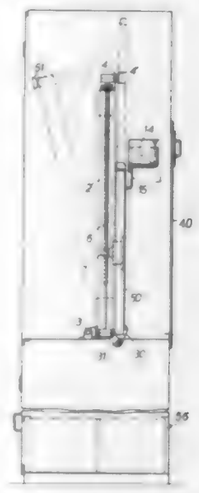
Travel recording apparatus for coal cutters or other mining machines, comprising a pulse generator incorporated in the coal cutter and generating two bits of logic initial information the values of which are a function of the position of the rotating shaft on the winch which is mechanically interconnected with the chain used to haul the coal cutter, and, above ground, a transit detector which receives these initial bits of information and delivers an addition or subtraction pulse according thereto, and a recording unit operated by said addition and subtraction pulses.

3,372,398
VARIABLE SPEED CHARACTER GENERATOR
John Lennox Nairn and Dale Eugene La Plante, Pasadena, Calif., assignors to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Jan. 21, 1966, Ser. No. 522,282
8 Claims. (Cl. 346—33)



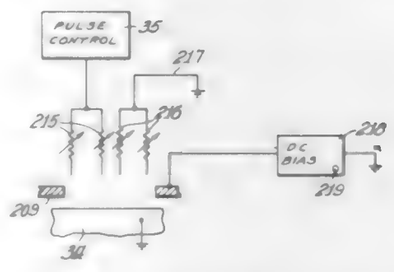
6. In a digital oscillograph in which the drive speed of the paper may be set at any one of a number of rates, a waveform generator for generating a plurality of waveforms in which the time scale can change with changes in speed of the paper to maintain fixed vertical size and shape of each character, comprising a first sawtooth generator, means for changing the frequency of the sawtooth generator with changes in the paper drive speed, a circuit generating a plurality of rectangular wave output signals having repetition frequencies that are multiples of the repetitive frequency of an input signal, means for driving the rectangular wave circuit in response to the output of the sawtooth generator, and means for combining portions of the outputs from the rectangular wave circuit and the sawtooth generator to generate a plurality of output signals having waveforms in which the slope of all leading and trailing edges are fixed by the slope of the sawtooth generator output.

3,372,399
RECORDER WITH PIVOTALLY MOUNTED CHART TRANSPORT UNIT
Arthur Ernest Mason, Riplingham, Brough, England, assignor to The Associated Portland Cement Manufacturers Limited, London, England, a corporation of the United Kingdom
Filed Oct. 4, 1966, Ser. No. 584,128
Claims priority, application Great Britain, Oct. 5, 1965, 42,195/65
7 Claims. (Cl. 346—49)



The guide frame and drive for a linearly movable flat chart support is pivotally mounted at an end remote from the bank of recording pens to permit movement of the entire assembly out of the plane of the pens both for replacement of the chart and return of the chart support to a starting position. Auxiliary motor means, normally declutched, is provided for rapid drive of the support back to its start position when the normal drive motor is declutched.

3,372,400
ELECTROSTATIC RECORDER WITH PLURAL ELECTRODES AND BIASED MASK
Herman Epstein, Philadelphia, and George A. Harris, Malvern, Pa., Edward M. Johnson, Detroit, Mich., and Thomas L. Thourson, Arlington Heights, Ill., assignors, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 3, 1962, Ser. No. 241,839
9 Claims. (Cl. 346—74)

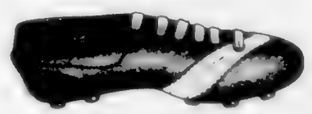


1. In a system for impressing electric charges on a dielectric medium in an information-denoting pattern, a charging station including an array comprising at least two pin electrodes positioned on the same side of said medium and having extremities disposed in substantially the same plane, which array is operable as energized to produce a discharge between the electrode extremities and provide a single cloud of said electric charges, occlusion means defining an aperture between said array and said medium, the solid portion of said occlusion means blocking certain of said electric charges and said aperture passing others of said electric charges to shape said cloud of electric charges and thus regulate the definition of the charged area deposited on said medium, means for applying a bias voltage to said occlusion means to assist in displacing said cloud of electric charges through said aperture to provide a charged area on said dielectric medium, and means for effecting relative movement between said array and said medium as said array is selectively energized to provide on the medium an information pattern comprising charged and non-charged areas.

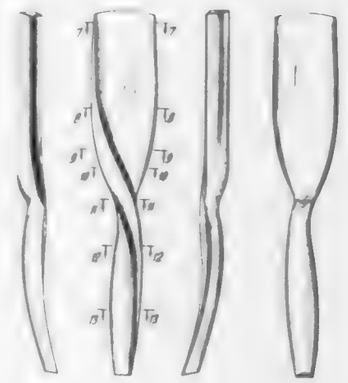
DESIGNS

MARCH 5, 1968

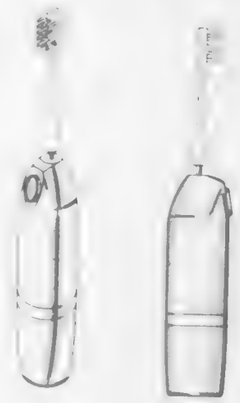
210,347
SOCCER SHOE
Paolo Riva, Via G. Verdi 3, Rudiano, Brescia, Italy
Filed Mar. 21, 1967, Ser. No. 6,326
Term of patent 14 years
(Cl. D2—311)



210,348
HAIRBRUSH BACK OR SIMILAR ARTICLE
Monte Levin, New York, N.Y., assignor to Empire Brushes, Inc., Port Chester, N.Y., a corporation of New York
Filed Apr. 25, 1967, Ser. No. 6,826
Term of patent 14 years
(Cl. D4—31)



210,349
ELECTRIC TOOTH BRUSH
Melvin H. Boldt, Glenview, Ill., assignor to Schick Electric Inc., Lancaster, Pa., a corporation of Delaware
Filed July 7, 1967, Ser. No. 7,731
Term of patent 14 years
(Cl. D9—2)



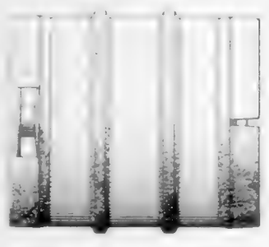
210,350
JUG
Brooks D. Fuerst, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed July 12, 1967, Ser. No. 7,773
Term of patent 14 years
(Cl. D9—38)

210,351
BOTTLE
Brooks D. Fuerst, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed July 12, 1967, Ser. No. 7,774
Term of patent 14 years
(Cl. D9—87)

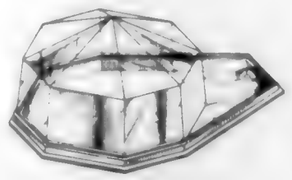
210,352
JAR
Brooks D. Fuerst, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Jan. 12, 1967, Ser. No. 5,391
Term of patent 14 years
(Cl. D9—96)

210,353
BOTTLE
Richard L. Platte, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich.
Filed Aug. 3, 1966, Ser. No. 3,318
Term of patent 14 years
(Cl. D9—147)

210,354
BEER KEG OR SIMILAR ARTICLE
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Feb. 4, 1966, Ser. No. 914
Term of patent 14 years
(Cl. D9—170)

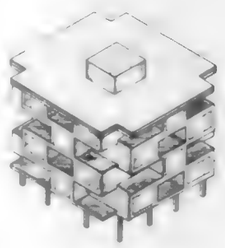


210,355
PACKAGE WITH TRANSPARENT TOP
Clarence M. Lay, Mission Viejo, Calif., assignor to Gibson Greeting Cards, Inc., Cincinnati, Ohio, a corporation of Delaware
Filed July 26, 1967, Ser. No. 7,989
Term of patent 14 years
(Cl. D9—192)



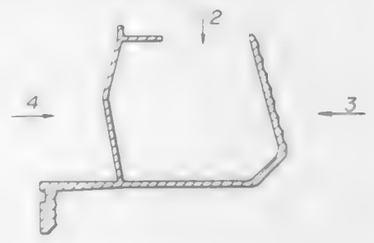
210,356
CROP DRYER
Raymond Sanders and Norman H. Sanders, Jr., both of R.D. 1, Greenwich Township, Huron County, Ohio 44839
Filed Aug. 31, 1966, Ser. No. 3,671
Term of patent 14 years
(Cl. D13—1)

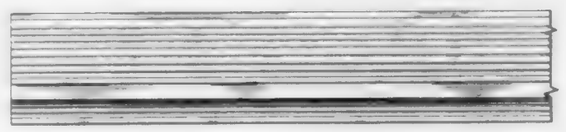
210,357
MODULAR BUILDING
Roy E. Anderson, 6404 Atlantic Ave., Ventnor, N.J. 08406
Filed Nov. 21, 1966, Ser. No. 4,744
Term of patent 14 years
(Cl. D13—1)



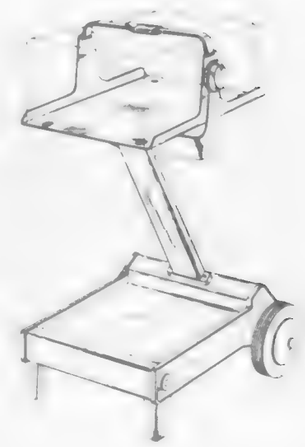
210,358
PARKING SPROCKET FOR TRAVEL TRAILERS
William H. Kessler, Grosse Pointe Park, Mich., assignor to Meathe, Kessler and Associates, Inc., Grosse Pointe, Mich., a corporation of Michigan
Filed Feb. 6, 1967, Ser. No. 5,697
Term of patent 14 years
(Cl. D13—1)

210,359
EXTRUDED FORM FOR HOLDING A PANEL EDGE
Donald R. Marsh, Kansas City, Mo., assignor to The Carter-Waters Corporation, Kansas City, Mo., a corporation of Missouri
Filed May 22, 1967, Ser. No. 7,208
Term of patent 14 years
(Cl. D13—6)

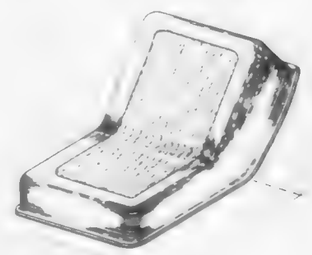




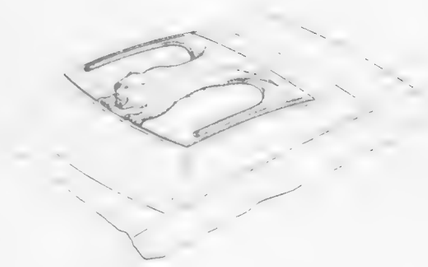
210,360
CART FOR TRANSPORTING A CATHODE RAY OSCILLOSCOPE
Jim Gerakos, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Feb. 27, 1967, Ser. No. 5,957
Term of patent 14 years
(Cl. D14—3)



210,361
AUTOMOBILE FOOT REST
John T. Clark, 400 Leland Place, Lansing, Mich. 48917
Filed July 20, 1967, Ser. No. 7,902
Term of patent 14 years
(Cl. D14—6)



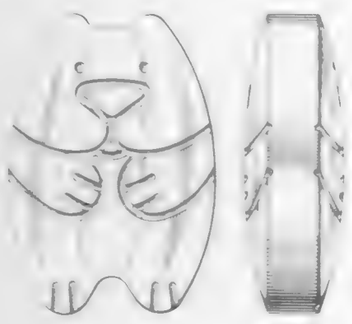
210,362
COMBINATION UTILITY HOOD AND LOUNGER OR THE LIKE
Frank W. Derenski, 11009 Morrison St., Los Angeles, Calif. 91601
Filed June 14, 1967, Ser. No. 7,469
Term of patent 14 years
(Cl. D14—27)



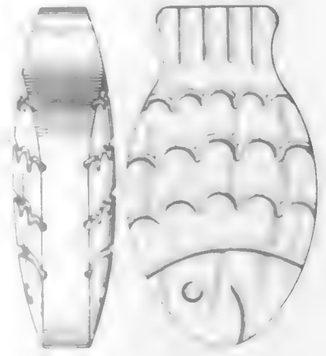
210,363
VEHICLE SEAT
Chester J. Barecki, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 4,809
Term of patent 14 years
(Cl. D15—8)

210,364
MULTIPLE SEATING UNIT FOR AN AUDITORIUM
William S. Lindberg, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Jan. 5, 1967, Ser. No. 5,319
Term of patent 14 years
(Cl. D15—8)

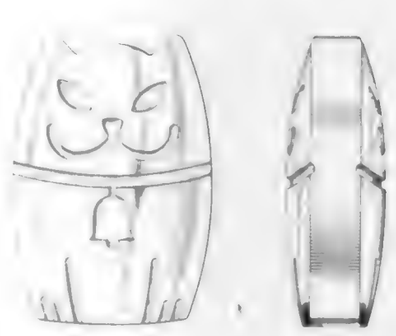
210,365
VITAMIN TABLET OR SIMILAR ARTICLE
Luther H. Kroninger, Jr., and Dean R. Straka, Evansville, Ind., assignors to Mead Johnson & Company, a corporation of Indiana
Filed Mar. 8, 1967, Ser. No. 6,121
Term of patent 14 years
(Cl. D16—3)



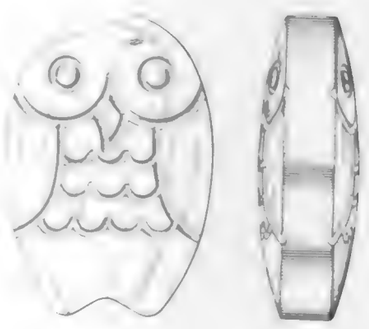
210,366
VITAMIN TABLET OR SIMILAR ARTICLE
Luther H. Kroninger, Jr., and Dean R. Straka, Evansville, Ind., assignors to Mead Johnson & Company, a corporation of Indiana
Filed Mar. 8, 1967, Ser. No. 6,124
Term of patent 14 years
(Cl. D16—3)



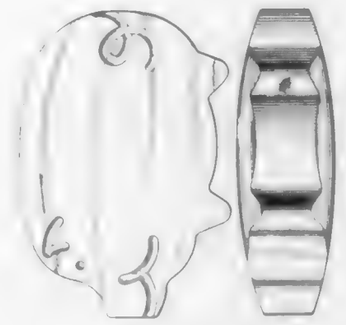
210,367
VITAMIN TABLET OR SIMILAR ARTICLE
Luther H. Kroninger, Jr., and Dean R. Straka, Evansville, Ind., assignors to Mead Johnson & Company, a corporation of Indiana
Filed Mar. 8, 1967, Ser. No. 6,125
Term of patent 14 years
(Cl. D16—3)



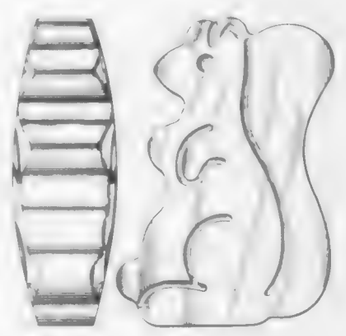
210,368
VITAMIN TABLET OR SIMILAR ARTICLE
Luther H. Kroninger, Jr., and Dean R. Straka, Evansville, Ind., assignors to Mead Johnson & Company, a corporation of Indiana
Filed Mar. 8, 1967, Ser. No. 6,133
Term of patent 14 years
(Cl. D16—3)



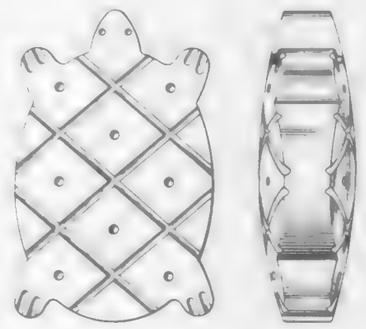
210,369
VITAMIN TABLET OR SIMILAR ARTICLE
Luther H. Kroninger, Jr., and Dean R. Straka, Evansville, Ind., assignors to Mead Johnson & Company, a corporation of Indiana
Filed Mar. 8, 1967, Ser. No. 6,134
Term of patent 14 years
(Cl. D16—3)



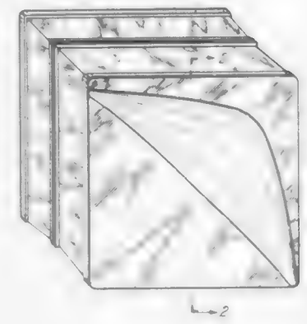
210,370
VITAMIN TABLET OR SIMILAR ARTICLE
Luther H. Kroninger, Jr., and Dean R. Straka, Evansville, Ind., assignors to Mead Johnson & Company, a corporation of Indiana
Filed Mar. 8, 1967, Ser. No. 6,135
Term of patent 14 years
(Cl. D16—3)



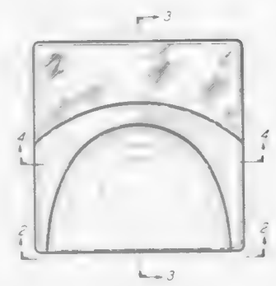
210,371
VITAMIN TABLET OR SIMILAR ARTICLE
Luther H. Kroninger, Jr., and Dean R. Straka, Evansville, Ind., assignors to Mead Johnson & Company, a corporation of Indiana
Filed Mar. 8, 1967, Ser. No. 6,136
Term of patent 14 years
(Cl. D16—3)



210,372
TRANSLUCENT BUILDING BLOCK OR THE LIKE
Donald J. Behnk, Allison Park, Pa., and Wesley E. Lerdon, Houston, Tex., assignors to Pittsburgh Corning Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 19, 1967, Ser. No. 6,756
Term of patent 14 years
(Cl. D18—2)



210,373
TRANSLUCENT BUILDING BLOCK OR THE LIKE
Donald J. Behnk, Allison Park, Pa., and Wesley E. Lerdon, Houston, Tex., assignors to Pittsburgh Corning Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 19, 1967, Ser. No. 6,759
Term of patent 14 years
(Cl. D18—2)

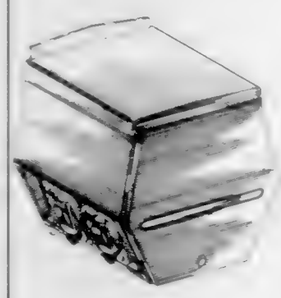


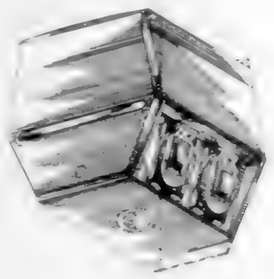
210,374
CARRYING HANDLE FOR A REFRIGERANT CYLINDER
Robert B. Schaefer, Malvern, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 8, 1967, Ser. No. 5,732
Term of patent 14 years
(Cl. D23—1)

210,375
FREE STANDING FIREPLACE
Stanley W. Volk, Los Angeles, Calif. (% Space Planner Co., 10213 Riverside Drive, North Hollywood, Calif. 91602)
Filed June 13, 1966, Ser. No. 2,663
Term of patent 14 years
(Cl. D23—97)

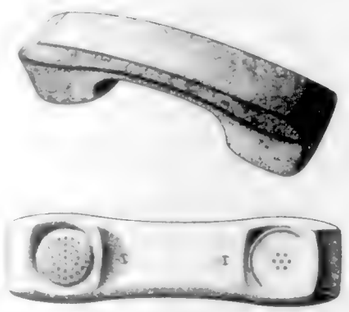
210,376
SOLAR SYSTEM MODEL
Edward R. Gaul, 8555 Trouville Ave., Playa Del Rey, Calif. 90291, and Joseph L. Gaul, 912 Longwood Ave., Los Angeles, Calif. 90019
Filed Dec. 16, 1966, Ser. No. 5,068
Term of patent 14 years
(Cl. D25—1)

210,377
ELECTRICAL DISTRIBUTION UNIT
Rodrigo Lopez-Fabrega, Norwalk, and Kenneth Van Dyck, Southport, Conn., assignors to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed June 29, 1966, Ser. No. 2,850
Term of patent 14 years
(Cl. D26—5)

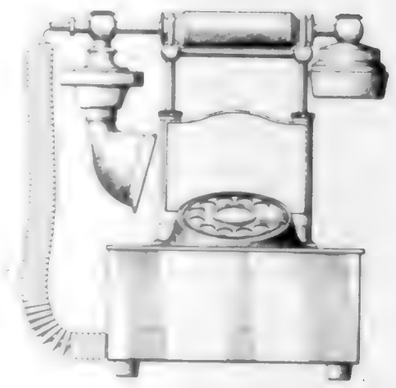


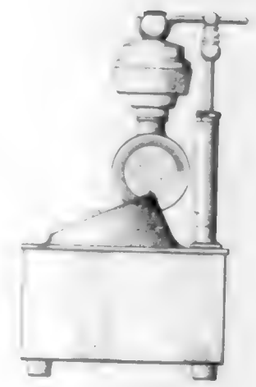


210,378
TELEPHONE HANDSET
George D. Perkins, Pasadena, Calif., assignor to American Telecommunication Corporation, Los Angeles, Calif., a corporation of California
Filed July 20, 1967, Ser. No. 7,903
Term of patent 14 years
(Cl. D26—14)

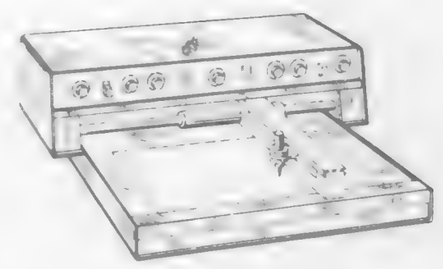


210,379
FRENCH CRADLE TELEPHONE
George D. Perkins, Pasadena, Calif., assignor to American Telecommunication Corporation, Los Angeles, Calif., a corporation of California
Filed July 20, 1967, Ser. No. 7,904
Term of patent 14 years
(Cl. D26—14)

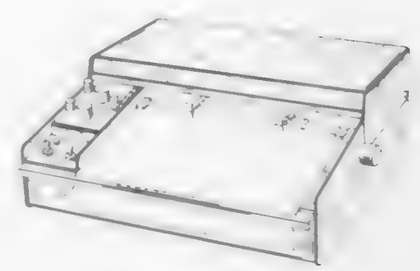




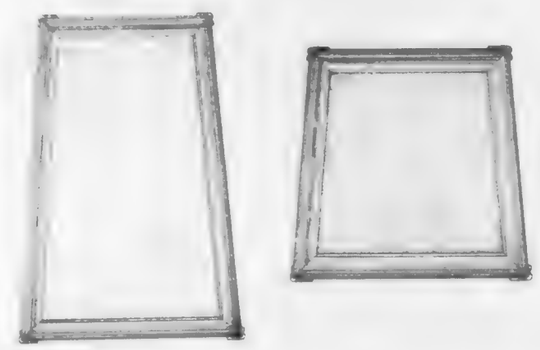
210,380
GRAPHIC RECORDER
Anthony P. H. Chan, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 7, 1967, Ser. No. 8,151
Term of patent 14 years
(Cl. D26—14)



210,381
GRAPHIC RECORDER
Anthony P. H. Chan, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 14, 1967, Ser. No. 8,265
Term of patent 14 years
(Cl. D26—14)



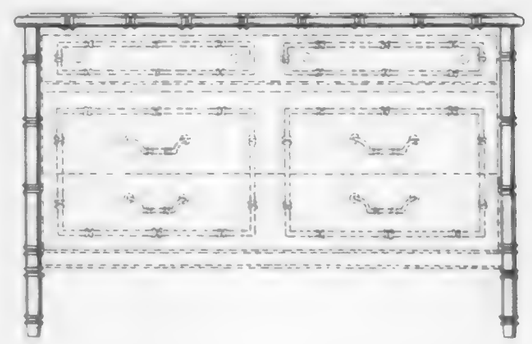
210,382
LOUDSPEAKER CABINET
Thomas Lane, Worth, Ill., assignor to The Muter Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 17, 1967, Ser. No. 8,304
Term of patent 14 years
(Cl. D26—14)



210,383
ILLUMINABLE WINDOW DECORATION
Charles S. La Montagne, 8526 Janis, Utica, Mich. 48087
Filed July 5, 1966, Ser. No. 2,931
Term of patent 14 years
(Cl. D29—1)

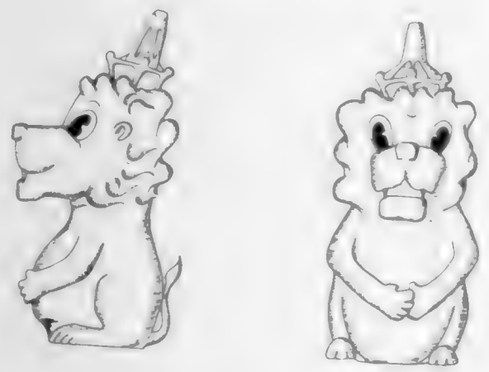
210,384
CHRISTMAS TREE ORNAMENT OR SIMILAR ARTICLE
Jack Burnbaum, 451 D St., Newton, Mass. 02110
Filed Oct. 24, 1966, Ser. No. 4,413
Term of patent 14 years
(Cl. D29—1)

210,385
FURNITURE CHEST
Richard G. Barr, Watchung, N.J., assignor to Thomasville Furniture Industries, Inc., Thomasville, N.C., a corporation of North Carolina
Filed Oct. 11, 1966, Ser. No. 4,240
Term of patent 14 years
(Cl. D33—6)



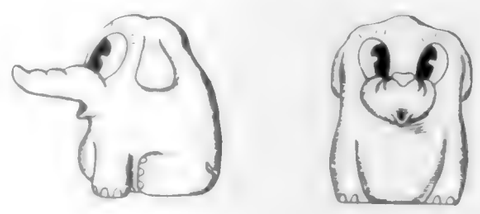
210,386
TABLE OR SIMILAR ARTICLE
Vladimir Kagan, 1225 Park Ave., New York, N.Y. 10028
Filed Mar. 10, 1967, Ser. No. 6,159
Term of patent 14 years
(Cl. D33—14)

210,387
TOY ANIMAL FIGURE OR THE LIKE
Kenneth L. Gillibrand, 13 Rudd Road, Illovo, Johannesburg, Transvaal, Republic of South Africa
Filed Feb. 15, 1966, Ser. No. 1,046
Term of patent 14 years
Claims priority, application Republic of South Africa Aug. 26, 1965
(Cl. D34—2)

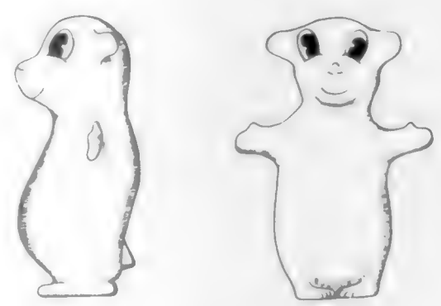


210,388
TOY ANIMAL FIGURE OR THE LIKE
Kenneth L. Gillibrand, 13 Rudd Road, Illovo, Johannesburg, Transvaal, Republic of South Africa
Filed Feb. 15, 1966, Ser. No. 1,050
Term of patent 14 years
Claims priority, application Republic of South Africa Aug. 26, 1965
(Cl. D34—2)

210,389
TOY ANIMAL FIGURE OR THE LIKE
Kenneth L. Gillibrand, 13 Rudd Road, Illovo, Johannesburg, Transvaal, Republic of South Africa
Filed Feb. 15, 1966, Ser. No. 1,051
Term of patent 14 years
Claims priority, application Republic of South Africa Aug. 26, 1965
(Cl. D34—2)



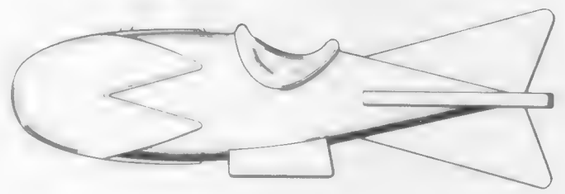
210,390
TOY ANIMAL FIGURE OR THE LIKE
Kenneth L. Gillibrand, 13 Rudd Road, Illovo, Johannesburg, Transvaal, Republic of South Africa
Filed Feb. 15, 1966, Ser. No. 1,052
Term of patent 14 years
Claims priority, application Republic of South Africa Aug. 26, 1965
(Cl. D34—2)



210,391
TOY ANIMAL FIGURE OR THE LIKE
Kenneth L. Gillibrand, 13 Rudd Road, Illovo, Johannesburg, Transvaal, Republic of South Africa
Filed Feb. 15, 1966, Ser. No. 1,053
Term of patent 14 years
Claims priority, application Republic of South Africa Aug. 26, 1965
(Cl. D34—2)

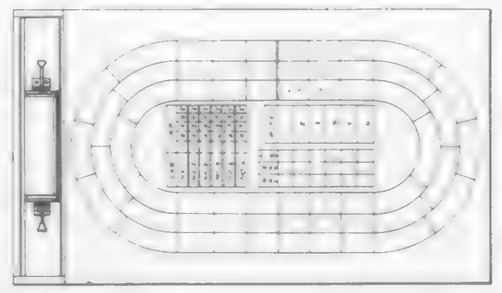
210,392
DOLL OR SIMILAR ARTICLE
Henrietta Valis, 3508 Mermaid Ave., Brooklyn, N.Y. 11224
Filed Dec. 6, 1965, Ser. No. 75
Term of patent 7 years
(Cl. D34—4)

210,393
ROCKET-SHAPED SEAT FOR PLAYGROUND APPARATUS
Robert S. Wormser, Hillsdale, Mich., assignor to Game-Time, Inc., Litchfield, Mich., a corporation of Michigan
Filed Aug. 17, 1966, Ser. No. 3,511
Term of patent 14 years
(Cl. D34—5)

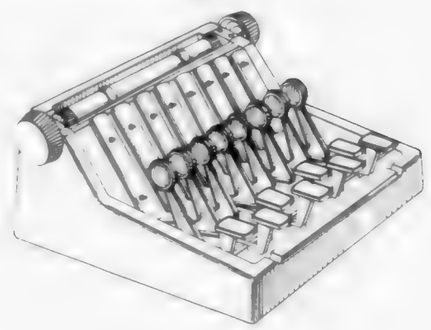


210,394
GOLF CLUB GRIP
John J. Baker, Laguna Hills, Calif., assignor to W. J. Voit Rubber Corporation, a corporation of California
Filed July 13, 1967, Ser. No. 7,795
Term of patent 14 years
(Cl. D34—5)

210,395
GAMEBOARD
William C. Royston, 2193 Meadowview Road, Sacramento, Calif. 95832
Filed July 21, 1967, Ser. No. 7,931
Term of patent 14 years
(Cl. D34—5)

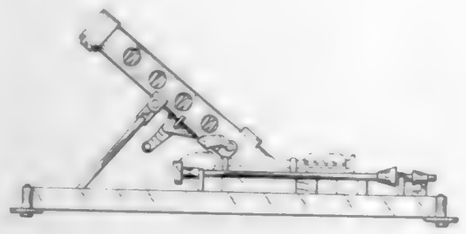


210,396
MUSICAL TYPEWRITER TOY
Robert I. Genin, Scarsdale, N.Y., assignor to Child Guidance Toys Inc., Bronx, N.Y., a corporation of New York
Filed Dec. 30, 1966, Ser. No. 5,246
Term of patent 14 years
(Cl. D34—15)



210,397
TOY WHEEL CENTER DISC
William H. Edwards, 25 Blythewood Drive, Greenville, S.C. 29607
Filed Jan. 3, 1967, Ser. No. 5,273
Term of patent 14 years
(Cl. D34—15)

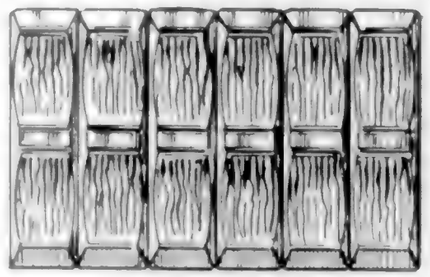
210,398
ROCKET-LAUNCHING TOY
John W. Ryan, Los Angeles, and John H. Northrop, La Canada, Calif., assignors to Mattel, Inc., a corporation of California
Filed Feb. 1, 1967, Ser. No. 5,659
Term of patent 14 years
(Cl. D34—15)



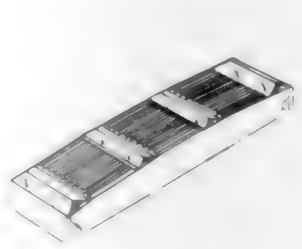
210,399
SOUP SKIMMER
Herman A. Wichmann, 4449 N. Menard Ave., Chicago, Ill. 60630
Filed July 26, 1967, Ser. No. 7,988
Term of patent 14 years
(Cl. D44—29)

210,400
EXPANSIBLE LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE
Karl C. Augenstein, Cranston, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Feb. 21, 1967, Ser. No. 5,891
Term of patent 14 years
(Cl. D45—4)

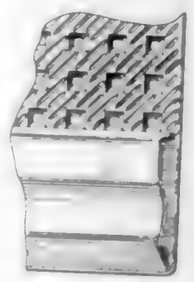
210,401
EXPANSIBLE LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE
Karl C. Augenstein, Cranston, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Feb. 21, 1967, Ser. No. 5,895
Term of patent 14 years
(Cl. D45—4)



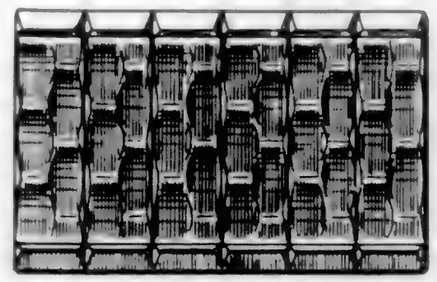
210,402
EXPANSIBLE LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE
Karl C. Augenstein, Cranston, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Feb. 21, 1967, Ser. No. 5,897
Term of patent 14 years
(Cl. D45—4)



210,403
EXPANSIBLE LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE
Murray L. Cowan, Norwood, Mass., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Mar. 1, 1967, Ser. No. 6,015
Term of patent 14 years
(Cl. D45—4)



210,404
EXPANSIBLE LINK CHAIN FOR A BRACELET OR SIMILAR ARTICLE
Murray L. Cowan, Norwood, Mass., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Mar. 1, 1967, Ser. No. 6,023
Term of patent 14 years
(Cl. D45—4)

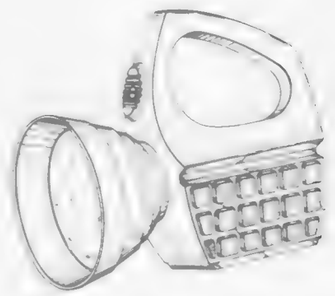


210,405
LOCKET
David Weissmann, Palos Verdes Estates, Calif., assignor to Mattel, Inc., a corporation of California
Filed Mar. 1, 1967, Ser. No. 6,021
Term of patent 14 years
(Cl. D45—15)

210,406
COMBINED LOCKET AND DOLL
David Weissmann, Palos Verdes Estates, Calif., assignor to Mattel, Inc., a corporation of California
Filed Mar. 1, 1967, Ser. No. 6,022
Term of patent 14 years
(Cl. D45—15)

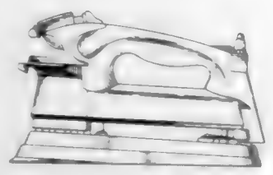
210,407
LIGHT FIXTURE
Raoul E. Rodriguez, 2521 N. Burling St., Chicago, Ill. 60614
Filed Nov. 6, 1967, Ser. No. 9,287
Term of patent 14 years
(Cl. D48—20)

210,408
ELECTRIC BATTERY LANTERN
Ian A. Tesar, Eastchester, N.Y., assignor to Herbert J. Ashe, % The H. J. Ashe Company, Inc., South Norwalk, Conn.
Filed Dec. 13, 1966, Ser. No. 5,023
Term of patent 14 years
(Cl. D48—24)

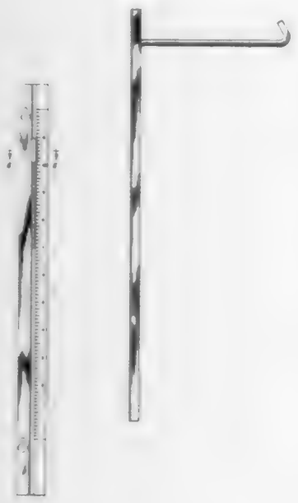


210,409
DENTURE CLEANING UNIT
Melvin H. Boldt, Glenview, Ill., assignor to Schick Electric Inc., Lancaster, Pa., a corporation of Delaware
Filed July 7, 1967, Ser. No. 7,732
Term of patent 14 years
(Cl. D49—1)

210,410
ELECTRIC IRON
Gordon W. Florian, Fairfield, Conn., assignor to Proctor-Silex Incorporated, Philadelphia, Pa., a corporation of New York
Filed Aug. 10, 1967, Ser. No. 8,214
Term of patent 14 years
(Cl. D49—6)

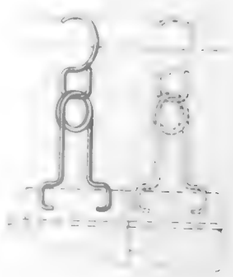


210,411
HEIGHT MEASURING STICK
Edward F. Joyce 3rd, 205 Rockaway St., Boonton, N.J. 07005
Filed June 5, 1967, Ser. No. 7,360
Term of patent 3½ years
(Cl. D52—6)



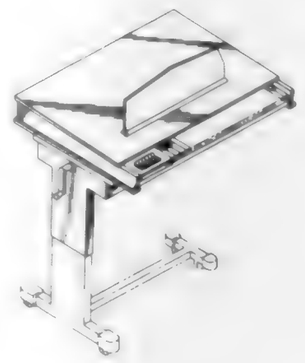
210,412
COMBINATION SPARE TIRE AND WHEEL CARRIER ASSEMBLY
Frank Cooper, 820 W. Lawrence, Charlotte, Mich. 48813
Filed Nov. 21, 1966, Ser. No. 4,756
Term of patent 7 years
(Cl. D54—1)

210,413
HANGER FOR BOOTS OR THE LIKE
George J. Ducharme, 3731 Griffith View Drive, Los Angeles, Calif. 90039
Filed Apr. 10, 1967, Ser. No. 6,601
Term of patent 7 years
(Cl. D54—1)

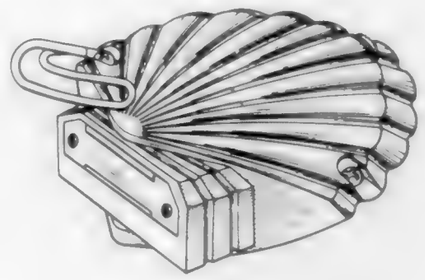


210,414
SWITCH COVER AND WIRE CONDUIT UNIT FOR A WASTE DISPOSER
James H. Enright and Charles A. Wicke, Racine, Wis., assignors to In-Sink-Erator Manufacturing Company, Racine, Wis., a corporation of Wisconsin
Filed Dec. 12, 1966, Ser. No. 4,996
Term of patent 14 years
(Cl. D55—1)

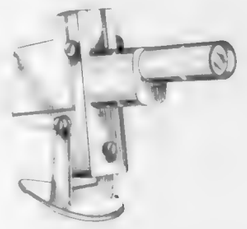
210,415
KEYBOARD INSTRUMENT
Jerome Markowitz, Allentown, Pa., assignor to Allen Organ Co., Macumgie, Pa., a corporation of Pennsylvania
Filed Apr. 22, 1966, Ser. No. 1,983
Term of patent 14 years
(Cl. D56—2)



210,416
RADIO RECEIVER OR SIMILAR ARTICLE
Hiloshi Hitsuoka, 107 Ogikashi, Oaza, Saitama-ken, Kawagoe-shi, Japan
Filed Jan. 20, 1966, Ser. No. 755
Claims priority, application Japan July 31, 1965
Term of patent 14 years
(Cl. D56—4)

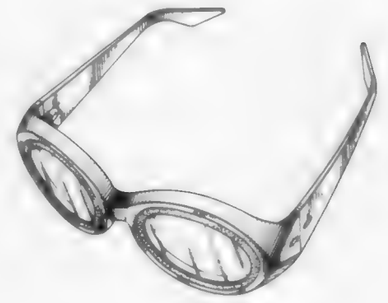


210,417
VISUAL ACUITY SLIDE PROJECTOR
Paul A. Hoogesteger, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Aug. 18, 1966, Ser. No. 3,525
Term of patent 14 years
(Cl. D57—1)

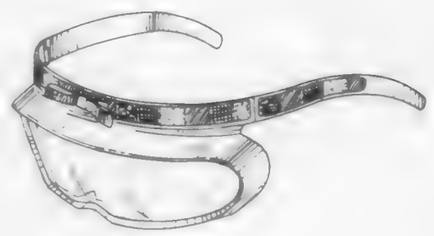


210,418
SPECTACLE FRAME OR THE LIKE
Jack Bloch, Leominster, and Vitalino Marchi, Concord, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 5,230
Term of patent 14 years
(Cl. D57—1)

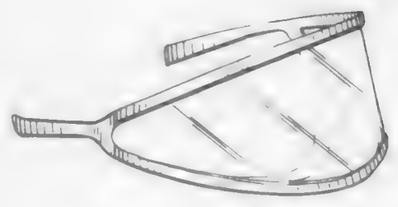
210,419
PAIR OF SPECTACLES
Jack Bloch, Leominster, and Vitalino Marchi, Concord, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 5,231
Term of patent 14 years
(Cl. D57—1)



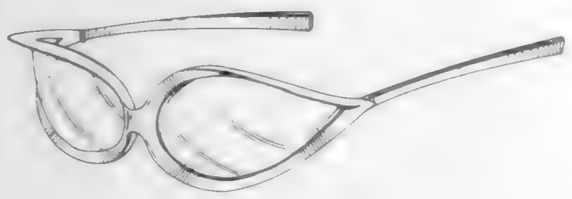
210,420
PAIR OF SUNGLASSES OR THE LIKE
Atherton R. Mitchell, Dillon Beach, Calif., assignor to Renauld International, Ltd., Burlingame, Calif., a corporation of Delaware
Filed Jan. 31, 1967, Ser. No. 5,627
Term of patent 14 years
(Cl. D57—1)



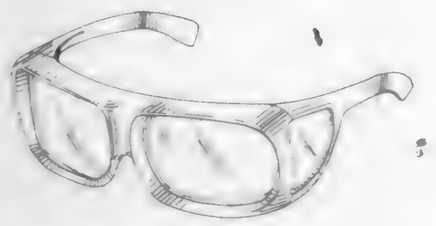
210,421
PAIR OF SUNGLASSES OR THE LIKE
Atherton R. Mitchell, Dillon Beach, Calif., assignor to Renauld International, Ltd., Burlingame, Calif., a corporation of Delaware
Filed Jan. 31, 1967, Ser. No. 5,628
Term of patent 14 years
(Cl. D57—1)



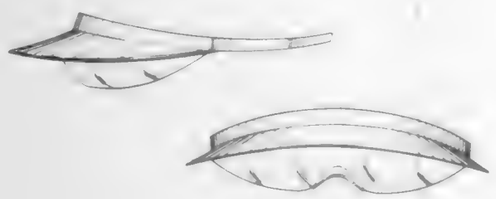
210,422
PAIR OF SUNGLASSES OR THE LIKE
Atherton R. Mitchell, Dillon Beach, Calif., assignor to Renauld International, Ltd., Burlingame, Calif., a corporation of Delaware
Filed Jan. 31, 1967, Ser. No. 5,631
Term of patent 14 years
(Cl. D57—1)



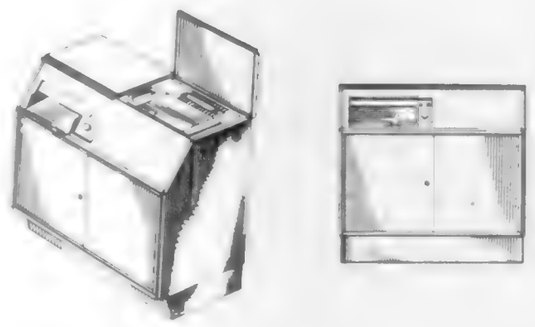
210,423
PAIR OF SUNGLASSES OR THE LIKE
Atherton R. Mitchell, Dillon Beach, Calif., assignor to Renauld International, Ltd., Burlingame, Calif., a corporation of Delaware
Filed Jan. 31, 1967, Ser. No. 5,632
Term of patent 14 years
(Cl. D57—1)



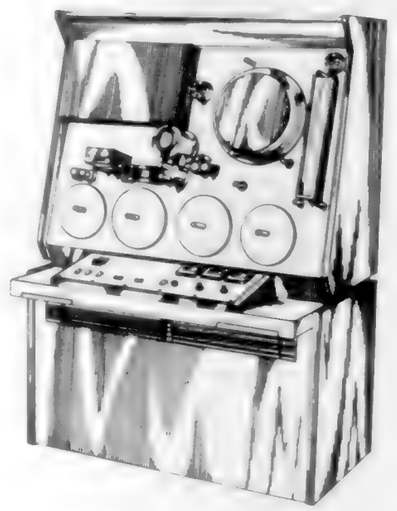
210,424
PAIR OF SUNGLASSES OR THE LIKE
Atherton R. Mitchell, Dillon Beach, Calif., assignor to Renauld International, Ltd., Burlingame, Calif., a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 6,801
Term of patent 14 years
(Cl. D57—1)



210,425
PHOTOCOPIER OR SIMILAR ARTICLE
Charles Jerabek, Bayshore, N.Y., assignor to Copia Manufacturing Corporation, Garden City, N.Y. a corporation
Filed Apr. 27, 1966, Ser. No. 2,041
Term of patent 14 years
(Cl. D61—1)

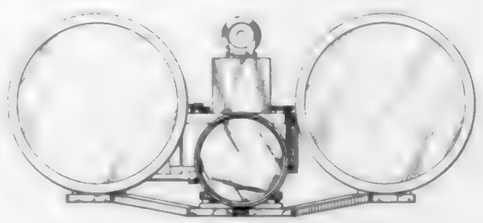


210,426
APPARATUS FOR EXPOSING AND DEVELOPING LIGHT SENSITIVE PHOTOGRAPHIC FILM
Roy E. Hurtig, Monte Sereno, Calif., assignor to Kalvar Corporation, New Orleans, La., a corporation of Louisiana
Filed Dec. 15, 1966, Ser. No. 5,053
Term of patent 14 years
(Cl. D61—1)

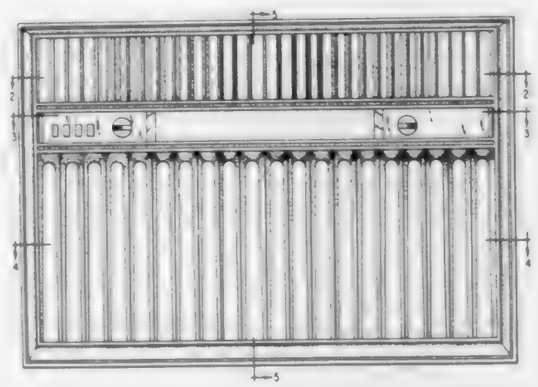


210,427
ELECTROSTATIC COPYING MACHINE
Joel W. Bravo, Montrose, Pa., and Paul Matwey, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 20, 1967, Ser. No. 5,500
Term of patent 14 years
(Cl. D61—1)

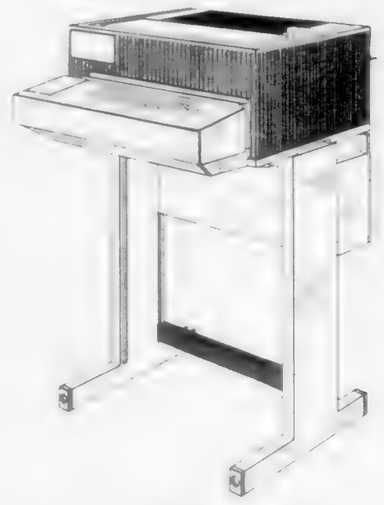
210,428
CAMERA FOR INFRARED PHOTOGRAPHY OR SIMILAR ARTICLE
Tohru Karikawa, Tokyo, Japan, assignor to Asahi Kogaku Kogyo Kabushiki Kaisha, Itabashi-ku, Tokyo-to, Japan
Filed Jan. 27, 1967, Ser. No. 5,585
Term of patent 14 years
Claims priority, application Japan Aug. 16, 1966
(Cl. D61—1)



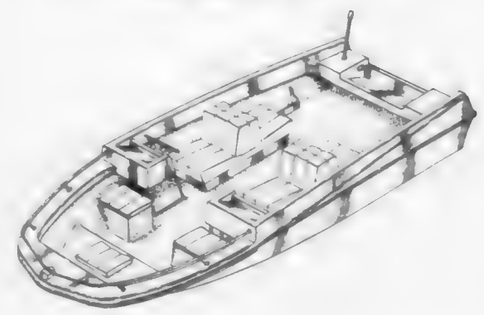
210,429
AIR CONDITIONING CABINET FRONT OR SIMILAR ARTICLE
Joseph B. Federico, Rochester, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 6,024
Term of patent 3½ years
(Cl. D23—141)



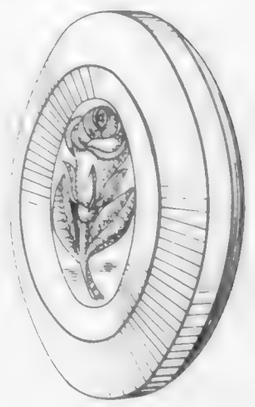
210,430
TELEPRINTER CONSOLE
Ettore Sottsass, Milan, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Dec. 16, 1966, Ser. No. 5,072
Term of patent 14 years
Claims priority, application Italy June 27, 1966
(Cl. D64—11)



210,431
BOAT
William L. Raschke, Box 576, Three Rivers, Tex. 78071
Filed June 20, 1967, Ser. No. 7,529
Term of patent 14 years
(Cl. D71—1)



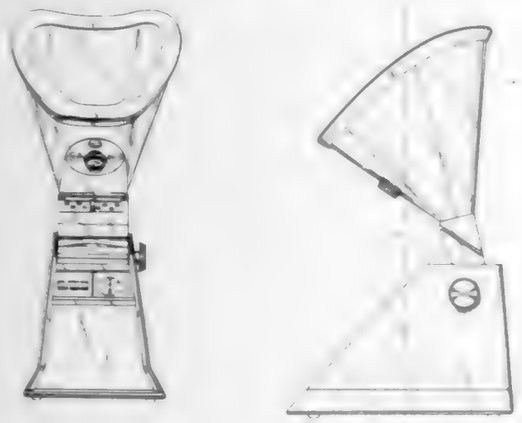
210,432
BAR OF SOAP OR SIMILAR ARTICLE
Victor Koenigsberg, Franklin Square, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Mar. 9, 1967, Ser. No. 6,147
Term of patent 14 years
(Cl. D73—1)



210,433
INK MARKING INSTRUMENT OR THE LIKE
Noboru Wakai, Tokyo, Japan, assignor to Dai Nihon Bungu Co., Ltd., Tokyo, Japan, a corporate body of Japan
Filed Aug. 12, 1966, Ser. No. 3,457
Term of patent 14 years
Claims priority, application Japan Feb. 15, 1966
(Cl. D74—17)

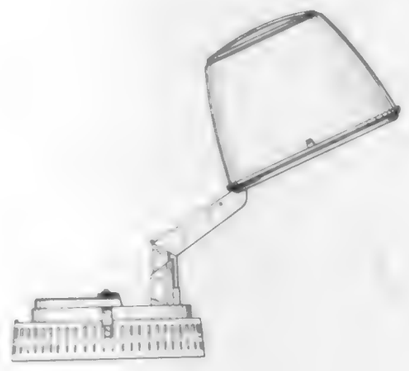
210,434
GARMENT HANGER
John H. Batts, Grand Rapids, Mich., assignor to John Thomas Batts, Inc., Zeeland, Mich., a corporation of Michigan
Filed Feb. 13, 1967, Ser. No. 5,815
Term of patent 14 years
(Cl. D80—8)

210,435
FACIAL VAPORIZER
Melvin H. Boldt, Glenview, Ill., assignor to Schick Electric Inc., Lancaster, Pa., a corporation of Delaware
Filed July 7, 1967, Ser. No. 7,728
Term of patent 14 years
(Cl. D83—1)



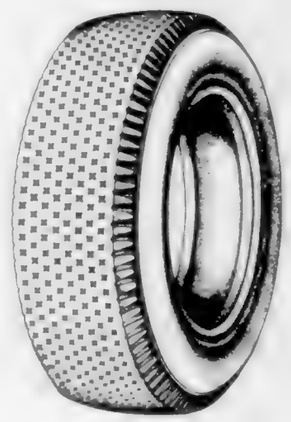
210,436
HAIR ROLLER
Patrick R. Jeronimus, Park Forest, Ill., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Nov. 28, 1966, Ser. No. 4,835
Term of patent 14 years
(Cl. D86—10)

210,437
HAIR DRYER OR SIMILAR ARTICLE
Melvin H. Boldt, Glenview, Ill., assignor to Schick Electric Inc., Lancaster, Pa., a corporation of Delaware
Filed May 18, 1967, Ser. No. 7,175
Term of patent 14 years
(Cl. D86—10)

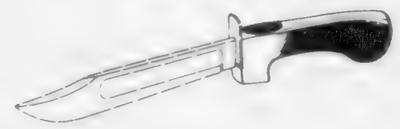


210,438
TIRE
Raymond P. Hawkinson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 25, 1966, Ser. No. 1,995
Term of patent 14 years
(Cl. D90—20)

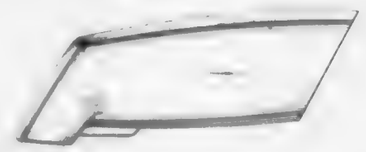
210,439
TIRE
Horace V. Barlow, Roma, Hampton-on-the-Hill, Warwick, England, assignor to Dunlop Rubber Company, Limited, Erdington, England, a British corporation
Filed July 7, 1966, Ser. No. 2,981
Term of patent 14 years
Claims priority, application Great Britain Jan. 27, 1966
(Cl. D90—20)



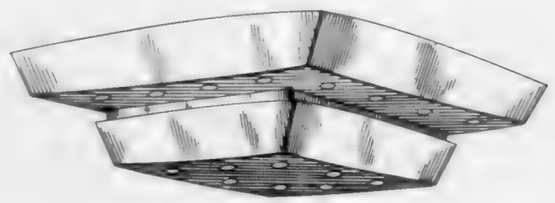
210,440
KNIFE
John W. Latham, London, England, assignor to Wilkinson Sword Limited, London, England, a British company
Filed Feb. 3, 1967, Ser. No. 5,685
Term of patent 14 years
(Cl. D95—3)



210,441
ELECTRIC SCISSORS
Henry Dreyfuss, South Pasadena, Calif., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed July 24, 1967, Ser. No. 7,956
Term of patent 14 years
(Cl. D95—5)



210,442
COMBINED SCOREBOARD AND SIGN
Jacques Y. Foster, Des Moines, and Theron E. McCullough, Altoona, Iowa, assignors to Fair-Play Mfg. Co., Des Moines, Iowa, a corporation of Iowa
Filed July 25, 1967, Ser. No. 7,976
Term of patent 14 years
(Cl. D96—12)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 5TH DAY OF MARCH, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Albrecht, Robert J.: *See*—
Griner, Arthur J., and Albrecht. Re. 26,357.
Becka, Michael M.: *See*—
Kamborian, Jacob S., Becka, and Dunlap. Re. 26,355.
Chevron Research Co.: *See*—
White, Robert J. Re. 26,358.
Dunlap, Robert B.: *See*—
Kamborian, Jacob S., Becka, and Dunlap. Re. 26,355.
Ferro Stamping Co.: *See*—
Pickles, Joseph. Re. 26,356.
Griner, Arthur J., and R. J. Albrecht, to National Biscuit Co. Metering apparatus. Re. 26,357, 3–5–68, Cl. 53—26.
Kamborian, Jacob S., M. M. Becka, and R. B. Dunlap; said Becka and said Dunlap, assors. to said Kamborian. Lasting machine having cooled clamp. Re. 26,355, 3–5–68, Cl. 12—10.5.
National Biscuit Co.: *See*—
Griner, Arthur J., and Albrecht, Re. 26,357.
Pagano, Ralph R. Wearing apparel with body-conforming inner panel. Re. 26,360, 3–5–68, Cl. 128—519.
Pickles, Joseph, to Ferro Stamping Co. Window lift gear. Re. 26,356, 3–5–68, Cl. 74—411.
Thompson, Fred. Truck unloading structure. Re. 26,359, 3–5–68, Cl. 214—83.2.
White, Robert J., to Chevron Research Co. Single-stage hydrocracking process with a nitrogen containing feed stock. Re. 26,358, 3–5–68, Cl. 208—111.

LIST OF PLANT PATENTEES

Asper, James H., to Select Camellias, Inc. Camellia plant. 2,798, 3–5–68, Cl. 62.
Carlton Rose Nurseries, Inc.: *See*—
De Ruiter, Gijesbert, 2,799.
De Ruiter, Gijesbert, to Carlton Rose Nurseries, Inc. Rose plant. 2,799, 3–5–68, Cl. 22.
Preuss, Charles. Peach tree. 2,797, 3–5–68, Cl. 43.
Select Camellias, Inc.: *See*—
Asper, James H. 2,798.

LIST OF DESIGN PATENTEES

American Seating Co.: *See*—
Barecki, Chester J. 210,363.
Lindberg, William S. 210,364.
American Telecommunication Corp.: *See*—
Perkins, George D. 210,378.
Perkins, George D. 210,379.
Anderson, Roy E. Modular building. 210,357, 3–5–68, Cl. D13—1.
Asahi Kogaku Kogyo Kabushiki Kaisha: *See*—
Karikawa, Tohru. 210,428.
Ashe, Herbert J.: *See*—
Tesar, Ian A. 210,408.
Augenstein, Karl C., to Textron, Inc. Expansible link chain for a bracelet or similar article. 210,400, 3–5–68, Cl. D45—4.
Augenstein, Karl C., to Textron, Inc. Expansible link chain for a bracelet or similar article. 210,401, 3–5–68, Cl. D45—4.
Augenstein, Karl C., to Textron, Inc. Expansible link chain for a bracelet or similar article. 210,402, 3–5–68, Cl. D45—4.
Baker, John J., to W. J. Volt Rubber Corp. Golf club grip. 210,394, 3–5–68, Cl. D34—5.
Barecki, Chester J., to American Seating Co. Vehicle seat. 210,363, 3–5–68, Cl. D15—8.
Barlow, Horace V., to Dunlop Rubber Co. Ltd. Tire. 210,439, 3–5–68, Cl. D90—20.
Barr, Richard G., to Thomasville Furniture Industries, Inc. Furniture chest. 210,385, 3–5–68, Cl. D33—6.
Batts, John H., to John Thomas Batts, Inc. Garment hanger. 210,434, 3–5–68, Cl. D80—8.
Batts, John Thomas, Inc.: *See*
Batts, John H. 210,434.
Bausch & Lomb, Inc.: *See*—
Hoogesteger, Paul A. 210,417.
Behnk, Donald J., and W. E. Lerdon, to Pittsburgh Corning Corp. Translucent building block or the like. 210,372. 3–5–68, Cl. D18—2.
Behnk, Donald J., and W. E. Lerdon, to Pittsburgh Corning Corp. Translucent building block or the like. 210,373, 3–5–68, Cl. D18—2.
Bloch, Jack, and V. Marchi, to Foster Grant Co., Inc. Spectacle frame or the like. 210,418, 3–5–68, Cl. D57—1.
Bloch, Jack, and V. Marchi, to Foster Grant Co., Inc. Pair of spectacles. 210,419, 3–5–68, Cl. D57—1.
Boldt, Melvin H., to Schick Electric Inc. Electric tooth brush. 210,349, 3–5–68, Cl. D9—2.
Boldt, Melvin H., to Schick Electric, Inc. Denture cleaning unit. 210,409, 3–5–68, Cl. D49—1.
Boldt, Melvin H., to Schick Electric Inc. Facial vaporizer. 210,435, 3–5–68, Cl. D83—1.
Boldt, Melvin H., to Schick Electric Inc. Hair dryer or similar article. 210,437, 3–5–68, Cl. D86—10.
Bravo, Joel W., and P. Matwey, to General Aniline & Film Corp. Electrostatic copying machine. 210,427, 3–5–68, Cl. D61—1.
Burnbaum, Jack. Christmas tree ornament or similar article. 210,384, 3–5–68, Cl. D29—1.
Carrier Corp.: *See*—
Federico, Joseph B. 210,429.
Carter-Waters Corp., The: *See*—
Marsh, Donald R. 210,359.
Chan, Anthony P. H., to Varian Associates. Graphic recorder. 210,380, 3–5–68, Cl. D26—14.
Chan, Anthony P. H., to Varian Associates. Graphic recorder. 210,381, 3–5–68, Cl. D26—14.
Child Guidance Toys, Inc.: *See*—
Genin, Robert I. 210,396.
Clark, John T. Automobile foot rest. 210,361, 3–5–68, Cl. D14—6.
Colgate-Palmolive Co.: *See*—
Koenigsberg, Victor. 210,432.
Cooper, Frank. Combination spare tire and wheel carrier assembly. 210,412, 3–5–68, Cl. D54—1.
Copia Mfg. Corp.: *See*—
Jerabek, Charles. 210,425.
Cornelius Co., The: *See*—
Cornelius, Richard T. 210,354.
Cornelius, Richard T., to The Cornelius Co. Beer keg, or similar article. 210,354, 3–5–68, Cl. D9—170.
Cowan, Murray L., to Textron, Inc. Expansible link chain for a bracelet or similar article. 210,403, 3–5–68, Cl. D45—4.
Cowan, Murray L., to Textron, Inc. Expansible link chain for a bracelet or similar article. 210,404, 3–5–68, Cl. D45—4.
Dai Nihon Bungu Co., Ltd.: *See*—
Wakai, Noboru. 210,433.
Derenski, Frank W. Combination utility hood and lounger. 210,362, 3–5–68, Cl. D14—27.
Dreyfuss, Henry, to The Singer Co. Electric scissors. 210,441. 3–5–68, Cl. D95—5.
Ducharme, George J. Hanger for boots or the like. 210,413. 3–5–68, Cl. D54—1.
Dunlop Rubber Co. Ltd.: *See*—
Barlow, Horace V. 210,439.
Edwards, William H. Toy wheel center disc. 210,397, 3–5–68, Cl. D34—15.
Empire Brushes, Inc.: *See*—
Levin, Monte. 210,348.
Enright, James H., and C. A. Wicke, to In-Sink-Erator Mfg. Co. Switch cover and wire conduit unit for a waste disposer. 210,414, 3–5–68, Cl. D55—1.
Fair-Play Mfg. Co.: *See*—
Foster, Jacques Y., and McCullough. 210,442.
Federico, Joseph B., to Carrier Corp. Air conditioning cabinet front or similar article. 210,429, 3–5–68, Cl. D62—4.
Florian, Gordon W., to Proctor-Silex, Inc. Electric iron. 210,410, 3–5–68, Cl. D49—6.
Foster Grant Co., Inc.: *See*—
Bloch, Jack, and Marchi. 210,418.
Bloch, Jack, and Marchi. 210,419.
Foster, Jacques Y., and T. E. McCullough, to Fair-Play Mfg. Co. Combined scoreboard and sign. 210,442, 3–5–68, Cl. D96—12.
Fuerst, Brooks D., to Owens-Illinois, Inc. Jug. 210,350. 3–5–68, Cl. D9—38.
Fuerst, Brooks D., to Owens-Illinois, Inc. Bottle. 210,351. 3–5–68, Cl. D9—87.
Fuerst, Brooks D., to Owens-Illinois, Inc. Jar. 210,352. 3–5–68, Cl. D9—96.
Game-Time, Inc.: *See*—
Wormser, Robert S. 210,393.
Gaul, Edward R. and J. L. Solar system model. 210,376, 3–5–68, Cl. D25—1.
Gaul, Joseph L.: *See*—
Gaul, Edward R., and Gaul. 210,376.

General Aniline & Film Corp. : *See*—
Bravo, Joel W., and Matwey. 210,427.
Genin, Robert I., to Child Guidance Toys, Inc. Musical type writer toy. 210,396. 3-5-68, Cl. D34—15.
Gerakos, Jim, to Tektronix, Inc. Cart for transporting a cathode ray oscilloscope. 210,360, 3-5-68, Cl. D14—3.
Gibson Greeting Cards, Inc. : *See*—
Lay, Clarence M. 210,355.
Gillette Co., The : *See*—
Jeronimus, Patrick R. 210,436.
Gillibrand, Kenneth L. Toy animal figure or the like. 210,387, 3-5-68, Cl. D34—2.
Gillibrand, Kenneth L. Toy animal figure or the like. 210,388, 3-5-68, Cl. 34—2.
Gillibrand, Kenneth L. Toy animal figure or the like. 210,389. 3-5-68, Cl. D34—2.
Gillibrand, Kenneth L. Toy animal figure or the like. 210,390. 3-5-68, Cl. D34—2.
Gillibrand, Kenneth L. Toy animal figure or the like. 210,391. 3-5-68, Cl. D34—2.
Hawkinson, Paul E., Co. : *See*—
Hawkinson, Raymond P. 210,438.
Hawkinson, Raymond P., to Paul E. Hawkinson Co. Tire. 210,438, 3-5-68, Cl. D90—20.
Hitsuoka, Hiloshi. Radio receiver or similar article. 210,416. 3-5-68, Cl. D56—4.
Hoogesteger, Paul A., to Bausch & Lomb, Inc. Visual acuity slide projector. 210,417. 3-5-68, Cl. D57—1.
Hoover Ball and Bearing Co. : *See*—
Platte, Richard L. 210,353.
Hubbell, Harvey, Inc. : *See*—
Lopez-Fabrega, Rodrigo, and Van Dyck. 210,377.
Hurtig, Roy E., to Kalvar Corp. Apparatus for exposing and developing light sensitive photographic film. 210,426. 3-5-68, Cl. D61—1.
In-Sink-Erator Mfg. Co. : *See*—
Enright, James H., and Wicke. 210,414.
Jerabek, Charles, to Copia Mfg. Corp. Photocopier or similar article. 210,425, 3-5-68, Cl. D61—1.
Jeronimus, Patrick R., to The Gillette Co. Hair roller. 210,436, 3-5-68, Cl. D86—10.
Joyce, Edward F., III. Height measuring stick. 210,411. 3-5-68, Cl. D52—6.
Kagan, Vladimir. Table or similar article. 210,386, 3-5-68, Cl. D33—14.
Kalvar Corp. : *See*—
Hurtig, Roy E. 210,426.
Karikawa, Tohru, to Asahi Kogaku Kogyo Kabushiki Kaisha. Camera for infrared photography or similar article. 210,428. 3-5-68, Cl. D61—1.
Kessler, William H., to Meathe, Kessler and Associates, Inc. Parking sprocket for travel trailers. 210,358, 3-5-68, Cl. D13—1.
Koenigsberg, Victor, to Colgate-Palmolive Co. Bar of soap or similar article. 210,432, 3-5-68, Cl. D73—1.
Kroninger, Luther H., Jr., and D. R. Straka, to Mead Johnson & Co. Vitamin tablet or similar article. 210,365, 3-5-68, Cl. D16—3.
Kroninger, Luther H., Jr., and D. R. Straka, to Mead Johnson & Co. Vitamin tablet or similar article. 210,366, 3-5-68, Cl. D16—3.
Kroninger, Luther H., Jr., and D. R. Straka, to Mead Johnson & Co. Vitamin tablet or similar article. 210,367, 3-5-68, Cl. D16—3.
Kroninger, Luther H., Jr., and D. R. Straka, to Mead Johnson & Co. Vitamin tablet or similar article. 210,368, 3-5-68, Cl. D16—3.
Kroninger, Luther H., Jr., and D. R. Straka, to Mead Johnson & Co. Vitamin tablet or similar article. 210,369, 3-5-68, Cl. D16—3.
Kroninger, Luther H., Jr., and D. R. Straka, to Mead Johnson & Co. Vitamin tablet or similar article. 210,370, 3-5-68, Cl. D16—3.
Kroninger, Luther H., Jr., and D. R. Straka, to Mead Johnson & Co. Vitamin tablet or similar article. 210,371, 3-5-68, Cl. D16—3.
La Montagne, Charles S. Illuminable window decoration. 210,383, 3-5-68, Cl. D29—1.
Lane, Thomas, to The Muter Co. Loudspeaker cabinet. 210,382, 3-5-68, Cl. D26—14.
Latham, John W., to Wilkinson Sword Ltd. Knife. 210,440. 3-5-68, Cl. D95—3.
Lay, Clarence M., to Gibson Greeting Cards, Inc. Package with transparent top. 210,355, 3-5-68, Cl. D9—192.
Lerdon, Wesley E. : *See*—
Behnk, Donald J., and Lerdon. 210,372.
Lerdon, Wesley E. : *See*—
Behnk, Donald J., and Lerdon. 210,373.
Levin, Monte, to Empire Brushes, Inc. Hairbrush back or similar article. 210,348, 3-5-68, Cl. D4—81.
Lindberg, William S., to American Seating Co. Multiple seating unit for an auditorium. 210,364, 3-5-68, Cl. D15—8.
Lopez-Fabrega, Rodrigo, and K. Van Dyck, to Harvey Hubbell, Inc. Electrical distribution unit. 210,377, 3-5-68, Cl. D26—5.
Marchi, Vitalino : *See*—
Bloch, Jack, and Marchi. 210,418.
Marchi, Vitalino : *See*—
Bloch, Jack, and Marchi. 210,419.
Markowitz, Jerome. Keyboard instrument. 210,415, 3-5-68, Cl. D56—2.
Marsh, Donald R., to The Carter-Waters Corp. Extruded form for holding a panel edge. 210,359, 3-5-68, Cl. D13—6.
Mattel, Inc. : *See*—
Ryan, John W., and Northrop. 210,398.
Weissmann, David. 210,405.
Weissmann, David. 210,406.
Matwey, Paul : *See*—
Bravo, Joel W., and Matwey. 210,427.
McCullough, Theron E. : *See*—
Foster, Jacques Y., and McCullough. 210,442.
Mead Johnson & Co. : *See*—
Kroninger, Luther H., Jr., and Straka. 210,365.
Kroninger, Luther H., Jr., and Straka. 210,366.
Kroninger, Luther H., Jr., and Straka. 210,367.
Kroninger, Luther H., Jr., and Straka. 210,368.
Kroninger, Luther H., Jr., and Straka. 210,369.
Kroninger, Luther H., Jr., and Straka. 210,370.
Kroninger, Luther H., Jr., and Straka. 210,371.
Meathe, Kessler and Associates, Inc. : *See*—
Kessler, William H. 210,358.
Mitchell, Atherton R., to Renauld International, Ltd. Pair of sunglasses or the like. 210,420, 3-5-68, Cl. D57—1.
Mitchell, Atherton R., to Renauld International, Ltd. Pair of sunglasses or the like. 210,421, 3-5-68, Cl. D57—1.
Mitchell, Atherton R., to Renauld International, Ltd. Pair of sunglasses or the like. 210,422, 3-5-68, Cl. D57—1.
Mitchell, Atherton R., to Renauld International, Ltd. Pair of sunglasses or the like. 210,423, 3-5-68, Cl. D57—1.
Mitchell, Atherton R., to Renauld International, Ltd. Pair of sunglasses or the like. 210,424, 3-5-68, Cl. D57—1.
Muter Co., The : *See*—
Lane, Thomas. 210,382.
Northrop, John H. : *See*—
Ryan, John W., and Northrop. 210,398.
Olivetti, Ing. C., & C., S.p.A. : *See*—
Sottsass, Ettore. 210,430.
Owens-Illinois, Inc. : *See*—
Fuerst, Brooks D. 210,350.
Fuerst, Brooks D. 210,351.
Fuerst, Brooks D. 210,352.
Pennsalt Chemicals Corp. : *See*—
Schaefer, Robert B. 210,374.
Perkins, George D., to American Telecommunication Corp. Telephone handset. 210,378, 3-5-68, Cl. D26—14.
Perkins, George D., to American Telecommunication Corp. French cradle telephone. 210,379, 3-5-68, Cl. D26—14.
Pittsburgh Corning Corp. : *See*
Behnk, Donald J., and Lerdon. 210,372.
Behnk, Donald J., and Lerdon. 210,373.
Platte, Richard L., to Hoover Ball and Bearing Co. Bottle. 210,353, 3-5-68, Cl. D9—147.
Proctor-Silex, Inc. : *See*—
Florian, Gordon W. 210,410.
Raschke, William L. Boat. 210,431, 3-5-68, Cl. D71—1.
Renauld International, Ltd. : *See*—
Mitchell, Atherton R. 210,420–4.
Riva, Paolo, Soccer shoe. 210,437, 3-5-68, Cl. D2—311.
Rodriguez, Raoul E. Light fixture. 210,407, 3-5-68, Cl. D48—20.
Royston, William C. Gameboard. 210,395, 3-5-68, Cl. D34—5.
Ryan, John W., and J. H. Northrop, to Mattel, Inc. Rocket-launching toy. 210,398, 3-5-68, Cl. D34—15.
Sanders, Norman H., Jr. : *See*—
Sanders, Raymond, and N. H. Sanders, Jr. 210,356.
Sanders, Raymond, and N. H. Sanders, Jr. Crop dryer. 210,356, 3-5-68, Cl. D13—1.
Schaefer, Robert B., to Pennsalt Chemicals Corp. Carrying handle for a refrigerant cylinder. 210,374, 3-5-68, Cl. D23—1.
Schick Electric Inc. : *See*—
Boldt, Melvin H. 210,349.
Boldt, Melvin H. 210,409.
Boldt, Melvin H. 210,435.
Boldt, Melvin H. 210,437.
Singer Co., The : *See*—
Dreyfuss, Henry. 210,441.
Sottsass, Ettore, to Ing. C. Olivetti & C., S.p.A. Teleprinter console. 210,430, 3-5-68, Cl. D64—11.
Straka, Dean R. : *See*—
Kroninger, Luther H., Jr., and Straka. 210,365–71.
Tektronix, Inc. : *See*—
Gerakos, Jim. 210,360.
Tesar, Ian A., to H. J. Ashe. Electric battery lantern. 210,408, 3-5-68, Cl. D48—24.
Textron, Inc. : *See*
Augenstein, Karl C. 210,400.
Augenstein, Karl C. 210,401.
Augenstein, Karl C. 210,402.
Cowan, Murray L. 210,403.
Cowan, Murray L. 210,404.
Thomasville Furniture Industries, Inc. : *See*
Barr, Richard G. 210,385.
Valls, Henrietta. Doll, or similar article. 210,392, 3-5-68, Cl. D34—4.
Van Dyck, Kenneth : *See*—
Lopez-Fabrega, Rodrigo, and Van Dyck. 210,377.
Varian Associates : *See*—
Chan, Anthony P. H. 210,380.
Chan, Anthony P. H. 210,381.
Voit, W. J., Rubber Corp. : *See*—
Baker, John J. 210,394.
Volk, Stanley W. Free standing fireplace. 210,375, 3-5-68, Cl. D23—97.
Wakai, Noboru, to Dai Nihon Bungu Co., Ltd. Ink marking instrument or the like. 210,433, 3-5-68, Cl. D74—17.
Weissmann, David, to Mattel, Inc. Locket. 210,405, 3-5-68, Cl. D45—15.
Weissmann, David, to Mattel, Inc. Combined locket and doll. 210,406, 3-5-68, Cl. D45—15.
Wichmann, Herman A. Soup skimmer. 210,399, 3-5-68, Cl. D44—20.
Wicke, Charles A. : *See*—
Enright, James H., and Wicke. 210,414.
Wilkinson Sword Ltd. : *See*—
Latham, John W. 210,440.
Wormser, Robert S., to Game-Time, Inc. Rocket-shaped seat for playground apparatus. 210,393, 3-5-68, Cl. D34—5.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 5TH DAY OF MARCH, 1968

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AMP Inc. : *See*—
Dormer, Keith H., and Wyrick. 3,372,284.
O'Keefe, Michae. F., and Fan. 3,372,364.
Abbott, Bobby R. Faucet fountain. 3,371,888, 3-5-68, Cl. 239—27.
Abdun-Nabi, Zaki : *See*—
Gordon, Bernard M., and Abdun-Nabi. 3,372,265.
Abe, Kuniomi : *See*—
Kawamura, Michio, Ueda, Ikegami, and Abe. 3,371,915.
Abernathy, Jack H., Jr. : *See*—
Wismark, Emery C., and Abernathy. 3,372,071.
Abood, Frederick J., Jr., and W. Wieland. Dispensing apparatus. 3,371,821, 3-5-68, Cl. 221—93.
Abraham, Ernestine G. : *See*—
Hoffmann, Arthur K., Abraham, and Feldman. 3,372,182.
Achler, Howard S., and H. Kaufmann, to Kaufmann Tool & Engineering Corp. Open end rolling machine. 3,371,513, 3-5-68, Cl. 72—166.
Adams, Kenneth C., and G. W. Bernhoft, to Allis-Chalmers Mfg. Co. Adjustable lift link. 3,371,045, 3-5-68, Cl. 280—461.
Adams, Matthew M., to Travis Plating Co. Decorative modular knob assembly for drawers, doors, cabinets, and the like. 3,371,373, 3-5-68, Cl. 16—121.
Adams, Nicholas M., to Nalco Chemical Co. Composition and method of agglomerating and stabilizing particulate matter by chemical treatment. 3,371,712, 3-5-68, Cl. 166—33.
Aden, Manfred, and K. Chvatlinsky, to Olympia Werke A.G. Power roll coupling cam. 3,371,764, 3-5-68, Cl. 197—17.
Admiral Corp. : *See*—
Barchok, Donald J. 3,372,231.
Aemmer, Peter, to Albiswerk Zurich S.A. Apparatus for locating sources of infrared radiation. 3,372,278, 3-5-68, Cl. 250—83.3.
Aeroflex Laboratories Inc. : *See*—
Speranz, Stephen L., Jr. 3,371,895.
Aerojet-General Corp. : *See*—
Bressler, Martin. 3,372,282.
Pinter, George R. 3,371,491.
Ahrons, Richard W., and D. A. Christiansen, to Radio Corp. of America. Cryoelectric memory. 3,372,384, 3-5-68, Cl. 340—173.1.
Air Products and Chemicals, Inc. : *See*—
Singleton, Alan H. 3,371,497.
Air-Shields, Inc. : *See*—
Carlin, Benson. 3,371,660.
Akeley, Lloyd T., to The Foxboro Co. Level sensing apparatus. 3,371,534, 3-5-68, Cl. 73—299.
Aktiebolaget Atomenergi : *See*—
Margen, Peter H. E. 3,372,092.
Aktiebolaget Gustavsbergs Fabriku : *See*—
Rydberg, John A. 3,371,678.
Aktiebolaget Kamyr : *See*—
Richter, Johan C. F. C. 3,372,087.
Aktiengesellschaft Brown, Boveri & Cie : *See*—
Käser, Alfred. 3,371,560.
Akustische U. Kino-Gerate Gesellschaft m.b.H. : *See*—
Weingartner, Bernhard. 3,372,235.
Aladdin Mfg. Co., Inc. : *See*—
Keegan, Robert M., and Jones. 3,371,702.
Albiswerk Zurich S.A. : *See*—
Aemmer, Peter. 3,372,278.
Welti, Arno. 3,371,887.
Alco Controls Corp. : *See*—
Tilney, Ralph B., Sr. 3,371,685.
Alcorn, Maurice L., Jr., to E. I. du Pont de Nemours and Co. Double plug valve. 3,371,680, 3-5-68, Cl. 137—340.
Allain, Maurice. Belt for trousers. 3,371,351, 3-5-68, Cl. 2—338.
Allegheny Ludlum Steel Corp. : *See*—
Jackson, Harold S., Murtland, and Heblun. 3,372,224.
Allen, Charles W. : *See*—
Thygeson, John R., Sr., and Allen. 3,371,428.
Allen Industries, Inc. : *See*—
Buck, Vincent A., and Nagle. 3,371,942.
Allen, Melvin O., and S. Graybill. Magnetically responsive fluid flow switch. 3,372,255, 3-5-68, Cl. 200—81.9.
Aller, T. Dwight. Driver unit. 3,371,612, 3-5-68, Cl. 103—87.
Allied Chemical Corp. : *See*—
Dear, Robert E. A., and Gilbert. 3,372,205.
Litt, Morton H., and Schmitt. 3,372,152.
Pierce, Arleen C. 3,372,089.
Allis-Chalmers Mfg. Co. : *See*—
Adams, Kenneth C., and Bernhoft. 3,371,945.
Platner, John L. 3,372,060.
Ryskamp, Neil J. 3,372,256.
Allison, Kenneth C. Electrical connector unit. 3,372,227, 3-5-68, Cl. 174—87.
Allison, Kenneth C. Multiposition rotary electric switch. 3,372,248, 3-5-68, Cl. 200—11.
Allport, Davies : *See*—
Hutton, William C., Allport, and Wood. 3,371,512.
Alston, Terence G., and W. D. Schaeffer, to Union Oil Co. of California. Sulfoxidation process in the presence of sulfur trioxide. 3,372,188, 3-5-68, Cl. 260—503.
Alton Box Board Co. : *See*—
Weller, Forrest D. 3,371,963.
Alvarez-Calderon, Alberto. Inverting flap system. 3,371,888, 3-5-68, Cl. 244—42.
Amercoat Corp. : *See*—
Holt, Charles R., and Madewell. 3,372,075.
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Scanley, Clyde S. 3,372,151.
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Slone, Thomas J., and Orbeck. 3,371,520.
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American Meter Co., Inc. : *See*—
Chastain, Jud C. 3,372,314.
American Pipe and Construction Co. : *See*—
Graham, Gordon C., and Zervos. 3,371,770.
American Radiator & Standard Sanitary Corp. : *See*—
Chanaud, Robert C., and Heskestad. 3,371,743.
American Safety Equipment Corp. of California : *See*—
Colgan, Billie E. 3,371,961.
American Sterilizer Co. : *See*—
Brown, Gilbert G. 3,371,986.
Ampex Corp. : *See*—
Jaecklin, Andre A. 3,372,283.
Amphenol Corp. : *See*—
Concelman, Carl W. 3,372,349.
Rundle, David F. 3,371,413.
Ampoules, Inc. : *See*—
Hurschman, Alfred A. 3,372,081.
Anaconda American Brass Co. : *See*—
Christine, Richard J. 3,372,026.
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Fink, Roger H., and Fouse. 3,371,421.
McCarthy, Daniel N. 3,372,053.
Andale Co. : *See*—
McNeal, Daniel R., Jr., and Boscaino. 3,371,545.
Andersen, Walter, ⅓ each to W. R. Bone, and J. W. Fisher. Watercraft. 3,371,361, 3-5-68, Cl. 9—6.
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Anderson, Eugene A., and A. 3,371,926.
Anderson Bros., Mfg., Co. : *See*—
Ward, Frank A., and Jacobson. 3,371,848.
Anderson, Eugene A., and A. Document sorting and distributing sorter apparatus. 3,371,926, 3-5-68, Cl. 271—52.
Anderson, Everett R., to Pacific Pipeline Construction Co. Pipe feeding system. 3,371,806, 3-5-68, Cl. 214—339.
Anderson, John R. Animal headgate. 3,371,653, 3-5-68, Cl. 119—98.
Anderson, Parker S., to Lancaster Meter Co. Temperature-compensating crank assembly for gas meters. 3,371,532. 3-5-68, Cl. 73—281.
Anderson, Richard N., to V. E. Anderson Mfg. Co. Partition structure. 3,371,454. 3-5-68, Cl. 52—122.
Anderson, V. E., Mfg. Co. : *See*—
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Antles, Lucille S., and W. E. Parsons ; said parsons assor. to said Antles. Beehive exit device. 3,371,360, 3-5-68, Cl. 6—4.
Antonsen, Steen H. : *See*—
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Apgar, Martha M. Arm sling. 3,371,663, 3-5-68, Cl. 128—94.
Appl, Elmer J. Blade fastening arrangement for implements. 3,371,723, 3-5-68, Cl. 172—753.
Aquasonics Engineering Co., Inc. : *See*—
Cyr, Reginald J. 3,372,370.
Archer, Sydney, to Sterling Drug Inc. 1,2,3,4,5,6-hexahydro-8-hydroxy-2,6-methano-3-benzazocine derivatives. 3,372,165, 3-5-68, Cl. 260—294.7.
Arledter, Hanns F., to The Mead Corp. Post-formable absorbent paper. 3,372,084, 3-5-68, Cl. 162—128.
Arlin, Edward S., and W. T. Watson, to Norwalk Thermostat Co. Circuit opening reset means for normally closed electric switches. 3,372,257, 3-5-68, Cl. 200—122.
Armbruster, George D., and W. J. Ringel, to Owens-Illinois, Inc. Apparatus for inspecting sealed containers. 3,371,781, 3-5-68, Cl. 209—111.8.

Armour Agricultural Chemical Co.: *See*—
Mazurek, Robert C., and Hynson. 3,372,002.
Armstrong Patents Co. Ltd.: *See*—
Dickinson, Ronald S. 3,371,751.
Arnkjaer, Bent P., S. H. Antonsen, and H. O. Andersen, to Alfred Benzon, Aktieselskabet. Quaternary benzylammonium salts. 3,372,194, 3-5-68, Cl. 260—567.6.
Arnonson, Theodore F. Method and apparatus for charging a packet or container with a flowable material. 3,371,461, 3-5-68, Cl. 53—28.
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Dome, Edwin C. 3,371,359.
Asmanes, Charles, to United States of America, Atomic Energy Commission. Rotary drilling device. 3,371,558, 3-5-68, Cl. 77—29.
Associated Chemical Companies Ltd.: *See*—
Vessey, Clifford A., and Farquhar. 3,371,987.
Associated Portland Cement Manufacturers Ltd., The: *See*—
Mason, Arthur E. 3,372,399.
Astrov, Evgeny I., A. D. Klipov, N. A. Polushkine, and V. S. Routes. Device fo supplying molten metal into a mould of a continuous casting machine. 3,371,704, 3-5-68, Cl. 164—281.
Atkinson, Wallace E., to Long Mfg. Co., Inc. Latch and lock mechanism. 3,371,511, 3-5-68, Cl. 70—71.
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Murray, John P., Jr. 3,371,898.
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Atlas Copco Aktiebolag: *See*—
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Atwood Vacuum Machine Co.: *See*—
Marchione, Joseph H. 3,371,374.
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Auld, David B., A. Lowery, and R. F. Penny. Safety handle and probe for portable surface gauge using radioactive source. 3,372,280, 3-5-68, Cl. 250—106.
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Ausnit, Steven. Reclosable bags with rib and groove elements formed of different materials. 3,371,696, 3-5-68, Cl. 150—3.
Auster, Albert M., to E. I. du Pont de Nemours and Co. Production of dialkyl 2,5-diarylamino-3,6-dihydroterephthalates. 3,372,184, 3-5-68, Cl. 260—471.
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Bagby, Orville W. Sampler gauge. 3,371,538, 3-5-68, Cl. 73—425.4.
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Bailey, Louis G., and E. W. Mehal, to Texas Instruments Inc. Method for depositing a single crystal on an amorphous film, method for manufacturing a metal base transistor, and a thin-film, metal base transistor. 3,372,069, 3-5-68, Cl. 148—175.
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Keyes, Marion A. 3,371,518.
Larson, Robert W., Hood, and Lundberg. 3,371,692.
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Blanchard, Clarence E., Jr., to Outboard Marine Corp. Releasable arrangement for retaining outboard motor in elevated position. 3,371,893, 3-5-68, Cl. 248—4.
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Bruns, Herbert F. Air directing device. 3,371,855, 3–5–68, Cl. 230—120.
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Engdahl, Richard B., H. R. Hazard, and G. M. Hein, to Battelle Memorial Institute. Mobile incinerator. 3,371,629, 3–5–68, Cl. 110—8.

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Engh, Robert O., and R. G. Johnson, to Honeywell, Inc. Ultraviolet sensitive Geiger-Mueller type radiation detector. 3,372,279, 3–5–68, Cl. 250—83.6.

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Hergenrother, William L., to The Firestone Tire & Rubber Co. Manganese chloride tetrahydrate as an ester interchange catalyst. 3,372,186, 3–5–68, Cl. 260—475.

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Meyer, Paul, and G. D. Humphreys. Centrifugal air classifiers. 3,371,783, 3–5–68, Cl. 209—144.

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CLASSIFICATION OF PATENTS

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NOTE.—First number, class; second number, subclass; third number, patent number

2–338	3,371,351	29–613	3,371,411	62– 45	3,371,498	84–327	3,371,570	114– 77	3,371,639	156–306	3,372,078
3– 1	3,371,352	621	3,371,412	55.5	3,371,499	502	3,371,571	121	3,371,640	360	3,372,079
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173	3,371,354	630	3,371,414	160	3,371,501	87– 37	3,371,573	206	3,371,643	583	3,372,081
222	3,371,355	30– 90.3	3,371,415	234	3,371,502	88– 14	3,371,574	115– .5	3,371,644	158– 36.4	3,371,698
239	3,371,356	233	3,371,416	256	3,371,503	24	3,371,575		3,371,645	119	3,371,699
5– 83	3,371,357	293	3,371,417	320	3,371,505		3,371,576	70	3,371,646	160– 84	3,371,700
108	3,371,358	33–126.7	3,371,418	324	3,371,504		3,371,577	116–114	3,371,647	235	3,371,701
118	3,371,359	174	3,371,419	65– 14	3,372,011	89– 1.813	3,371,578	117	3,371,648	392	3,371,702
6– 4	3,371,360		3,371,420		3,372,012	6	3,371,579	117– 2	3,372,048	161–178	3,372,082
8– 4	3,371,981		3,371,421	15	3,372,013	90– 11	3,371,580	7	3,372,049	190	3,372,083
97	3,371,982	179.5	3,371,422		3,372,014	15	3,371,581	64	3,372,050	162–128	3,372,084
116.4	3,371,983	189	3,371,423	103	3,372,015	92– 52	3,371,582	69	3,372,051	164	3,372,085
9– 6	3,371,361	206	3,371,424	114	3,372,016	61	3,371,583	70	3,372,053		3,372,086
	3,371,362	34– 57	3,371,425	162	3,372,017	93– 36	3,371,584	72	3,372,052	251	3,372,087
333	3,371,363	134	3,371,426	67– 7.1	3,371,506	52	3,371,585	105.2	3,372,054	164– 49	3,371,703
10–129	3,371,364	155	3,371,427		3,371,507	94– 39	3,371,586	107.2	3,372,055	281	3,371,704
12– 10.5	RE. 26,355	158	3,371,428	27	3,371,508	95– 1.1	3,371,587	200	3,372,056	289	3,371,705
13– 9	3,372,223	171	3,371,429	68– 5	3,371,509	4.5	3,371,588	206	3,372,057	165– 1	3,371,706
13	3,372,224	217	3,371,430	69– 6.5	3,371,510	86	3,371,589	227	3,372,058	2	3,371,707
15– 97	3,371,365	35– 9	3,371,431	70– 71	3,371,511	96– 1	3,372,027		3,372,059	26	3,371,708
144	3,371,366	12	3,371,432	353	3,371,512	4	3,372,028	118– 49.1	3,371,649	115	3,371,709
145	3,371,367	19	3,371,433	71– 21	3,372,018	48	3,372,029	503	3,371,650	166– 9	3,371,710
250.04	3,371,368	37– 43	3,371,434	64	3,372,019	55	3,372,030	637	3,371,651		3,371,711
.42	3,371,369	103	3,371,435	85	3,372,020	76	3,372,031	119– 51.11	3,371,652	33	3,371,712
402	3,371,371	142	3,371,436	72–166	3,371,513	98– 42	3,371,590	98	3,371,653	38	3,371,713
16–105	3,371,372		3,371,437	421	3,371,514	99– 2	3,372,032	123– 8	3,371,654	42	3,371,714
121	3,371,373	40–124	3,371,438	446	3,371,515	4	3,372,033	41	3,371,655		3,371,715
145	3,371,374	156	3,371,439	73– 1	3,371,516	83	3,372,034	179	3,371,656	118	3,371,716
17– 21	3,371,375	42– 49	3,371,440	37.5	3,371,517	136	3,372,035	187.5	3,371,657	147	3,371,717
18– 5	3,371,376	70	3,371,441	38	3,371,518	150	3,372,036		3,371,658	167– 14	3,372,088
	3,371,377	74	3,371,442		3,371,519	281	3,371,591	198	3,371,634	33	3,372,089
12	3,371,378	43– 17	3,371,443		3,371,520	282	3,371,592	126– 43	3,371,659	65	3,372,090
	3,371,379	42.22	3,371,444	46	3,371,521	283	3,371,593	128– 2	3,371,660	82	3,372,091
17	3,371,380	44– 72	3,372,009	57	3,371,522	329	3,371,594	.05	3,371,661	170–135.4	3,371,718
19	3,371,381	49–368	3,371,445	65	3,371,523	352	3,371,595	24.5	3,371,662	146	3,371,719
	3,371,382	403	3,371,446	67.8	3,371,524	100– 4	3,371,596	94	3,371,663	160.23	3,371,720
26	3,371,383	490	3,371,447	115	3,371,525	80	3,371,597	127	3,371,664	172–112	3,371,721
30	3,371,384	51–163	3,371,448	141	3,371,526	166	3,371,598	227	3,371,665	546	3,371,722
	3,371,385		3,371,449	155	3,371,527	215	3,371,599	285	3,371,666	753	3,371,723
	3,371,386	169	3,371,450	178	3,371,528	101– 45	3,371,600	290	3,371,667	173–123	3,371,724
42	3,371,387	170	3,371,451	188	3,371,529	93	3,371,601		3,371,668		3,371,725
19–151	3,371,388	206	3,371,452	205	3,371,530		3,371,602	519	RE. 26,360	134	3,371,726
259	3,371,389	309	3,372,010	231	3,371,531	175	3,371,603	131– 94	3,371,669	148	3,371,727
21– 53	3,371,984	52–108	3,371,453	281	3,371,532	102– 22	3,371,604	121	3,371,670	174– 22	3,372,226
91	3,371,985	122	3,371,454	295	3,371,533	24	3,371,605	135– 1	3,371,671	87	3,372,227
98	3,371,986	169	3,371,455	299	3,371,534		3,371,606	6	3,371,672	175– 85	3,371,728
23– 56	3,371,987	278	3,371,456	306	3,371,535	27	3,371,607	136– 86	3,372,060	293	3,371,729
110	3,371,988	404	3,371,457	386	3,371,536	72	3,371,608		3,372,061	300	3,371,730
151	3,371,989	648	3,371,458	395	3,371,537	103– 1	3,371,609	227	3,372,062	176– 52	3,372,092
	3,371,990	749	3,371,459	425.4	3,371,538	2	3,371,610	137– 34	3,371,673	54	3,372,093
165	3,371,991	53– 25	3,371,460	432	3,371,539	53	3,371,611	36	3,371,674	177– 47	3,371,731
	3,371,992	26	RE. 26,357	505	3,371,540	87	3,371,612	81.5	3,371,675	208	3,371,732
201	3,371,993	28	3,371,461	74– 5	3,371,541		3,371,613	246.19	3,371,676	178– 5.4	3,372,228
204	3,371,994	33	3,371,462	.47	3,371,542	104	3,371,614	315	3,371,677		3,372,229
208	3,371,995	42	3,371,463	15.4	3,371,543	126	3,371,615	328	3,371,679		3,372,232
209.1	3,371,996	112	3,371,464	86	3,371,544	162	3,371,616	331	3,371,678	6.8	3,372,230
.4	3,371,997	206	3,371,466	89.15	3,371,545	178	3,371,617	340	3,371,680	7.3	3,372,231
218	3,371,998	333	3,371,465	200	3,371,546	258	3,371,618	557	3,371,681	69.5	3,372,233
224	3,371,999	54– 44	3,371,467	206	3,371,547	104– 8	3,371,619	596.12	3,371,682	88	3,372,234
254	3,372,000	55–158	3,371,468	234	3,371,548	35	3,371,620	599.1	3,371,683	179– 1	3,372,235
277	3,372,001	175	3,371,469	411	RE. 26,356	172	3,371,621	609	3,371,684		3,372,236
293	3,372,002	231	3,371,470		3,371,549	105– 4	3,371,622	625.11	3,371,685	15	3,372,237
301	3,372,003	306	3,371,471	424.8	3,371,550	215	3,371,623	.5	3,371,686		3,372,238
313	3,372,004	399	3,371,472		3,371,551	106– 1	3,372,037	139– 59	3,371,687	81	3,372,239
357	3,372,005	56–330	3,371,473	462	3,371,552		3,372,038	123	3,371,688	100.2	3,372,240
358	3,372,006	57– 15	3,371,474	526	3,371,553	2	3,372,039	141– 81	3,371,689		3,372,241
24– 23	3,371,390	140	3,371,475	600	3,371,554	15	3,372,040	99	3,371,690		3,372,242
81	3,371,391	149	3,371,476	677	3,371,555	20	3,372,041	143–155	3,371,691		3,372,243
274	3,371,392	157	3,371,477	777	3,371,556	38.3	3,372,042	144–172	3,371,693	110	3,372,244
29– 95	3,371,393	58– 21.15	3,371,478	781	3,371,557	72	3,372,043	309	3,371,692	111	3,372,245
96	3,371,394	60– 19	3,371,479	75– .5	3,372,021	130	3,372,044	146–215	3,371,694	179	3,372,246
103	3,371,395	39.16	3,371,480	27	3,372,022	279	3,372,045	148– 1.5	3,372,063	180– 6.44	3,371,734
	3,371,396	.28	3,371,481	60	3,372,023	288	3,372,046	6.15	3,372,064	.7	3,371,733
105	3,371,397	.32	3,371,482	84	3,372,024	291	3,372,047	13	3,372,065	9.62	3,371,735
149.5	3,371,398	53	3,371,483	123	3,372,025	107– 8	3,371,624	24	3,372,066	82	3,371,736
157.3	3,371,399	54.5	3,371,484	157.5	3,372,026	14	3,371,625	162	3,372,068	117	3,371,737
183	3,372,007		3,371,485	77– 29	3,371,558	19	3,371,626	175	3,372,069	127	3,371,738
.5	3,372,008		3,371,486	58	3,371,559	109– 53	3,371,627	186	3,372,070	181– .5	3,371,739
212	3,371,400	.6	3,371,487	62	3,371,560	59	3,371,628	187	3,372,067		3,371,740
229	3,371,401	200	3,371,488	81– 3	3,371,561	110– 8	3,371,629		3,372,071		3,371,741
243.52	3,371,402	202	3,371,489	54	3,371,562	112– 2	3,371,630	149– 20	3,372,072	31	3,371,742
416	3,371,403		3,371,490	90	3,371,563		3,371,631	150– .5	3,371,695	35	3,371,743
421	3,371,404	230	3,371,491	82– 3	3,371,564	218	3,371,632	3	3,371,696	61	3,371,744
423	3,371,405	61– 10	3,371,492	4	3,371,565	252	3,371,633	151– 23	3,371,697	184– 7	3,371,745
473.1	3,371,406	28	3,371,493	36	3,371,566	114– 16	3,371,635	156– 69	3,372,073	185– 37	3,371,746
475	3,371,407	39	3,371,494		3,371,567	39	3,371,636	106	3,372,074	187– 29	3,371,747
508	3,371,408	72.7	3,371,495	83– 13	3,371,568	58	3,371,637	172	3,372,075	188– 47	3,371,748
528	3,371,409	62– 13	3,371,496	582	3,371,569	66.5	3,371,638	190	3,372,076	71	3,371,749
598	3,371,410	45	3,371,497	84– 1.24	3,372,225		3,371,642	198	3,372,077	73	3,371,750

188 – 88	3,371,751	214 – 16.4	3,371,804	241 – 299	3,371,875	260 – 79.5	3,372,150	272 – 57	3,371,927	317 – 256	3,372,319
106	3,371,752	75	3,371,805	242 – 9	3,371,876	86.1	3,372,151	66	3,371,928	318 – 7	3,372,320
152	3,371,753	83.2	Re.26,359	18	3,371,877	91.3	3,372,152	273 – 89	3,371,930	18	3,372,321
195	3,371,754	339	3,371,806	46	3,371,878	92.1	3,372,153	134	3,371,931	39	3,372,322
196	3,371,755	215 – 6	3,371,807		3,371,879	94.9	3,372,154	144	3,371,932	230	3,372,323
251	3,371,756	9	3,371,808	55.12	3,371,881	145	3,372,155	274 – 1	3,371,933	320 – 89	3,372,324
190 – 49	3,371,757		3,371,809	13	3,371,882	232	3,372,156		3,371,934	321 – 8	3,372,325
192 – 84	3,371,758	38	3,371,810	3	3,371,880	239.1	3,372,157	10	3,371,935	24	3,372,326
85	3,371,759	39	3,371,811	67.3	3,371,883		3,372,158	277 – 117	3,371,936	48	3,372,327
142	3,371,760		3,371,812	71.1	3,371,884	.57	3,372,159	189	3,371,937	323 – 22	3,372,328
194 – 16	3,371,761	40	3,371,813	129	3,371,885	240.1	3,372,160	200	3,371,938		3,372,329
97	3,371,762		3,371,814	244 – 2	3,371,886	247.1	3,372,161	280 – 5	3,371,939	51	3,372,330
	3,371,763	219 – 10.61	3,372,261	3.11	3,371,887		3,372,162	43.23	3,371,940	324 – 5	3,372,331
195 – 36	3,372,094	69	3,372,262	42	3,371,888	279	3,372,163	104.5	3,371,941	30	3,372,332
197 – 17	3,371,764	80	3,372,263	50	3,371,889	292	3,372,164	150	3,371,942	98	3,372,333
42	3,371,765	367	3,372,264	110	3,371,890	294.7	3,372,165	206	3,371,943	126	3,372,334
53	3,371,766	220 – 1.5	3,371,815	137	3,371,891	304	3,372,166	229	3,371,944	325 – 49	3,372,335
198 – 30	3,371,767	4	3,371,816	248 – 2	3,371,892	315	3,372,167	461	3,371,945	364	3,372,338
92	3,371,768	40	3,371,817	4	3,371,893	326.5	3,372,168	285 – 47	3,371,946	376	3,372,336
154	3,371,769	54	3,371,818	9	3,371,894	346.3	3,372,169	292 – 144	3,371,947	388	3,372,337
167	3,371,770	69	3,371,819	20	3,371,895	372	3,372,170	216	3,371,948	421	3,372,339
200 – 6	3,372,247	221 – 21	3,371,820	46	3,371,896	374	3,372,171	308	3,371,949	440	3,372,340
11	3,372,248	93	3,371,821	95	3,371,897	396	3,372,172	294 – 15	3,371,950	328 – 8	3,372,341
19	3,372,249	222 – 95	3,371,822	96	3,371,898	397.3	3,372,173	82	3,371,951	330 – 15	3,372,342
38	3,372,250	97	3,371,823	119	3,371,899		3,372,174	88	3,371,952	17	3,372,343
44	3,372,251	105	3,371,824	343	3,371,900	4	3,372,175		3,371,953		3,372,344
61.34	3,372,252	190	3,371,825	354	3,371,901	429.5	3,372,176	296 – 23	3,371,954	63	3,372,345
.45	3,372,253	504	3,371,826		3,371,902	448	3,372,177	97	3,371,955	331 – 2	3,372,346
63	3,372,254	507	3,371,827	486	3,371,903	2	3,372,178	297 – 162	3,371,956	39	3,372,347
119	3,372,255	223 – 43	3,371,828	249 – 48	3,371,904	455	3,372,179	219	3,371,957	116	3,372,348
82	3,372,256	224 – 5	3,371,829	69	3,371,905		3,372,180	269	3,371,958	333 – 7	3,372,349
122	3,372,257	7	3,371,830	250 – 83	3,371,974	463	3,372,181	310	3,371,959	28	3,372,350
144	3,372,258	42.1	3,371,831	1	3,372,275	465.5	3,372,182	386	3,371,960	71	3,372,351
	3,372,259	21	3,371,832	3	3,372,276	471	3,372,183	397	3,371,961	95	3,372,352
167	3,372,260	225 – 2	3,371,833		3,372,277		3,372,184	439	3,371,962	335 – 26	3,372,353
202 – 153	3,372,095	226 – 17	3,371,916		3,372,278	475	3,372,185	445	3,371,963	176	3,372,354
173	3,372,096	27	3,371,834	6	3,372,279		3,372,186	299 – 1	3,371,964	230	3,372,355
204 – 59	3,372,097	50	3,371,835	106	3,372,280	498	3,372,187	302 – 14	3,371,965	281	3,372,356
	3,372,098	228 – 40	3,371,836		3,372,281	503	3,372,188	303 – 69	3,371,966	291	3,372,357
143	3,372,099	43	3,371,837	236	3,372,282	555	3,372,189		3,371,967	336 – 200	3,372,358
159.17	3,372,100		3,371,838	251 – 4	3,371,906	559	3,372,190	307 – 83	3,372,283	338 – 128	3,372,359
180	3,372,101	44	3,371,839	175	3,371,907	563	3,372,191	88	3,372,284	143	3,372,360
181	3,372,102	229 – 4.5	3,371,841	252 – 8.6	3,372,272	564	3,372,192	93	3,372,285	339 – 97	3,372,361
195	3,372,103	15	3,371,840	12	3,372,273	566	3,372,193	141.4	3,372,286	99	3,372,362
	3,372,104	33	3,371,842	33	3,372,274	567.6	3,372,194	240	3,372,287	145	3,372,363
243	3,372,105	34	3,371,843		3,372,275	570.7	3,372,195	252	3,372,288	177	3,372,364
245	3,372,106	37	3,371,844	46	3,372,276	.8	3,372,196	286	3,372,289	186	3,372,365
291	3,372,107	39	3,371,845	42.1	3,372,277	586	3,372,197	308 – 8.6	3,371,968	272	3,372,366
206 – 16	3,371,771	40	3,371,846	7	3,372,278	597	3,372,198	40	3,371,969	274	3,372,367
45.14	3,371,772	43	3,371,847	48.8	3,372,279	599	3,372,199	140	3,371,970	340 – 2	3,372,368
.31	3,371,773	45	3,371,848	51.5	3,372,280	606.5	3,372,200	187	3,371,971	7	3,372,369
52	3,371,774	62.5	3,371,849	62.61	3,372,282	615	3,372,201	310 – 5	3,372,290	8	3,372,370
56	3,371,775	68	3,371,850		3,372,283	618	3,372,202	49	3,372,291		3,372,371
65	3,371,776	92.9	3,371,851	9	3,372,284	643	3,372,203	105	3,372,292	71	3,372,372
78	3,371,777	230 – 55	3,371,852	77	3,372,285	650	3,372,204	268	3,372,293	74	3,372,373
208 – 95	3,372,108	69	3,371,853	99	3,372,286	653.3	3,372,205	312 – 17	3,371,972	81	3,372,374
111	Re.26,358		3,371,854	182	3,372,126	666	3,372,206	194	3,371,973	146.1	3,372,375
313	3,372,109	120	3,371,855	301.2	3,372,127	671	3,372,207	218	3,371,974		3,372,376
209 – 3	3,371,778	141	3,371,856	437	3,372,128	830	3,372,208	236	3,371,975	.2	3,372,377
73	3,371,780	152	3,371,857	253 – 70	3,371,908	932	3,372,209	245	3,371,976	172.5	3,372,378
111.8	3,371,781	233 – 14	3,371,858	254 – 29	3,371,909	951	3,372,210	267	3,371,977		3,372,379
144	3,371,782	20	3,371,859	79	3,371,910	985	3,372,211	313 – 65	3,372,294		3,372,380
	3,371,783	235 – 92	3,372,265	256 – 47	3,371,911	261 – 41	3,371,914	93	3,372,295		3,372,381
166	3,371,779		3,372,266	259 – 4	3,371,912	263 – 6	3,371,915	231	3,372,296		3,372,382
458	3,371,784		3,372,267	81	3,371,913	264 – .5	3,372,212	337	3,372,297	173	3,372,383
210 – 57	3,372,110	94	3,371,860	260 – 2	3,372,129		3,372,213	315 – 14	3,372,298	1	3,372,384
62	3,372,111	132	3,371,861	5	3,372,130	25	3,372,214	39.71	3,372,299	174	3,372,385
65	3,371,785	151.11	3,372,268	17.3	3,372,131	53	3,372,215	96	3,372,300	262	3,372,386
90	3,371,786	164	3,372,269	4	3,372,132	61	3,372,216	106	3,372,301	347	3,372,387
	3,371,787	200	3,371,862	28	3,372,133	122	3,372,217	272	3,372,302	371	3,372,388
121	3,371,788	201	3,371,863	29.7	3,372,134	169	3,372,218	317 – 11	3,372,303	343 – 8	3,372,389
169	3,371,789	236 – 86	3,371,864	33.4	3,372,135	210	3,372,219	33	3,372,304	9	3,372,390
223	3,371,790	237 – 68	3,371,865	8	3,372,136	236	3,372,220	85	3,372,306	17.1	3,372,391
327	3,371,791	238 – 58	3,371,866	37	3,372,137	285	3,372,221	98	3,372,305	113	3,372,392
335	3,371,792	315	3,371,867	40	3,372,138		3,372,222	100	3,372,307	225	3,372,393
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512	3,371,794	102	3,371,869	45.9	3,372,140	43	3,371,918		3,372,309	787	3,372,395
211 – 14	3,371,795	684	3,371,870	95	3,372,141	267 – 73	3,371,919		3,372,310	916	3,372,396
74	3,371,796	240 – 9	3,372,270	47	3,372,142	269 – 23	3,371,920	123	3,372,311	346 – 33	3,372,397
178	3,371,797	10.64	3,372,271		3,372,143	25	3,371,921	134	3,372,312		3,372,398
182	3,371,798	41.15	3,372,272		3,372,144	27	3,371,922	137	3,372,313	49	3,372,399
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213 – 20	3,371,802	163	3,371,873	75	3,372,148	271 – 52	3,371,926		3,372,317	401 – 46	3,371,370
214 – 6	3,371,803	168	3,371,874	78.4	3,372,149	74	3,371,929		3,372,318	285	3,371,980

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D 4 – 31	210,348		210,364		210,379		210,395	D52 – 6	210,411		210,427
D 9 – 2	210,349	D16 – 3	210,365		210,380	15	210,396	D54 – 1	210,412		210,428
38	210,350		210,366		210,381		210,397		210,413	D64 – 11	210,430
87	210,351		210,367		210,382		210,398	D55 – 1	210,414	D71 – 1	210,431
96	210,352		210,368	D29 – 1	210,383	D44 – 29	210,399	D56 – 2	210,415	D73 – 1	210,432
147	210,353		210,369		210,384	D45 – 4	210,400	4	210,416	D74 – 17	210,433
170	210,354		210,370	D33 – 6	210,385		210,401	D57 – 1	210,417	D80 – 8	210,434
192	210,355		210,371	14	210,386		210,402		210,418	D83 – 1	210,435
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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

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NOTICES

Reprint of "Consolidated Listing of Notices"

An extract from the Decision Leaflet and the OFFICIAL GAZETTE of January 16, 1968, entitled "Consolidated Listing of Recent O.G. Notices Re Patent Office Practices and Procedures" has been reprinted and is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. Price 10 cents.

Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Firma Kurt Atmanspacher KG, by divestment from Attorney General of the United States (vested from A. Atmanspacher by Vesting Order), Endingen (Kaiserstuhl) Germany, Reg. No. 264,475, Canc. No. 8942.

Big Daddy's Enterprises, La Jolla, Calif., Reg. No. 736,910, Canc. No. 9045.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	17,851
Date of oldest new application	Mar. 1, 1967
Date of oldest amended application (filing date)	Aug. 4, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, [illegible], 32, 33, 37, 38, 39, 40, 41, 42, 43, [illegible]; Certification Marks, Classes A and B	4-6-67	4-28-65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	4-19-67	8-4-64
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	3-1-67	10-28-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	3-17-67	9-10-65
Renewals (All Classes)	12-28-67	.....
Sec. 12(c) Publications (All Classes)	1-8-68	.....

Applications filed during the month of January 1968—2,350

Registrations Issued ---------- 441—No. [illegible]45,224 to No. 845,664
Renewals Issued ---------- 60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 246,221. Magnetics, Inc., East Butler, Pa. Filed May 9, 1966.

MAGNETICS inc.

Owner of Reg. No. 710,186.

Class 21—Electrical Apparatus, Machines, and Supplies

For Industrial Control Equipment and Systems—Namely, Power Regulators, Inverters, Converters, Frequency Modifiers, Regulated Power Supplies, Transformers, and Saturable Reactors (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Tansductors, Magnetometers, and Magnetic-Measuring Instrumentation—Namely, Shunt Amplifiers and D.C. Current Transformers (Int. Cl. 9).

First use January 1954.

SN 251,578. Naco Industries, Inc., New York, N.Y. Filed Aug. 3, 1966.

Naco

Class 21—Electrical Apparatus, Machines, and Supplies

For Radios (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Tape Recorders (Int. Cl. 9).

First use July 22, 1966.

SN 253,252. Orrville Products, Inc., Orrville, Ohio. Filed Aug. 29, 1966.

ORRVILLE

Class 2—Receptacles

For Pressurizable Storage Tanks and Containers (Int. Cl. 6).

Class 19—Vehicles

For Motor Vehicle Bodies and Cabs (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Material Handling Equipment—Namely, Belt Conveyors, Roller Conveyors, Overhead Conveyors, and Turntables; and Off-Highway Vehicle Cabs (Int. Cl. 7).

First use at least before 1930.

SN 260,997. Interstyle AG., Glarus, Switzerland. Filed Dec. 19, 1966.

GREENAGER

Priority claimed under Sec. 44(d) on Swiss Reg. No. 219,382, dated June 23, 1966.

Class 39—Clothing

For Costumes, Dresses, Coats, Jackets, Trousers, Blouses, Shirts, Blazers, Aprons, Overalls, Skirts, Hosiery, Bathing Suits, Caps, Hats, Gloves, Scarves, Lingerie; Men's Underwear; Children's Undermwear; Collars, Neckties, Vests, Pajamas, Night Gowns, Dressing Gowns, Corsets, Corselets, Bodices, Brassieres, Suspender Belts, Sweaters, Boots, Shoes, and Slippers (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Textile Piece Goods for Use in Making Costumes, Dresses, Coats, Jackets, Trousers, Blouses, Shirts, Bathing Suits, Caps, Gloves, Scarves, Lingerie, Underwear, Collars, Neckties, Pajamas, Dressing Gowns, Corsets, Brassieres, and the Like (Int. Cl. 24).

SN 273,224. Clairol Incorporated, New York, N.Y. Filed June 7, 1967.

CATAMARAN

Class 51—Cosmetics and Toilet Preparations

For Hair Tinting, Dyeing, and Coloring Preparation, Men's Hair Lightener, Men's Cologne, Men's Hair Spray, Men's Deodorant, and After-Shave Lotion (Int. Cls. 3 and 5).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Mar. 14, 1967.

SN 276,387. Telonic Industries, Inc., Beech Grove, Ind. Filed July 20, 1967.

Telonic

Owner of Reg. No. 625,297.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus and Supplies—Namely, Attenuators; Sweep Generators; Fixed and Tunable Frequency Multipliers; Radio Frequency Switches; Voltage Regulation Power Supplies; Bandpass Filters; Lowpass Filters; Tunable Filters; Frequency Diplexers; Frequency Multiplexers; Impedance Transformers; Video and Radio Frequency Amplifiers; Fixed and Tunable Oscillators; and Power Dividers (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Spectrum Analysis Equipment; Attenuators for Test Equipment; Radio Frequency Detectors; Terminations and Mismatch Terminations for the Measurement of Voltage Reflection Coefficient and VSWR in Coaxial Systems; Cavity Wavemeters; Frequency Marker Generators for Measurement of Frequency; Rho-Tector Impedance Bridges for Measurement of Voltage Reflection Coefficient; Sweep Generators for Measuring Frequency Response; Marker Oscillators for Measurement of Frequency; Color Bar Generators for Measurement of Color Purity and Convergence; White Dot Generators for Measurement of Color Purity, Convergence and Linearity; and Oscilloscopes (Int. Cl. 9).

First use Mar. 20, 1953.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 256,719. Carworth, Inc., New City, N.Y. Filed Oct. 19, 1966.

FORMULIZED

For Laboratory Animals (Int. Cl. 31).
First use on or about July 18, 1966.

SN 257,484. Hammond Plastics, Inc., Worcester, Mass. Filed Oct. 28, 1966.

GORDON SUPERFLEX

For Polystyrene in Granular Form Sold in Bulk (Int. Cl. 1).
First use 1952; July 1946 as to "Gordon."

SN 257,485. Hammond Plastics, Inc., Worcester, Mass. Filed Oct. 28, 1966.

GORDON SUPERFLOW

For Polystyrene in Granular Form Sold in Bulk (Int. Cl. 1).
First use August 1956; July 1946 as to "Gordon."

SN 257,845. Fredonia Seed Company, Fredonia, N.Y. Filed Nov. 3, 1966.

FUN-TASTIC

For Vegetable and Flower Seeds of Novelty Varieties (Int. Cl. 31).
First use Sept. 12, 1966.

SN 257,846. Fredonia Seed Company, Fredonia, N.Y. Filed Nov. 3, 1966.

FUN-TASTIC

For Vegetable and Flower Seeds of Novelty Varieties (Int. Cl. 31).
First use Sept. 12, 1966.

SN 261,320. Pan-American Bulb Co. Ltd., North Surrey, British Columbia, Canada. Filed Dec. 22, 1966.

WINDMILL BRAND

Applicant disclaims any exclusive use of the word "Brand" apart from the mark as shown. Owner of Canadian Reg. No. 114,726, dated July 17, 1959.

For Flower Bulbs, Shrubs, Rose Bushes, Trees, and Perennial Roots (Int. Cl. 31).

SN 269,071. Golden State Sheep Tanning Co., Brooklyn, N.Y. Filed Apr. 13, 1967.

SULTRALAMB

Owner of Reg. No. 621,453.
For Sheared Process Lamb Skins (Int. Cl. 18).
First use July 14, 1966.

SN 269,108. Charles A. Roberts, d.b.a. Foot Balance Posture Clinic, and Foot Posture Controls, Sherman, Tex. Filed Apr. 13, 1967.

RO COP

For Plastic Materials To Be Used as a Leather Substitute (Int. Cl. 18).
First use Oct. 1, 1966.

SN 269,332. Monsanto Company, St. Louis, Mo. Filed Apr. 17, 1967.

ANYWEAR

For Synthetic Fibers and Filaments (Int. Cl. 22).
First use Mar. 30, 1967.

SN 269,406. The Dow Chemical Company, Midland, Mich. Filed Apr. 18, 1967.

TYBRENE

Owner of Reg. Nos. 661,262, 715,942, and 772,563.
For Synthetic Resins (Int. Cl. 1).
First use Nov. 30, 1964.

SN 269,427. Kanematsu-Gosho (U.S.A.) Inc., New York, N.Y. Filed Apr. 18, 1967.

VINYBAN

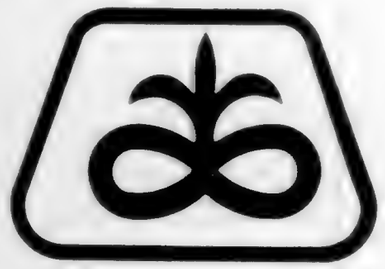
For Plastic Film and Sheet Material Particularly of Polyvinyl Chloride (Int. Cl. 17).
First use Apr. 1, 1967.

SN 269,559. Pioneer Hi-Bred Corn Company, Des Moines, Iowa. Filed Apr. 19, 1967.

PIONEER

For Live Cattle and Semen for Artificial Insemination (Int. Cl. 31).
First use about Apr. 25, 1966, on semen.

SN 269,560. Pioneer Hi-Bred Corn Company, Des Moines, Iowa. Filed Apr. 19, 1967.



For Live Cattle and Semen for Artificial Insemination (Int. Cl. 31).
First use about Apr. 25, 1966, on semen.

SN 269,749. Diamond Mica Company, Spruce Pine, N.C. Filed Apr. 21, 1967.

SILVERSHEEN

For Ground Mica (Int. Cl. 17).
First use in or about November 1923.

SN 269,750. Diamond Mica Company, Spruce Pine, N.C. Filed Apr. 21, 1967.

DIAMOND SHEEN

For Ground Mica (Int. Cl. 17).
First use in or about November 1923.

SN 269,751. Diamond Mica Company, Spruce Pine, N.C. Filed Apr. 21, 1967.

SILVERSHEEN SPECIAL

For Ground Mica (Int. Cl. 17).
First use in or about November 1923.

SN 284,928. Middletown Industries Corporation, Middletown, Conn. Filed Nov. 15, 1967.

MIRRAKAF

Owner of Reg. No. 443,773.
For Vinyl Fabrics in the Piece Used as a Leather Substitute (Int. Cl. 18).
First use Jan. 7, 1958.

SN 286,063. Domtar Limited, Montreal, Quebec, Canada. Filed Dec. 4, 1967.

For Wood Pulp (Int. Cl. 1).
First use on or about Jan. 25, 1967; in commerce on or about Jan. 25, 1967.

SN 286,064. Domtar Limited, Montreal, Quebec, Canada. Filed Dec. 4, 1967.

For Wood Pulp (Int. Cl. 1).
First use on or about Aug. 1, 1967; in commerce on or about Aug. 1, 1967.

SN 286,065. Domtar Limited, Montreal, Quebec, Canada. Filed Dec. 4, 1967.

For Wood Pulp (Int. Cl. 1).
First use on or about Aug. 7, 1967; in commerce on or about Aug. 7, 1967.

SN 286,744. Badger Research Corp., Madison, Wis. Filed Dec. 12, 1967.

BR-HD

For Albino Rats (Int. Cl. 31).
First use Oct. 25, 1967.

Class 2 — Receptacles

SN 245,609. Owens-Illinois, Inc., Toledo, Ohio. Filed May 13, 1966.

Owner of Reg. Nos. 359,502, 798,554, and others.
For Caddies, Servers, and Holders Made of Metal for Glassware (Int. Cl. 21).
First use July 31, 1964.

SN 247,406. Presque Isle Paper Products, Inc., Erie, Pa. Filed June 6, 1966.

PRESCO-PAK

For Foam Envelopes and Folders and Pocket-Like Shipping Containers for Packaging and Shipping (Int. Cl. 16).
First use Dec. 8, 1965.

SN 248,292. Hemis Company, Inc., Minneapolis, Minn. Filed June 17, 1966.

RE-CLOS-IT

Owner of Reg. No. 738,829.
For Polyethylene Bags (Int. Cl. 20).
First use Jan. 11, 1961.

SN 270,222. Burdick & Son, Inc., Albany, N.Y. Filed Apr. 28, 1967.

The mark consists of a fanciful letter "B" with an "S" superimposed thereon within a partial circle.
For Metal Containers (Int. Cl. 6).
First use on or about Mar. 23, 1967.

SN 271,600. Copco, Inc., New York, N.Y. Filed May 16, 1967.

PANTRY WALL

For Canister Sets, Spice Racks, Paper Dispensers, and Bread Boxes of Wood, Metal, and Plastic in Combination (Int. Cl. 21).
First use Mar. 1, 1967.

SN 276,520. Alton Box Board Company, Wilmington, Del. Filed July 21, 1967.

LEAF PAC

The term "Pac" is disclaimed apart from the mark as shown.
For Paperboard Blanks for Erection Into Containers at the Point of Use (Int. Cl. 16).
First use May 24, 1967.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 272,216. Samsonite Corporation, Denver, Colo. Filed May 23, 1967.

SATURN

For Luggage (Int. Cl. 18).
First use Apr. 28, 1966.

Class 4 — Abrasives and Polishing Materials

SN 256,114. Mink Oil Waterproofing Co., Portland, Oreg. Filed Oct. 10, 1966.

The words "Shoe Polish" and "White" are disclaimed apart from the mark as shown. The drawing is lined for the color brown.
For Shoe Polish (Int. Cl. 3).
First use Jan. 3, 1965.

SN 260,373. Vibraslide, Inc., Binghamton, N.Y. Filed Dec. 8, 1966.

Applicant disclaims the words "Abrasives" and "Compounds" as used in the mark.
For Compound Containing Abrasive Grain and Soap (Int. Cl. 3).
First use Feb. 8, 1962.

SN 271,019. American Cyanamid Company, Wayne, N.J. Filed May 9, 1967.

LIQUIFLOR

For Floor Polish (Int. Cl. 3).
First use Apr. 26, 1967.

SN 271,023. American Cyanamid Company, Wayne, N.J. Filed May 9, 1967.

APPEAL

For Furniture Polish (Int. Cl. 3).
First use Apr. 26, 1967.

SN 271,238. Economics Laboratory, Inc., St. Paul, Minn. Filed May 11, 1967.

S'COR

Owner of Reg. No. 505,072.
For Deburring Compound (Int. Cl. 3).
First use Apr. 1, 1967.

Class 5 — Adhesives

SN 265,410. Doric Corporation, Oklahoma City, Okla. Filed Feb. 24, 1967.

PELLMELTS

For Hot Melt Adhesives in Pellet Form Composed of 100 Percent Solids and Containing Synthetic Resins and/or Natural Resins, Waxes, and Modifiers (Int. Cl. 1).
First use Jan. 19, 1967.

SN 265,411. Doric Corporation, Oklahoma City, Okla. Filed Feb. 24, 1967.

HOTPELTS

For Hot Melt Adhesives in Pellet Form Composed of 100 Percent Solids and Containing Synthetic Resins and/or Natural Resins, Waxes, and Modifiers (Int. Cl. 1).
First use Jan. 19, 1967.

SN 265,412. Doric Corporation, Oklahoma City, Okla. Filed Feb. 24, 1967.

CHIPMELTS

For Hot Melt Adhesives in Pellet Form Composed of 100 Percent Solids and Containing Synthetic Resins and/or Natural Resins, Waxes, and Modifiers (Int. Cl. 1).
First use Jan. 19, 1967.

SN 265,413. Doric Corporation, Oklahoma City, Okla. Filed Feb. 24, 1967.

IAPCO

For Hot Melt Adhesives in Pellet Form Composed of 100 Percent Solids and Containing Synthetic Resins and/or Natural Resins, Waxes, and Modifiers (Int. Cl. 1).
First use 1950.

SN 287,208. Ashland Oil & Refining Company, Cleveland, Ohio. Filed Dec. 19, 1967.

ISOCURE

For Synthetic Resin Binders for Making Foundry Cores and Molds (Int. Cl. 1).
First use on or about Aug. 4, 1967.

Class 6 — Chemicals and Chemical Compositions

SN 260,010. Edward W. Bissette, d.b.a. Bissette Company, Clinton, N.C. Filed Dec. 5, 1966.

ION-707

For Battery Preservative (Int. Cl. 1).
First use in or about May 1966.

SN 261,587. Kay-Fries Chemicals, Inc., West Haverstraw, N.Y. Filed Dec. 28, 1966.

OCTRIC

For Organic Chemical Intermediates, Primarily Tricarboxypentane Acid and Its Derivatives (Int. Cl. 1).
First use on or about Dec. 7, 1966.

SN 261,853. Walter G. Legge Company, Inc., New York, N.Y. Filed Jan. 3, 1967.

STAT-LES

For Anti-Static Compound for Treating Textile Materials To Inhibit Surface Changes Thereon (Int. Cl. 1).
First use Nov. 22, 1966.

SN 275,211. Aire Research Limited, Columbia, S.C. Filed July 3, 1967.

BANISH

For Room Deodorant (Int. Cl. 5).
First use Sept. 27, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 262,389. Atlas Chemical Industries, Inc., Wilmington, Del. Filed Jan. 12, 1967.

TWISTITE

For Explosive Cartridges (Int. Cl. 13).
First use July 9, 1943.

Class 11 — Inks and Inking Materials

SN 272,015. Bowers Printing Ink Company, Chicago, Ill. Filed May 22, 1967.

CRYSTAL-GLOW

Owner of Reg. No. 804,119.
For Printing Ink (Int. Cl. 2).
First use Mar. 8, 1967.

Class 12 — Construction Materials

SN 232,277. Customwood Manufacturing Company, Albuquerque, N. Mex., assignee of Robert T. Bogan, Jr., Albuquerque, N. Mex. Filed Nov. 8, 1965.

Customwood

For Architectural Carved Wood Grilles (Int. Cl. 19).
First use February 1960.

SN 257,886. Pennsylvania Pacific Corporation, Wasminster, Pa. Filed Nov. 3, 1966.

PANELUCENT

For Curtain Walls for Buildings (Int. Cl. 19).
First use July 11, 1966.

SN 257,887. Pennsylvania Pacific Corporation, d.b.a. Penn Pac, Warminster, Pa. Filed Nov. 3, 1966.

SOUNDIVIDER

For Panels Used as Interior and Exterior Building Walls (Int. Cl. 19).
First use Apr. 15, 1966.

SN 259,339. Owens-Corning Fiberglas Corporation, Toledo, Ohio. Filed Nov. 23, 1966.

DIMENSIONAIRE

For Ceiling Systems (Int. Cl. 19).
First use Oct. 17, 1966.

SN 267,429. International Paper Company, New York, N.Y. Filed Mar. 23, 1967.

Fiesta

Owner of Reg. No. 798,719.
For Wood Panelling Made From Plywood Composition Board, Particle Board, or Flakeboard (Int. Cl. 19).
First use Feb. 17, 1967.

SN 268,609. National Gypsum Company, Buffalo, N.Y. Filed Apr. 7, 1967.

ECONAFIBRE

For Ceiling Tile (Int. Cl. 19).
First use Mar. 7, 1967.

SN 268,611. National Gypsum Company, Buffalo, N.Y. Filed Apr. 7, 1967.

TONICO

For Acoustical Tile (Int. Cl. 19).
First use Mar. 2, 1967.

SN 269,453. Ranco Industrial Products Corporation, Cleveland, Ohio. Filed Apr. 18, 1967.

FILLCON

For Resin Reinforced Asphalt and Aggregate Mix for Filling Conduit Trenches in Wood Block Floors (Int. Cl. 19).
First use on or about June 1, 1966.

SN 270,100. National Homes Corporation, Lafayette, Ind. Filed Apr. 27, 1967.

HOMES DESIGNED WITH YOUTH IN MIND

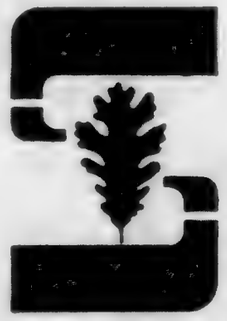
"Homes" is disclaimed apart from the mark as shown.
For Prefabricated Homes (Int. Cl. 19).
First use Feb. 2, 1967.

SN 271,297. Vetreria di Vernante S.p.A., Cuneo-Spinetta, Italy. Filed May 11, 1967.

HEMERA

Owner of Italian Reg. No. 181,079, dated Jan. 10, 1966.
For Glass Doors (Int. Cl. 19).

SN 280,918. Chester B. Stem, Incorporated, New Albany, Ind. Filed Sept. 22, 1967



The mark comprises a stylized letter "S" and a representation of an oak leaf within the curved portion thereof
For Hardwood Lumber and Sliced Wood (Int. Cl. 19).
First use Dec. 23, 1966.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 252,407. National Lock Co., Rockford, Ill. Filed Aug. 15, 1966.

BECKBOLT

For Construction Bolts or Fasteners (Int. Cl. 6).
First use July 25, 1966.

SN 254,616. National Lock Co., Rockford, Ill. Filed Sept. 16, 1966.

HELLENIC

For Cabinet Hardware—Namely, Knobs, Pulls, and Backplates (Int. Cl. 6).
First use Dec. 10, 1965.

SN 255,185. C. E. M. Company, Inc., Danielson, Conn. Filed Sept. 27, 1966.

GRIPrite

For Clinch Nuts (Int. Cl. 6).
First use June 16, 1966.

SN 262,481. Electro-Mechanical Enterprises, Inc., Westerly, R.I. Filed Jan. 13, 1967.

POSI-SEAL

For Valves and Components for Valves (Int. Cl. 6).
First use Oct. 21, 1966.

SN 269,737. Cameron Iron Works, Inc., Houston, Tex. Filed Apr. 21, 1967.

CAMERON

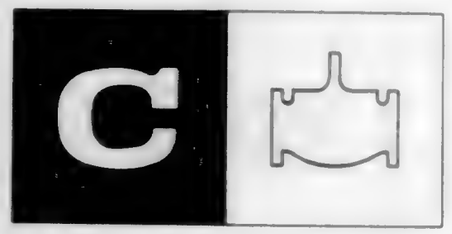
Owner of Reg. Nos. 560,168, 786,400, and others.
For Pipe (Int. Cl. 6).
First use 1955.

SN 272,295. Carl Erik Josef Nyberg, Skovde, Sweden. Filed May 24, 1967.

CEJN

Owner of Swedish Reg. No. 80,221, dated Apr. 13, 1956.
For Pipe and Hose Couplings (Int. Cl. 6).

SN 284,786. Cla-Val Co., Newport Beach, Calif. Filed Nov. 14, 1967.



For Valves and Controls Adapted To Be Connected in Pipe Lines To Control the Flow of Liquid and Gas, and Replacement Parts Therefor (Int. Cl. 6).
First use as early as June 30, 1956.

Class 15 — Oils and Greases

SN 262,560. Atlantic Richfield Company, Philadelphia, Pa. Filed Jan. 16, 1967.

ARCONOL

Owner of Reg. Nos. 741,160 and 744,003.
For Gasoline Supplement (Int. Cl. 1).
First use Nov. 17, 1966.

SN 276,558. Ray Hook, d.b.a. Addzip Additives, Escalon, Calif. Filed July 21, 1967.

"Blendzall"

For Motor Oil (Int. Cl. 4).
First use Oct. 2, 1959.

SN 280,472. Sinclair Refining Company, New York, N.Y. Filed Sept. 15, 1967.

DINOLENE

Owner of Reg. Nos. 342,874, 779,741, and others.
For Motor Oils and Lubricating Oils (Int. Cl. 4).
First use July 26, 1966.

Class 16 — Protective and Decorative Coatings

SN 253,885. Iowa Paint Manufacturing Company, Inc., Des Moines, Iowa. Filed Sept. 6, 1966.

GALVA-BOND

For Paint Substance Used as a Primer for Old Oxidized, Unpainted, or Mildly Rusted Galvanized Metal or Other Metal Surfaces (Int. Cl. 2).
First use on or about Dec. 1, 1958.

SN 257,216. United States Rust Control Corporation, Miami, Fla. Filed Oct. 25, 1966.

The lining on the letters of the mark does not represent color
For Rust and Corrosion Protective Coating With Incidental Lubricating Properties (Int. Cl. 2).
First use Mar. 1, 1966.

SN 259,579. Produits Chimiques Pechiney Saint-Gobain, Paris, France. Filed Nov. 28, 1966.

PEINTAL

Owner of French Reg. No. 526,740, dated Dec. 28, 1964 (Seine); Natl. Inst. No. 237,926.
For Alumina Based, Active Pigment Additives, for Use With Paint (Int. Cl. 2).

SN 261,852. Walter G. Legge Company, Inc., New York, N.Y. Filed Jan. 3, 1967.

KOLACRIL

For Acrylic Paint Enamel (Int. Cl. 2).
First use Nov. 22, 1966.

SN 263,384. Kyanize Paints, Inc., Everett, Mass. Filed Jan. 26, 1967.

ZYLOX

For Paint-Like Zinc Chromate Primer for Metals (Int. Cl. 2).
First use November 1947.

SN 263,923. Kyanize Paints, Inc., Everett, Mass. Filed Feb. 3, 1967.

KYANIZE KY PRIME

The word "Prime" is disclaimed from the mark as shown.
Owner of Reg. Nos. 60,252 and 129,333.
For Metal Primer (Int. Cl. 2).
First use July 22, 1966.

SN 264,427. Koppers Company, Inc., Pittsburgh, Pa. Filed Feb. 10, 1967.

DYNACOL

Owner of Reg. No. 782,708.
For Vinyl, Acrylic, Alkyd, and Chlorinated Rubber Protective Coatings, Including Thinners, and Primers Therefor (Int. Cl. 2).
First use Feb. 10, 1964.

Class 17 — Tobacco Products

SN 241,480. P. Lorillard Company, New York, N.Y. Filed Mar. 21, 1966.

DANVILLE

The lining on the representation of a horse in the drawing indicates shading, not color.
For Cigarettes (Int. Cl. 34).
First use Apr. 14, 1965.

SN 280,141. The American Tobacco Company, New York, N.Y. Filed Sept. 12, 1967.

NOVO

For Cigarettes (Int. Cl. 34).
First use Sept. 5, 1967.

SN 280,142. The American Tobacco Company, New York, N.Y. Filed Sept. 12, 1967.

NOVA

For Cigarettes (Int. Cl. 34).
First use Sept. 5, 1967.

Class 18 — Medicines and Pharmaceutical Preparations

SN 216,235. Clover Chemical Company, Eighty-Four, Pa. Filed Apr. 7, 1965.

For Preparation for Exterminating Worms and Other Parasites From Livestock (Int. Cl. 5).
First use Aug. 2, 1956.

SN 252,976. Veterinary Research Institute, Dallas, Tex., assignee of Veterinary Supply Depot Incorporated, Dallas, Tex. Filed Aug. 23, 1966.

BOVIM

For Vitamin and Mineral Nutritional Preparation for Veterinary Use, (Int. Cl. 5).
First use Aug. 11, 1966.

SN 259,337. Otsuka Chemical Co., Ltd., Higashi-ku, Osaka, Japan. Filed Nov. 23, 1966.

UNIFOAM

For Vesicatory (Int. Cl. 5).
First use September 1960; in commerce Sept. 1, 1960.

SN 259,338. Otsuka Chemical Co., Ltd., Higashi-ku, Osaka, Japan. Filed Nov. 23, 1966.

AZOFOAM

For Vesicatory (Int. Cl. 5).
First use September 1960; in commerce Sept. 1, 1960.

SN 262,393. Balch Flavor Company, Pittsburgh, Pa. Filed Jan. 12, 1967.

STAND-R-MIX

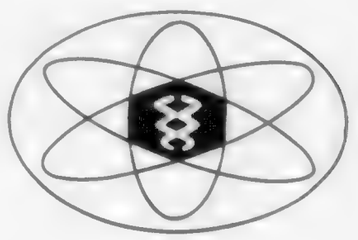
For Salts for Acid Control (Int. Cl. 5).
First use June 21, 1958.

SN 264,157. Neisler Laboratories, Inc., Decatur, Ill. Filed Feb. 7, 1967.

NEIPERTEC

For Radioactive Diagnostic Agent for Human Use (Int. Cl. 5).
First use on or about Jan. 23, 1967.

SN 264,158. Neisler Laboratories, Inc., Decatur, Ill. Filed Feb. 7, 1967.



For Radioactive Diagnostic and Therapeutic Agents for Human Use (Int. Cl. 5).
First use on or about Jan. 23, 1967.

SN 264,324. Kremers-Urban Company, Milwaukee, Wis. Filed Feb. 9, 1967.

PRE-PEN

For Penicilloyl Polylysine (a Compound Resulting From Bonding Penicilloic Acid to a Polymer of Lysine) Used as a Skin Test Antigen (Int. Cl. 5).
First use Jan. 19, 1967.

SN 264,740. Dow B. Hickam, Inc., Houston, Tex. Filed Feb. 15, 1967.

GRANULEX

For Pharmaceutical Preparation for the Treatment of Ulcers, Wounds, and Burns (Int. Cl. 5).
First use Dec. 21, 1964.

SN 264,900. Bristol-Myers Company, New York, N.Y. Filed Feb. 17, 1967.

FULL EFFECT

For Oral Antiseptic Mouthwash for Soothing Temporary Relief of Minor Sore Throat and Mouth Irritations (Int. Cl. 5).
First use Nov. 4, 1966.

SN 264,905. Bristol-Myers Company, New York, N.Y. Filed Feb. 17, 1967.

PURGE

For Oral Antiseptic Mouthwash for Soothing Temporary Relief of Minor Sore Throat and Mouth Irritations (Int. Cl. 5).
First use Sept. 27, 1966.

SN 267,794. Atomic Basic Chemicals Corporation, Eighty Four, Pa. Filed Mar. 29, 1967.

The lining on the shield is for shading purposes.
For Anthelmintic for Destroying Internal Parasites in Cattle, Sheep, etc., Comprising Phenothiazine (Int. Cl. 5).
First use Feb. 20, 1967.

SN 267,963. Mid-States Distributing Company, Inc., St. Paul, Minn. Filed Mar. 30, 1967.

MDC

Owner of Reg. No. 833,161.
For Vitamin Tablets, Preparation for Relief of Pain, Aspirin, and Cold Capsules (Int. Cl. 5).
First use Jan. 4, 1967.

SN 268,321. Neisler Laboratories, Inc., Decatur, Ill. Filed Apr. 4, 1967.

XENEISOL

For Radioactive Diagnostic Agent for Human Use (Int. Cl. 5).
First use on or about Mar. 21, 1967.

SN 269,689. Richardson-Merrell Inc., New York, N.Y. Filed Apr. 20, 1967.

EQUI-FLU II

For Equine Influenza Vaccine (Int. Cl. 5).
First use July 19, 1966.

SN 270,544. Bristol-Myers Company, New York, N.Y. Filed May 3, 1967.

VERSASTAPH

For Antibiotic (Int. Cl. 5).
First use Nov. 10, 1966.

SN 270,546. Bristol-Myers Company, New York, N.Y. Filed May 3, 1967.

DYNALECTAL

For Antibiotic (Int. Cl. 5).
First use Nov. 10, 1966.

SN 270,698. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed May 4, 1967.

NEO-NOVUM SQ

Owner of Reg. No. 807,166.
For Hormone Preparation (Int. Cl. 5).
First use Mar. 1, 1967.

SN 271,014. Chas. Pfizer & Co., Inc., New York, N.Y. Filed May 9, 1967.

OTC-MIX

For Antibiotic Preparation for Veterinary Use (Int. Cl. 5).
First use Oct. 16, 1958.

SN 271,234. Dermik Laboratories, Inc., Syosset, N.Y. Filed May 11, 1967.

INGRALIN

For Pharmaceutical Preparation for the Treatment of Skin Diseases (Int. Cl. 5).
First use Dec. 7, 1966.

SN 271,256. Johnson & Johnson, New Brunswick, N.J. Filed May 11, 1967.

HEAD START

For Analgesic Preparation (Int. Cl. 5).
First use Mar. 3, 1967.

SN 272,085. Norden Laboratories, Inc., Lincoln, Nebr. Filed May 22, 1967.

TEMARIL-P

For Antipruritic-Antitussive for the Relief of Pruritus and Coughs in Dogs and Cats, Used in Veterinary Medicine (Int. Cl. 5).
First use on or about July 15, 1960.

SN 280,224. Flow Laboratories Incorporated, Rockville, Md. Filed Sept. 13, 1967.

redi-***FLOW***

For Barium Sulfate Gastric Suspension (Int. Cl. 5).
First use Aug. 30, 1967.

SN 284,789. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Nov. 14, 1967.

IMUFORT

Owner of Reg. No. 627,661.
For Veterinary Biological Preparation for Vaccinating Healthy Swine Against Hog Cholera (Int. Cl. 5).
First use Nov. 1, 1967.

SN 285,174. Parke, Davis & Company, Detroit, Mich. Filed Nov. 20, 1967.

ELASE-CHLOROMYCETIN

Owner of Reg. Nos. 694,802 and 823,252.
For Ointment (Int. Cl. 5).
First use on or before Oct. 12, 1967.

SN 285,796. McNeil Laboratories, Inc., Fort Washington, Pa. Filed Nov. 29, 1967.

TYLENOL-B

Owner of Reg. No. 637,957.
For Analgesic Antipyretic Preparations (Int. Cl. 5).
First use Sept. 25, 1967.

Class 19—Vehicles

SN 249,498. The Buehler Corporation, Indianapolis, Ind. Filed July 5, 1966.

Applicant disclaims the word "Jet" apart from the mark as shown. The drawing is lined for the color red, but no claim is made for color alone. Owner of Reg. No. 702,175.
For Jet Boats (Int. Cl. 12).
First use Oct. 5, 1965; June 10, 1959, as to "Buehler."

SN 257,452. Avis Rent-A-Car System, Inc., Garden City, N.Y. Filed Oct. 28, 1966.

AVIS

Owner of Reg. Nos. 615,013, 703,700, and 758,577.
For Automotive Vehicles for Use on Public Highways (Int. Cl. 12).
First use 1953.

SN 262,607. McDowell-Wellman Engineering Company, Cleveland, Ohio. Filed Jan. 16, 1967.

PULL-TORQ

For Vessel Parts—Namely, Hatch Covers (Int. Cl. 12).
First use at least as early as January 1964.

SN 270,056. Goodyear Aerospace Corporation, Akron, Ohio. Filed Apr. 26, 1967.

PARASONIC

For Aerodynamic Decelerators in the Form of Parachutes Especially Designed for Reentry Conditions (Int. Cl. 12).
First use Dec. 3, 1965.

Class 20—Linoleum and Oiled Cloth

SN 260,650. Congoleum-Nairn Inc., Kearny, N.J. Filed Dec. 13, 1966.

SUPERGUARD

For Plastic Composition Floor Coverings in the Form of Sheets and Rolls (Int. Cl. 27).
First use Nov. 22, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 247,299. Aktiebolaget Kanthal, Hallstahammar, Sweden. Filed June 6, 1966.

Owner of U.S. Reg. No. 421,615.
For Electric Wire and Cables, Electric Resistance Wire, Rod, Strip, Ribbons, Coils, High Temperature Tubing for Electrical Heating Applications, Protection Tubes for Thermocouples, Tube Elements for High Temperature Electric Furnaces, Insulated Wire, Electrical Heating Elements and Electrodes (Int. Cl. 9).
First use Dec. 31, 1941; in commerce Jan. 14, 1942.

SN 251,414. Fisher Radio Corporation, Long Island City, N.Y. Filed Aug. 1, 1966.

BABY GRAND

For Radio Phonographs (Int. Cl. 9).
First use Feb. 27, 1966.

SN 251,541. International Telephone and Telegraph Corporation, New York, N.Y. Filed Aug. 2, 1966.

TEL-TOUCH

For Telephone Subscriber Station Systems, and Parts Therefor (Int. Cl. 9).
First use on or before June 8, 1966.

SN 252,078. Denesco, Inc., Albuquerque, N. Mex. Filed Aug. 10, 1966.

The mark is a decorative combination of the letters "d, c, and o."
For Electronic Components—Namely, High Frequency Low Pass Filters, Capacitors, Combinations and Parts Thereof (Int. Cl. 9).
First use Dec. 17, 1965.

SN 252,164. Chelsea Industries, Inc., d.b.a. Hope Webbing Company, Pawtucket, R.I. Filed Aug. 11, 1966.

ASTRO-TEX

For Electronic Lacing Tape for Use in the Electronics Industry (Int. Cl. 9).
First use July 29, 1966.

SN 253,108. Antennacraft Company, Burlington, Iowa. Filed Aug. 25, 1966.

COLORSTAR

For Television, FM and High Frequency Antennas (Int. Cl. 9).
First use Feb. 25, 1964.

SN 256,296. Microtek Electronics Inc., Cambridge, Mass. Filed Oct. 12, 1966.

MTE

For Thick-Film Electronic Modules—Namely, Resistors, Capacitors, Hybrid-Circuit Amplifiers, and Resistor-Capacitor Networks, and for Laser-Welded Electrical Weldments (Int. Cl. 9).
First use Nov. 4, 1965.

SN 258,216. Edwards Company, Inc., Norwalk, Conn. Filed Nov. 8, 1966.

SURELITE

For Automatically Controlled Electrical Emergency Lighting Units (Int. Cl. 11).
First use Jan. 21, 1966.

SN 267,977. Radar Design Corporation, Syracuse, N.Y. Filed Mar. 30, 1967.

RD

For Microwave Components—Namely, Microwave Absorber Stock, Coaxial Attenuators, Adapters, Couplers, Filters, Gain Horns, Harmonic Generators, Hybrids, Loads, Mismatch, Mounts, Multiplexers, Phase Shifters, Power Dividers, Preselectors, Slotted Sections, Terminations and Loads, Tuners, Upconverters, and Wavemeters (Int. Cl. 9).
First use on or about Mar. 1, 1963.

SN 273,799. Simplex Wire and Cable Company, Cambridge, Mass. Filed June 13, 1967.

FOAM-CEL

For Cellular Polyolefin Insulated Coaxial Cable (Int. Cl. 9).
First use Nov. 13, 1964.

Class 22—Games, Toys, and Sporting Goods

SN 246,852. Atlantic Lures, Inc., Providence, R.I. Filed May 31, 1966.

BUNKER-SPOON

For Fishing Lures (Int. Cl. 28).
First use July 31, 1956.

SN 249,035. Mr. Mod Shop, Inc., New Orleans, La. Filed June 27, 1966.

"MAN OF THE DAY"

For Bridge Sets Consisting of Playing Cards, Score Pad, and Pencil (Int. Cl. 16).
First use Apr. 7, 1966.

SN 251,494. Design Enterprises, Inc., Eau Gallie, Fla. Filed July 29, 1966.

ARITHMEQUICK

For Caged Type Toy Containing Numbered Cubes for Playing an Educational Arithmetic Game (Int. Cl. 28).
First use Sept. 21, 1965.

SN 253,795. Standard Packaging Corporation, New York, N.Y. Filed Sept. 2, 1966.

NU-VUE

For Surface Finish Applied to Playing Cards (Int. Cl. 16).
First use Mar. 20, 1963.

SN 254,898. World Toy House, Inc., d.b.a. The Toy House, St. Paul, Minn. Filed Sept. 21, 1966.

SPEEDI-KIT

For Selected Groups of Toys Contained in a Package (Int. Cl. 28).
First use on or about June 1, 1963.

SN 254,899. World Toy House, Inc., d.b.a. The Toy House, St. Paul, Minn. Filed Sept. 21, 1966.

PROFIT-PAK

For Selected Groups of Toys Contained in a Package (Int. Cl. 28).
First use on or about Oct. 25, 1965.

SN 265,406. Gene Surles Corpening, d.b.a. Corpening Game Company, Granite Falls, N.C. Filed Feb. 24, 1967.

DISCOUNT

For Equipment Sold as a Unit for Playing a Board Game (Int. Cl. 28).
First use Mar. 14, 1958.

SN 267,307. Atech Enterprises, Inc., North Amityville, N.Y. Filed Mar. 22, 1967.

ATECH

For Equipment Sold as a Unit for Playing a Parlor Game; and Balancing Toys (Int. Cl. 28).
First use Oct. 13, 1966.

SN 272,435. Western Publishing Company, Inc., Racine, Wis. Filed May 25, 1967.

PEEPUL PALS

For Dolls, Doll Clothing and Accessories; Toy House, Trunk, Animals, and Furniture; Puzzles; Plastic Toys; Puppets; and Doll Kits Including the Aforementioned Items (Int. Cl. 28).
First use Feb. 27, 1967.

SN 273,170. Milton Bradley Company, Springfield, Mass. Filed June 6, 1967.

Roll-a-Puzzle

For Equipment Sold as a Unit for Playing a Puzzle Game (Int. Cl. 28).
First use Feb. 27, 1967.

SN 277,904. Eyerly Aircraft Company, Salem, Oreg. Filed Aug. 9, 1967.

LOOP-O-PLANE

For Amusement Park and/or Carnival Type Amusement Ride (Int. Cl. 28).
First use June 1, 1933.

SN 277,905. Eyerly Aircraft Company, Salem, Oreg. Filed Aug. 9, 1967.

ROLL-O-PLANE

For Amusement Park and/or Carnival Type Amusement Ride (Int. Cl. 28).
First use Aug. 1, 1937.

SN 278,902. Douglas H. Nye, Ashfield, Mass. Filed Aug. 23, 1967.

THE FRONT NINE

For Mechanical Take Apart Puzzles (Int. Cl. 28).
First use June 30, 1967.

SN 280,452. The Ohio Art Company, Bryan, Ohio. Filed Sept. 15, 1967.

MYSTERY PISTOL

Applicant disclaims the word "Pistol" apart from the mark as shown without waiving any of its common law rights in the mark.
For Game Apparatus Comprising a Target and a Toy Pistol (Int. Cl. 28).
First use July 19, 1967.

SN 283,303. J. Chein & Company, Burlington, N.J. Filed Oct. 25, 1967.

ELEVENZEES

For Apparatus Sold as a Unit for Playing an Amusement Game of Chance (Int. Cl. 28).
First use June 1967.

SN 286,288. J. Swedlin, Inc., d.b.a. Gund Manufacturing Company, Brooklyn, N.Y. Filed Dec. 5, 1967.

ACTI-MATION

For Stuffed Toys (Int. Cl. 28).
First use Nov. 10, 1967.

SN 286,290. J. Swedlin, Inc., d.b.a. Gund Manufacturing Company, Brooklyn, N.Y. Filed Dec. 5, 1967.

BEST OF BREED

For Stuffed Toys in Simulation of Animals (Int. Cl. 28).
First use Oct. 16, 1967.

SN 286,290. J. Swedlin, Inc., d.b.a. Gund Manufacturing Company, Brooklyn, N.Y. Filed Dec. 5, 1967.

TENDER LEE

For Stuffed Toys in Simulation of Animals (Int. Cl. 28).
First use Nov. 6, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 246,350. Nippon Tenshashi Habushiki Kaisha, Higashisumiyoshi-ku, Osaka, Japan. Filed May 23, 1966.

For Cutters and Knives (Int. Cl. 8).
First use April 1962; in commerce October 1962.

SN 249,594. Sunbeam Corporation, Chicago, Ill. Filed July 5, 1966.

LAWN BUTLER

For Lawn Mowers Adaptable for Leaf and Debris Pickup and Collection (Int. Cl. 7).
First use May 14, 1966.

SN 257,668. Theodore Equipment Corporation, Wood-Ridge, N.J. Filed Oct. 31, 1966.

TEDDY

Owner of Reg. No. 825,218.
For Conveyors—Namely, Live Roller Conveyors, Gravity Roller Conveyors, Flat Belt Conveyors, Chain Belt Conveyors, Flight Link-Belt Conveyors, Chain-Belt Flight-Attachment Conveyors of the Horizontal, Vertical and Inclined Variety for Overhead, Table Level, Under-Floor and Under-Ceiling Level Applications (Int. Cl. 7).
First use June 1, 1966.

SN 258,221. Ford Motor Company, Dearborn, Mich. Filed Nov. 8, 1966.

ROTUNDA

For Hydraulic Lifts, Hydraulic Jacks, Power Tools—Namely, Wrenches, Bolt and Nut Drivers, Screwdrivers, and Hammers (Int. Cl. 7).
First use Dec. 27, 1963.

SN 259,327. John R. Lebb Distributors Inc. Moonachie, N.J. Filed Nov. 23, 1966.

BAG-O-MAT

For Shopping Bag Vending Machines (Int. Cl. 7).
First use Nov. 16, 1966.

SN 262,983. Utica Cutlery Company, Utica, N.Y. Filed Jan. 20, 1967.

UTI-KUT

For Kitchen Cutlery—Namely, Knives (Int. Cl. 8).
First use Aug. 17, 1966.

SN 263,168. General Equipment Co., Owatonna, Minn. Filed Jan. 24, 1967.

DIG-A-MOBILE

For Power Diggers (Int. Cl. 7).
First use Nov. 28, 1966.

SN 264,755. Package Machinery Company, East Longmeadow, Mass. Filed Feb. 15, 1967.

REED

Owner of Reg. No. 668,953.
For Plastic Molding Machines and Parts (Int. Cl. 7).
First use Nov 18, 1965.

SN 267,124. Buffalo Forge Company, Buffalo, N.Y. Filed Mar. 20, 1967.

ECON-O-RATED

For Centrifugal Pumps (Int. Cl. 7).
First use Feb. 20, 1967.

SN 268,947. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Apr. 12, 1967.

Fuller

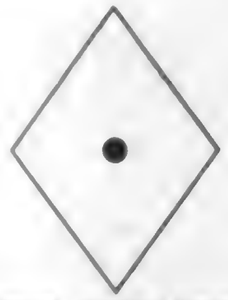
Owner of Reg. No. 527,995.
For Vehicle Gear Change Speed Transmissions and Parts Thereof Consisting of Clutches, Gears, and Supporting Shaft (Int. Cl. 12).
First use during the year 1937.

SN 269,498. The Harker Manufacturing Company, Tampa, Fla. Filed Apr. 19, 1967.

"Mr Can"

For Can Washers, Bag Unloaders, Conveyors, and Other Can Handling Equipment (Int. Cl. 7).
First use Jan. 15, 1946.

SN 269,914. McGraw-Edison Company, Elgin, Ill. Filed Apr. 12, 1967.



For Pruners, Clippers, Pruning Shears, Lopping Shears, Hedge Cutting Shears, Grass Cutters, Snippers, and Tree Pruners (Int. Cl. 8).
First use October 1966.

SN 269,920. Oneida Ltd., Oneida, N.Y. Filed Apr. 24, 1967.

WHISPERING SAND

For Stainless Steel Flatware (Int. Cl. 8).
First use Apr. 7, 1967.

SN 270,345. John Blue Company, Incorporated, Huntsville, Ala. Filed May 1, 1967.

BLUE

Owner of Reg. No. 354,308.
For Agriculture Equipment—Namely, Insecticide, Herbicide, and Fertilizer Distributors and Equipment and Replacement Parts Therefor (Int. Cl. 7).
First use on or about Dec. 1, 1964; at least as early as 1886 as to "Blue."

SN 270,367. Evans-Aristocrat Industries, Inc., Elizabeth, N.J. Filed May 1, 1967.

MINI-KNIFE

For Knives (Int. Cl. 8).
First use Oct. 21, 1966.

SN 270,498. Mar Hook & Equipment, Inc., Aberdeen, Wash. Filed May 2, 1967.

MAR

For Equipment and Machinery for the Forest Industry—Namely, Traveling Bridge Cranes, Logging Truck Trailer Hoists, Log Grapple-Tongs, Self-Releasing Hooks, Automatic Log Grapples, Shovel Heeling Racks for Loading Logs, Sky Carriages, Mechanical Tree Harvesters, and Automatic Tree Planters (Int. Cl. 7).
First use at least as early as 1954.

SN 271,138. John Dusenbery Company, Inc., Clifton, N.J. Filed May 10, 1967.

For Machines for Slitting and Rewinding Paper, Film, Foil, and the Like (Int. Cl. 7).
First use Mar. 21, 1967.

SN 272,947. Litton Business Systems, Inc., New York, N.Y., by merger and change of name from Royal Typewriter Company, Inc., Hartford, Conn. Filed June 2, 1967.

REDSTONE

For Typewriters and Parts Thereof (Int. Cl. 16).
First use on or about Sept. 19, 1966.

SN. 272,953. Litton Business Systems, Inc., New York, N.Y., by merger and change of name from Royal Typewriter Company, Inc., Hartford, Conn. Filed June 2, 1967.

RANGER

For Typewriters and Parts Thereof (Int. Cl. 16).
First use on or about Sept. 16, 1966.

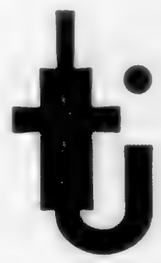
SN 272,959. The Stephan Co., Fort Lauderdale, Fla. Filed June 2, 1967.

ACU-CUT

For Hair Thinning Shears (Int. Cl. 8).
First use Mar. 11, 1967.

Class 26—Measuring and Scientific Appliances

SN 253,801. Temtech, Inc., Santa, Ana, Calif. Filed Sept. 2, 1966.



For Temperature Transducers—Namely, Resistance Temperature Transducers, Voltage Temperature Transducers, Thermistor Temperature Transducers, Thermocouple Temperature Transducers, Thermowells, Thermowell Assemblies, Temperature Sensor Heaters; and Electronic Instruments, Devices, and Systems for Use With Temperature Transducers—Namely, Signal Conditioners for Resistance Temperature Transducers, Signal Conditioners for Resistance Strain Gauges, Signal Conditioners for Thermocouples, Signal Conditioners for Signal Conditioning Amplifiers, Temperature Bridges, Multichannel Temperature Bridges, Thermocouple Reference Junctions, Temperature Telemeters, On-Off Temperature Controllers, Differential Temperature Switches, Temperature Proportional Controllers, Temperature Meters, Pyrometer Systems, Multichannel Digital Temperature Indicators, Digital Temperature Indicators, Temperature Indicating Systems, Temperature Indicator/Controllers, Digital Data Recorders for Temperature Measurements, Temperature Alarm Units and Recorders, Temperature Measuring Systems, Instrumentation Power Supplies, Temperature Calibration Systems, and Calorimeters (Int. Cl. 9).
First use in or before December 1960 on temperature transducers.

SN 253,802. Temtech, Inc., Santa Ana, Calif. Filed Sept. 2, 1966.

TEMTECH

For Temperature Transducers—Namely, Resistance Temperature Transducers, Voltage Temperature Transducers, Thermistor Temperature Transducers, Thermocouple Temperature Transducers, Thermowells, Thermowell Assemblies, Temperature Sensor Heaters; and Electronic Instruments, Devices, and Systems for Use With Temperature Transducers—Namely, Signal Conditioners for Resistance Temperature Transducers, Signal Conditioners for Resistance Strain Gauges, Signal Conditioners for Thermocouples, Signal Conditioners for Signal Conditioning Amplifiers, Temperature Bridges, Multichannel Temperature Bridges, Thermocouple Reference Junctions, Temperature Telemeters, On-Off Temperature Controllers, Differential Temperature Switches, Temperature Proportional Controllers, Temperature Meters, Pyrometer Systems, Multichannel Digital Temperature Indicators, Digital Temperature Indicators, Temperature Indicating Systems, Temperature Indicator/Controllers, Digital Data Recorders for Temperature Measurements, Temperature Alarm Units and Recorders, Temperature Measuring Systems, Instrumentation Power Supplies, Temperature Calibration Systems, and Calorimeters (Int. Cl. 9).
First use in or before March 1962 on temperature transducers.

SN 261,936. Litton Systems, Inc., Minneapolis, Minn. Filed Jan. 4, 1967.

SPARSA

For Radiosonde Electrometers for Detecting, Measuring, and Analyzing Atmospheric Electrical Signals (Int. Cl. 9).
First use on or about May 11, 1962.

SN 263,754. Electronics Systems Engineering Co., Cushing, Okla. Filed Feb. 1, 1967.

Speedmaster

For Electronic Densitometers and Electronic Neutral Density Color Analysers (Int. Cl. 9).
First use Oct. 1, 1964.

SN 265,840. National Instrument Co., Inc., Baltimore, Md. Filed Mar. 2, 1967.

Filamatic

Owner of Reg. No. 578,754.
For Vial Filling Machines That Measure Specific Quantities of Liquids, Semi-Liquids, Powders, and Paste and Then Fill Containers With the Measured Quantities (Int. Cl. 9).
First use Feb. 1, 1950.

SN 267,312. David P. Bushnell, Altadena, Calif. Filed Mar. 22, 1967.

SKY CHIEF

For Telescopes (Int. Cl. ■).
First use May 8, 1958.

SN 268,615. Renauld International, Ltd., Burlingame, Calif. Filed Apr. 7, 1967.

SHADES OF RENAULD

Owner of Reg. Nos. 777,360, 792,190, and 803,054.
For Sunglasses (Int. Cl. 9).
First use on or about Feb. 1, 1967.

SN 271,474. Isco Optische Werke GmbH, Gottingen, Germany. Filed May 15, 1967.

ISCO

Owner of Reg. Nos. 623,438 and 762,298.
For Optical Objectives (Int. Cl. 9).
First use Apr. 4, 1955; in commerce Apr. 4, 1955.

SN 271,475. Isco Optische Werke GmbH, Göttingen, Germany. Filed May 15, 1967.

ISCO

Owner of Reg. Nos. 623,438 and 762,298.
For Optical Objectives (Int. Cl. 9).
First use Apr. 4, 1955; in commerce Apr. 4, 1955.

SN 272,167. Clary Corporation, San Gabriel, Calif. Filed May 23, 1967.

CLARY

For Computers (Int. Cl. 9).
First use on or before May 13, 1958.

SN 275,704. Taisei Kogaku Kogyo Co., Ltd., Omiya-Shi, Japan. Filed July 10, 1967.

ADAPT-A-MATIC

For Interchangeable Camera Lens (Int. Cl. 9).
First use May 15, 1967; in commerce May 15, 1967.

Class 27 — Horological Instruments

SN 277,054. Les Fils de A. Donze-Baume, Les Breuleux, Switzerland. Filed July 28, 1967.

Priority claimed under Sect. 44(d) on Swiss Reg. No. 222,857, dated Feb. 1, 1967.
For Watches and Parts Thereof and Cases and Assemblies Therefor (Int. Cl. 14).

Class 28 — Jewelry and Precious-Metal Ware

SN 277,201. Oneida Ltd., Oneida, N.Y. Filed July 31,, 1967.

TERAMO

For Sterling Silver Flatware (Int. Cl. 8).
First use July 5, 1967.

SN 277,203. Oneida Ltd., Oneida, N.Y. Filed July 31, 1967.

DOVER

For Sterling Silver Flatware (Int. Cl. 8).
First use July 5, 1967.

SN 277,470. Peer Jewelry Mfg. Corp., Mineola, N. Y. Filed Aug. 3, 1967.

For Charms, Bracelets, Cufflinks, Pendants, Pins, Earrings, and Other Items of Jewelry (Int. Cl. 14).
First use July 25, 1967.

SN 278,410. Ute M. Oech, d.b.a. Ute, Philadelphia, Pa. Filed Aug. 16, 1967.

For Jewelry (Cuff Links, Earrings, Pins, Bracelets, Necklaces, Rings, Crowns) and Small Figures in Precious Metals (Gold and Silver) (Int. Cl. 14).
First use July 1, 1958.

SN 278,856. Veeroomull's Incorporated, New Yurk, N.Y. Filed Aug. 23, 1967.

Hula Hoop

For Jewelry of Precious Metal, With Precious and Semi-Precious Stones and Gems (Int. Cl. 14).
First use Feb. 28, 1967.

SN 278,857. Veeroomull's Incorporated, New York, N.Y. Filed Aug. 23, 1967.

VEEROOMULL'S

For Jewelry of Precious and Non-Precious Metal, With Precious and Semi-Precious Stones and Gems (Int. Cl. 14).
First use Feb. 28, 1967.

Class 29 — Brooms, Brushes, and Dusters

SN 257,293. Metro Wholesale Corporation, New York, N.Y. Filed Oct. 26, 1966.

DURACREST

Owner of Reg. Nos. 716,061, 811,624, and others.
For Accessories for Floor Polishing Machines—Namely, Fiber Brushes anod Polishing Pads of Wool, Felt, and Nylon, Terry Tile Cloths, Cleaning Brushes, Mops, Brooms, Paint Brushes, Dusting Cloths, and Flannel Dusters (Int. Cl. 21 and 16).
First use July 1961 on terry tile cloths.

Class 30 — Crockery, Earthenware, and Porcelain

SN 271,793. Haruta & Co., Inc., New York, N.Y. Filed May 18, 1967.

Without waiver of applicant's common law rights, with respect to the combination of words constituting applicant's trademark, applicant disclaims any right to the word "China" except as part of the mark as shown.
For China Tableware (Int. Cl. 21).
First use about 1931.

SN 271,794. Haruta & Co., Inc., New York, N.Y. Filed May 18, 1967.

EMPRESS CHINA

Without waiver of applicant's common law rights, with respect to the combination of words constituting applicant's trademark, applicant disclaims any right to the word "China" except as part of the mark as shown.
For China Tableware (Int. Cl. 21).
First use about Jan. 30, 1967.

Class 31 — Filters and Refrigerators

SN 267,968. McQuay, Inc., Minneapolis, Minn. Filed Mar. 30, 1967.

ZEROPAK

Owner of Reg. No. 518,013.
For Blower Type Storage Room Coolers (Int. Cl. 11).
First use in or about October 1938.

SN 271,760. The Meadowbrook Company, Miami, Fla. Filed May 18, 1967.

FILTA-PURE

The word "Pure" is disclaimed apart from the mark as shown.
For Water Filters and Water Filters Having Chemical Additive Means Associated Therewith (Int. Cl. 11).
First use Oct. 14, 1966.

Class 32 — Furniture and Upholstery

SN 258,877. American Furniture Co., Inc., Martinsville, Va. Filed Nov. 17, 1966.

WONDERWOOD

For Hardwood and Vinyl Veneer Sold as a Component of Furniture—Namely, Bedroom, Dining Room, Upholstered, and Occasional Furniture (Int. Cl. 20).
First use on or about Apr. 18, 1966.

SN 260,932. Gingher Manufacturing Company, Inc., Scranton, Pa. Filed Dec. 16, 1966.

CHECK TREE

For Clothes Racks (Int. Cl. 20).
First use on or about July 3, 1957.

SN 264,494. American Hospital Supply Corporation, Evanston, Ill. Filed Feb. 13, 1967.

TOMAC

Owner of Reg. Nos. 326,450, 732,775, and 836,601.
For Beds, Desks, Chairs, Overbed Tables, Footstools, Bedside Tables, and Cabinets; Utility and Work Tables; Pillows; Mattress, Revolving Stools, Bed Bumpers; Bed-Chair Combinations; and Filing Cabinets (Int. Cl. 20).
First use on or before Nov. 1, 1959.

Class 33 — Glassware

SN 253,289. The Downtowner Corporation, Memphis, Tenn. Filed Aug. 29, 1966.

DOWNTOWNER
MOTOR INNS

No registration rights are claimed for the words "Motor Inns," apart from the mark as shown. Owner of Reg. Nos. 737,345, 818,852, and others.
For Water Glasses (Int. Cl. 21).
First use Dec. 14, 1964.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 257,296. Metro Wholesale Corporation, New York, N.Y. Filed Oct. 26, 1966.

DURACREST

Owner of Reg. Nos. 716,061, 811,624 and others.
For Gas Hot Water Heaters, Barbecue Grills, and Electric Humidifiders (Int. Cl. 11).
First use July 1962 on gas hot water heaters.

SN 285,089. Feeders Engineering and Equipment Development Co., Inc., Tucson, Ariz. Filed Nov. 17, 1967.

FEEDCO

For Grain Processing Equipment—Namely, a Grain Drying, Moisturizing, and Conditioning Unit (Int. Cl. 11).
First use Feb. 2, 1967.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 255,915. O.K. Tire and Rubber Company, Inc., Littleton, Colo. Filed Oct. 6, 1966.

STARNADO

Owner of Reg. Nos. 747,301, 749,788, and others.
For Vehicle Tires (Int. Cl. 12).
First use on or about Aug. 29, 1966.

SN 263,043. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Jan. 23, 1967.

FIDESTA NEW YORKER

Owner of Reg. No. 838,801.
For Resilient Vehicle Tires (Int. Cl. 12).
First use Dec. 20, 1966.

SN 285,208. Dayco Corporation, Dayton, Ohio. Filed Nov. 20, 1967.

AIRCON-DUCT

For Fluid Conveying Hose (Int. Cl. 17).
First use on or about Oct. 18, 1967.

SN 285,209. Dayco Corporation, Dayton, Ohio. Filed Nov. 20, 1967.

DAY-TRAC

For Power Transmission Belts (Int. Cl. 7).
First use on or about Mar. 29, 1967.

Class 36 — Musical Instruments and Supplies

SN 252,750. Remo, Inc., North Hollywood, Calif. Filed Aug. 19, 1966.

REMO

For Drumheads, Banjo Heads, Drum Practice Pads, and Drum Practice Stands (Int. Cl. 15).
First use June 11, 1957.

Class 37 — Paper and Stationery

SN. 261,601. Stellar Systems Corporation, Silver Spring, Md. Filed Dec. 28, 1966.

STELLAR SYSTEMS

The word "Systems" is disclaimed apart from the mark as shown.
For Business and Accounting Forms (Int. Cl. 16).
First use Sept. 5, 1961.

SN 266,248. Monsanto Company, St. Louis, Mo. Filed Mar. 8 1967.

MONPREG

For Impregnated Overlay Paper (Int. Cl. 16).
First use Dec. 28, 1966.

SN 267,528. Ketcham & McDougall, Inc., Roseland, N.J. Filed Mar. 24, 1967.

BULLETIN BALL

For Noteholder in the Form of a Ball for Holding Pens or Pencils or Paper (Int. Cl. 16).
First use Dec. 2, 1965.

SN 267,919. Consortium du Papier Peint, Villeurbanne, France. Filed Mar. 30, 1967.

INALTERA

For Wall Papers (Int. Cl. 27).
First use Jan. 4, 1951; in commerce March 1959.

SN 270,529. Wright-Capone, Inc., New York, N.Y. Filed May 3, 1967.

GRAPHIC-PAK

For Stationery Kits Containing Paper, Envelopes, and Pens (Int. Cl. 16).
First use Nov. 2, 1966.

SN 271,934. The Gilman Brothers Company, Gilman, Conn. Filed May 19, 1967.

GILFOLD

For Book Binders, Notebook Covers, and Loose-Leaf Covers (Int. Cl. 16).
First use Sept. 20, 1966.

SN 272,124. West Virginia Pulp and Paper Company, New York, N.Y. Filed May 22, 1967.

CELEBRATION

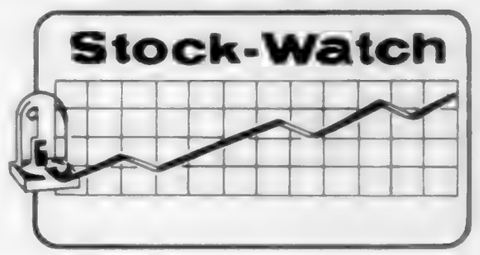
For Greeting Card Stock (Int. Cl. 16).
First use May 11, 1967.

SN 272,436. Weyerhaeuser Company, Tacoma, Wash. Filed May 25, 1967.

STARWHITE

For Paper Used for Text and Cover (Int. Cl. 16).
First use 1955.

SN 272,613. James E. Klostermann, d.b.a. Chatham Company, Dayton, Ohio. Filed May 29, 1967.



Owner of Reg. No. 828,588.
For Portfolio and Removable Forms Attachable Therein Particularly Adapted for Use for Investment Records (Int. Cl. 16).
First use Nov. 1, 1964.

SN 273,772. Hassenfeld Bros. Inc. Pawtucket, R.I. Filed June 13, 1967.

TRIPLET

For Erasers (Int. Cl. 16).
First use on or about Mar. 17, 1967.

SN 273,814. Union Camp Corporation, New York, N.Y. Filed June 13, 1967.

SANOWITE

Owner of Reg. No. 434,593.
For Wrapping Paper (Int. Cl. 16).
First use July 1, 1963.

SN 273,900. Oxford Filing Supply Co., Inc., Garden City, N.Y. Filed June 14, 1967.

PLANNIT

For Visible Card Index System Consisting of a Slotted Folder and Notched Cards Mounted in the Slots in Echelon (Int. Cl. 16).
First use May 22, 1967.

SN 274,063. Hammermill Paper Company, Erie, Pa. Filed June 16, 1967.

LOCK HAVEN

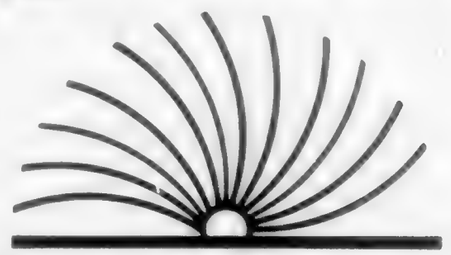
For Book Publishing Papers (Int. Cl. 16).
First use Apr. 18, 1967.

SN 274,539. Niagara Envelope Company, Inc., Buffalo, N.Y. Filed June 22, 1967.

RAWHIDE

For Kraft Envelopes (Int. Cl. 16).
First use about Jan. 1, 1937.

SN 275,266. Holum & Sons Co., Inc., Berkeley, Ill. Filed July 3, 1967.



For Ring Binders (Int. Cl. 16).
First use June 1, 1964.

SN 278,921. T.G. & Y. Stores Company, Oklahoma City, Okla. Filed Aug. 23, 1967.

GOLDEN T

For Blank Notebooks (Int. Cl. 16).
First use June 26, 1967.

Class 38 — Prints and Publications

SN 237,038. Russell Industries, Inc., Lynbrook, N.Y. Filed Jan. 21, 1966.

MAR KIT

The drawing is lined for the color gold.
For Printed Transfer Material, Comprising Lettering and the Like Carried on One Face of a Transparent Film for Transfer to a Permanent Base, Such as Cardboard, Paper, Glass, Plastic, and the Like, by Rubbing the Other Face of the Transparent Film While the Film Is Held Against the Permanent Base (Int. Cl. 16).
First use Oct. 1, 1965.

SN 253,497. Clairol Incorporated, New York, N.Y. Filed Aug. 31, 1966.

CLAIROL NEWS

For Periodical Newsletter Circulated to the Beauty Salon, Beauty Parlor, and Hair Dressing Trade (Int. Cl. 16).
First use November 1954.

SN 256,562. Lawrence Katzman, New York, N.Y. Filed Oct. 17, 1966.

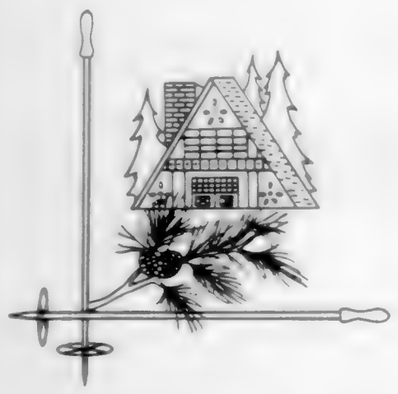
Nellie Nifty

For Cartoons as Applied to a Series of Books of Uniform Appearance Which Are Issued Periodically (Int. Cl. 16).
First use Nov. 15, 1950.

SN 267,327. The First Community Church of Columbus, Ohio, Columbus, Ohio. Filed Mar. 22, 1967.

For Weekly Newspaper and Printed Educational Leaflets and Brochures Published Periodically, Distributed to the Public Generally and Especially to the Membership of the First Community Church (Int. Cl. 16).
First use July 1962.

SN 268,019. Robert D. Benedict, d.b.a. Otsego County Herald-Times, Gaylord, Mich. Filed Mar. 31, 1967.



For Newspaper Published Periodically (Int. Cl. 16).
First use Jan. 5, 1967.

SN 268,057. Milgram Food Stores, Inc., d.b.a. Tasty Tested Recipes, Kansas City, Mo. Filed Mar. 31, 1967.

TASTY TESTED

For Printed Recipes (Int. Cl. 16).
First use Jan. 16, 1967.

SN 268,542. Welcome Wagon International, Inc., Memphis, Tenn. Filed Apr. 6, 1967.

Welcome Wagon News

Owner of Reg. No. 439,421, and others.
For News Bulletins and Newspapers of Particular Interest to Persons Connected With the User, for Example Representatives, Sponsors, and the Like (Int. Cl. 16).
First use February 1953.

SN 271,270. Norcross, Inc., New York, N.Y. Filed May 11, 1967.

TENDER TIGERS

For Greeting Cards (Int. Cl. 16).
First use Mar. 29, 1967.

SN 271,271. Norcross, Inc., New York, N.Y. Filed May 11, 1967.

GOOD GUYS

For Greeting Cards (Int. Cl. 16).
First use Mar. 29, 1967.

SN 271,509. Parents' Magazine Enterprises, Inc., New York, N.Y. Filed May 15, 1967.

EXPECTING

For Magazine Published From Time to Time (Int. Cl. 16).
First use May 2, 1967.

SN 271,537. Simon & Shuster, Inc., New York, N.Y. Filed May 15, 1967.

ESSANDESS

For Books (Int. Cl. 16).
First use in the year 1961.

SN 271,984. Heart-O-Gold Corporation, Philadelphia, Pa. Filed May 22, 1967.

"THE GREETING WITH A FUTURE"

For Greeting Cards for Facilitating the Giving of a Gift (Int. Cl. 16).
First use May 15, 1967.

Class 39 — Clothing

SN 235,902. Dent, Allcraft & Company Limited, London, England. Filed Jan. 6, 1966.

The word "Glove" and the representation of a glove are disclaimed apart from the mark as shown. Owner of U.S. Reg. No. 80,990.
For Gloves (Int. Cl. 25).
First use at least the year 1914; in commerce Jan. 1, 1914.

SN 240,163. Eugene Usow Mfg. Co., Chicago, Ill. Filed Mar. 4, 1966.

SKAGWAY

For Clothing—Namely, Jackets, Coats, Pants, Insulated Underwear, Vests, Socks, Coveralls, and Stadium Bags (Int. Cl. 25).
First use in or before June 1940.

SN 246,916. Lynne Manufacturing Co., Long Island City, N.Y. Filed May 31, 1966.

For One-Piece and Two-Piece Ladies' Dresses and Ladies' Blouses (Int. Cl. 25).
First use Dec. 1, 1961, on ladies' dresses.

SN 252,604. United States Rubber Company, New York, N.Y. Filed Aug. 17, 1966.

MASTER MOLDED

Applicant disclaims the word "Molded" apart from the mark as shown, but does not waive its comomn law rights.
For Waterproof Footwear (Int. Cl. 25).
First use July 19, 1966.

SN 255,668. The Wurzburg Company, Grand Rapids, Mich. Filed Oct. 3, 1966.

For Men's Clothing—Namely, Men's Suits, Jackets, Slacks, Shirts, Sweaters, Ties, and Socks (Int. Cl. 25).
First use Nov. 29, 1965.

SN 255,808. Marx-Haas Clothing Co., St. Louis, Mo. Filed Oct. 5, 1966.

BENNETT OF NEW HAVEN

The phrase "Of New Haven" is disclaimed apart from the mark as shown.
For Men's and Boys' Suits, Sport Coats, Slacks, and Rainwear (Int. Cl. 25).
First use Oct. 25, 1962.

SN 257,060. Little Topsy's, Inc., New York, N.Y. Filed Oct. 24, 1966.

TOPSY TEENS

The word "Teens" is disclaimed apart from the mark as shown.
For Children's and Juniors' Knitted Blouses, Shirts, Skirts, Slacks, and Combinations Thereof (Int. Cl. 25).
First use Jan. 2, 1960.

SN 257,497. Levi Strauss & Co., San Francisco, Calif. Filed Oct. 28, 1966.

For Trousers, Jackets, Shorts, Shirts, Skirts, and Vests (Int. Cl. 25).
First use Oct. 10, 1966.

SN 258,502. Alex Colman Inc., Los Angeles, Calif. Filed Nov. 14, 1966.

SHAN STRETCH

The word "Stretch" is disclaimed apart from the mark as shown.
For Ladies' Pants (Int. Cl. 25).
First use Aug. 1, 1963.

SN 259,268. Service Manufacturing Company, Inc., Yonkers, N.Y. Filed Nov. 22, 1966.

BEAUFORT

For Riding Apparel—Namely, Hats, Rain Jackets, Belts, Gloves, Shirts, and Pull-Overs (Int. Cl. 25).
First use Mar. 2, 1964.

SN 260,105. University Sportswear of California, Los Angeles, Calif. Filed Dec. 5, 1966.

NIKKI OF CALIFORNIA

Applicant disclaims the words "Of California" apart from the mark as shown.
For Women's Sportswear—Namely, Blouses, Jumpers, Dresses, Skirts, Slacks, Jackets, Shirts, Coats, and Sweaters (Int. Cl. 25).
First use on or about Nov. 1, 1964.

SN 260,106. University Sportswear of California, Los Angeles, Calif. Filed Dec. 5, 1966.

For Women's Sportswear—Namely, Blouses, Jumpers, Dresses, Skirts, Slacks, Jackets, Shirts, Coats, and Sweaters (Int. Cl. 25).
First use on or about Sept. 26, 1966.

SN 260,321. Doe Spun, Inc., York, Pa. Filed Dec. 8, 1966.

DOE-SPUN

For Knitted and Woven Garments—Namely, Infants' and Children's Dresses, Shorts, Slacks, Sweaters, Pant and Shirt Sets, Suits, Shirts, Sun Suits, Creepers, Rompers, and Jump Suits (Int. Cl. 25).
First use on or about Jan. 1, 1947.

SN 260,599. Slumbertogs, Inc., New York, N.Y. Filed Dec. 12, 1966.

Juli OF SLUMBERTOGS

Owner of Reg. Nos. 599,094, 808,881, and others.
For Nightgowns, Robes, and Pajamas (Int. Cl. 35).
First use Dec. 1, 1966.

SN 262,612. Arnold D. Palmer, Cleveland, Ohio. Filed Jan. 16, 1967.

Owner of Reg. No. 750,915.
For Shirts, Slacks, Walking Shorts, Sport Jackets, Sweaters, and Hats (Int. Cl. 25).
First use 1960.

SN 263,476. Phillips-Van Heusen Corporation, New York, N.Y. Filed Jan. 27, 1967.

VAN HEUSEN GEAR

The word "Gear" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 653,800, 728,039, and 767,216.
For Men's and Boys' Shirts, Cuffs, Collars, Pajamas, Sports Shirts, Underwear, Knit Shirts, and Slacks and Sweaters (Int. Cl. 25).
First use Dec. 15, 1966.

SN 264,764. Slumbertogs, Inc., New York, N.Y. Filed Feb. 15, 1967.

DHOTI-NITI By JULI

A "Dhoti" is an outer garment worn by men in India. Owner of Reg. Nos. 599,094, 808,881, and others.
For Gowns and Pajamas (Int. Cl. 25).
First use Jan. 31, 1967.

SN 264,765. Slumbertogs, Inc., New York, N.Y. Filed Feb. 15, 1967.

KAPPOGI-NITI By JULI

A "Kappogi" is a jacket-type garment worn in Japan. Owner of Reg. Nos. 599,094, 808,881, and others.
For Sleepwear (Int. Cl. 25).
First use Jan. 25, 1967.

SN 265,026. A. S. Beck Shoe Corporation, New York, N.Y. Filed Feb. 20, 1967.

A. S. BECK HIGH SCHOOL SHAREHOLDERS

Owner of Reg. Nos. 693,556, 695,384, and others.
For Shoes for Men, Women, and Juniors (Int. Cl. 25).
First use Jan. 13, 1967.

SN 265,591. Van Raalte Company, Inc., New York, N.Y. Filed Feb. 28, 1967.

TAFFEKNIT

For Petticoats and Slips (Int. Cl. 25).
First use Mar. 25, 1963.

SN 266,342. Mamiye Brothers Inc., New York, N.Y. Filed Mar. 9, 1967.

BULL TIGER

For Pants, Jackets, Shirts, and Shorts (Int. Cl. 25).
First use Feb. 10, 1966.

SN 267,003. Blue Gem Manufacturing Company, Greensboro, N.C. Filed Mar. 17, 1967.

TAREY PRESS

The word "Press" is disclaimed apart from the mark as shown. Owner of Reg. No. 763,977.
For Ladies', Boys' and Girls' Slacks, Jeans, Jackets, Shorts and Shirts, and Girls' Skirts (Int. Cl. 25).
First use Feb. 24, 1967.

SN 268,331. Phillips-Van Heusen Corporation, New York, N.Y. Filed Apr. 4, 1967.

COTTON-ROYAL

For Men's and Boys' Shirts, Cuffs, Collars, Pajamas, Sports Shirts, Underwear, Knit Shirts and Slacks and Sweaters Wholly or in Part of Cotton (Int. Cl. 25).
First use Feb. 17, 1967.

SN 269,220. Shirt Centre, Inc., New York, N.Y. Filed Apr. 14, 1967.

SHIRTS UNLIMITED

The word "Shirts" is disclaimed apart from the mark as shown.
For Men's Dress Shirts (Int. Cl. 25).
First use 1945.

SN 269,530. Garland Corporation, Brockton, Mass. Filed Apr. 19, 1967.

DYED-TO-SWITCH

For Dresses, Dress Coordinates and Sweaters (Int. Cl. 25).
First use at least as early as Apr. 5, 1967.

SN 270,160. J. Schoeneman, Inc., Owings Mills, Md. Filed Apr. 27, 1967.

GLOBAL WORSTEDS

Applicant disclaims the word "Worsteds" apart from the mark as shown.
For Men's Clothing—Namely, Suits, Coats, Vests and Pants (Int. Cl. 25).
First use Sept. 1, 1965.

SN 270,712. J. Schoeneman, Inc., Owings Mills, Md. Filed May 4, 1967.

BRITANNIA COLLECTION

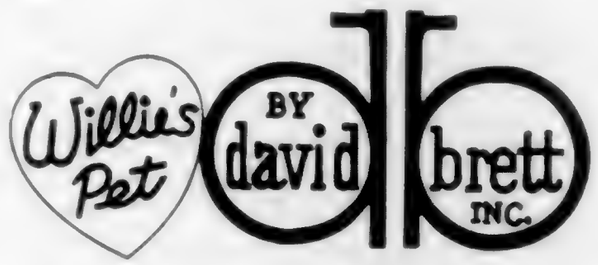
For Men's Clothing—Namely, Suits, Coats, Vests and Pants (Int. Cl. 25).
First use Dec. 2, 1965.

SN 270,976. Lowell Tjaden, Los Angeles, Calif. Filed May 8, 1967.

SEA-KINI

For Clothing—Namely, Swim Suits, Beach Coats, Bathing Caps, Sunsuits, Shorts, Slacks, Capri Pants, Skirts, Blouses, Shirts, Sweaters, Jackets, Coats, Culottes, Dresses, Gowns, Underwear, Lingerie, Sleeping Garments, Shoes, Hats, Head Scarves, Costumes and Rainwear (Int. Cl. 25).
First use Apr. 26, 1967.

SN 271,437. David Brett, Inc., Boston, Mass. Filed May 15, 1967.



For Women's Sweaters (Int. Cl. 25).
First use Apr. 7, 1967.

SN 272,291. Melville Shoe Corporation, d.b.a. Thom McAn, New York, N.Y. Filed May 24, 1967.

DRY STEP

Owner of Reg. Nos. 298,842 and 801,151.
For Shoes (Int. Cl. 25).
First use prior to Oct. 5, 1964.

SN 272,506. S. S. Kresge Company, Detroit, Mich. Filed May 26, 1967.

Owner of Reg. Nos. 743,912, 808,543, and others.
For Girls' Polo Shirts and Sleeveless Shirts, Shorts, Underwear and Sleepers (Int. Cl. 25).
First use in or before June 1965.

SN 272,805. Buster Brown Textiles, Inc., Wilmington, Del. Filed June 1, 1967.

TIGESET

For Men's, Women's and Children's Shorts and Slacks (Int. Cl. 25).
First use July 6, 1966.

SN 273,189. Farah Manufacturing Company, Inc., El Paso, Tex. Filed June 6, 1967.

For Men's and Boys' Slacks and Fabrics Sold Exclusively in the Form of Such Garments (Int. Cl. 25).
First use May 17, 1967.

SN 273,495. The Firestone Tire & Rubber Company, Akron, Ohio. Filed June 9, 1967.

For Shoes, Sneakers, Slippers, Overshoes and Boots for Men, Women and Children (Int. Cl. 25).
First use May 25, 1967.

SN 276,731. Beldoch Popper, Inc., New York, N.Y. Filed July 25, 1967.

THE HOUDINI

The name "Houdini" was that of "Harry Houdini," an American magician, who is now deceased.
For Ladies' Knitted Sweaters and Dresses (Int. Cl. 25).
First use July 3, 1967.

SN 277,133. A. S. Beck Shoe Corporation, New York, N.Y. Filed July 31, 1967.

EXPO D'ITALIA

The word "Italia" is disclaimed apart from the mark as shown. The expression "D'Italia" may be translated into English as "Of Italy."
For Shoes (Int. Cl. 25).
First use July 17, 1967.

SN 277,134. A. S. Beck Shoe Corporation, New York, N.Y. Filed July 31, 1967.

London Luvs by Coquettes

The word "London" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 623,132 and 814,538.
For Shoes for Women (Int. Cl. 25).
First use July 14, 1967.

SN 277,197. Misty Harbor, Ltd., Baltimore, Md. Filed July 31, 1967.

For Raincoats and Rain Jackets (Int. Cl. 25).
First use Mar. 15, 1967.

SN 278,190. Catalina, Inc., Los Angeles, Calif. Filed Aug. 14, 1967.

CATALINA JRS

The word "Jrs" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 236,068, 819,551, and others.
For Ladies' and Girls' Bathing Suits, Beach Jackets, Beach Robes, Pants, Skirts, Shorts, Blouses, Shirts, T-Shirts, Shifts, Dresses, Sweaters and Jackets (Int. Cl. 25).
First use July 14, 1967.

SN 278,212. Hayes Garment Company, Nashville, Tenn. Filed Aug. 14, 1967.

Haywood

For Men's and Boys' Clothing Consisting of Pants, Jeans and Shirts (Int. Cl. 25).
First use May 1, 1967.

SN 278,777. Apollo Apparel, Inc., Andalusia, Ala. Filed Aug. 22, 1967.

PERMA SONIC

For Men's Dress and Sport Shirts (Int. Cl. 25).
First use Apr. 7, 1966.

SN 279,417. J. Schoeneman, Inc., Owings Mills, Md. Filed Aug. 30, 1967.

PRES-SURE

For Men's, Youths' and Boys' Suits, Sport Coats, Vests and Pants (Int. Cl. 25).
First use Oct. 18, 1966.

SN 281,086. Paul Lavitt Mills, Inc., Hickory, N.C. Filed Sept. 25, 1967.

How-Art

For Hosiery, Socks, and Orlon Booties (Int. Cl. 35).
First use August 1965.

SN 281,647. Vaisey-Bristol Shoe Company Incorporated, Monett, Mo. Filed Oct. 2, 1967.

JUMPING-JACKS
BALANCERS

Owner of Reg. Nos. 442,147, 529,925, and others.
For Shoes (Int. Cl. 25).
First use April 1964.

SN 282,074. Goodyear Rubber Company, Middletown, Conn. Filed Oct. 9, 1967.

BADGER

For Rubber Boots and Shoes (Int. Cl. 25).
First use December 1876.

SN 282,313. Blue Bell, Inc., Greensboro, N.C. Filed Oct. 12, 1967.

BIG BEN

Owner of Reg. Nos. 534,184, 632,757, and 814,077.
For Boots (Int. Cl. 25).
First use Sept. 25, 1967.

SN 282,315. Blue Bell, Inc., Greensboro, N.C. Filed Oct. 12, 1967.

CASEY JONES

"Casey Jones" is the name of a famous American railroad engineer, now deceased. Owner of Reg. Nos. 416,313, 794,490, and others.
For Boots (Int. Cl. 25).
First use Sept. 25, 1967.

SN 282,320. Blue Bell, Inc., Greensboro, N.C. Filed Oct. 12, 1967.

WRANGLER

Owner of Reg. Nos. 441,727, 824,965, and others.
For Boots (Int. Cl. 25).
First use Sept. 22, 1967.

SN 282,680. Cluett, Peabody & Co., Inc., Troy, N.Y. Filed Oct. 17, 1967.

JIMI-JIFS

For Women's Dresses and Women's Shirts (Int. Cl. 25).
First use Aug. 18, 1967.

SN 282,950. Blue Bell, Inc., Greensboro, N.C. Filed Oct. 20, 1967.

FRONTIER MARSHALL

Owner of Reg. No. 625,464.
For Boots (Int. Cl. 25).
First use Oct. 10, 1967.

SN 282,951. Blue Bell, Inc., Greensboro, N.C. Filed Oct. 20, 1967.

OKLAHOMA KID

Owner of Reg. No. 631,829.
For Boots (Int. Cl. 25).
First use Oct. 10, 1967.

SN 283,031. Poirette Corsets, Inc., New York, N.Y. Filed Oct. 20, 1967.

MAGIC MIRROR

For Women's Foundation Garments (Int. Cl. 25).
First use Sept. 29, 1967.

SN 283,037. Philip Rothenberg & Co., Inc., New York, N.Y. Filed Oct. 20, 1967.

GIGGLE

For Ladies' and Misses' Shifts, Shirts and Blouses (Int. Cl. 25).
First use Oct. 1, 1966.

SN 283,301. Blue Bell, Inc., Greensboro, N.C. Filed Oct. 25, 1967.

BOLD VAQUERO

Owner of Reg. No. 831,489.
For Boots (Int. Cl. 25).
First use Oct. 16, 1967.

SN 283,302. Blue Bell, Inc., Greensboro, N.C. Filed Oct. 25, 1967.

SEDGEFIELD

Owner of Reg. Nos. 658,085, 677,019, and 756,931.
For Boots (Int. Cl. 25).
First use Oct. 16, 1967.

SN 283,306. Harfred, Incorporated, New York, N.Y. Filed Oct. 25, 1967.

HOUSE OF PEERS

For Fur Stoles, Capes, Jackets, and Coats (Int. Cl. 25).
First use Aug. 16, 1967.

SN 283,307. Harfred, Incorporated, New York, N.Y. Filed Oct. 25, 1967.

SANSUFINA

For Fur Stoles, Capes, Jackets, and Coats (Int. Cl. 25).
First use Aug. 16, 1967.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 254,980. Asti Products, Inc., New York, N.Y. Filed Sept. 23, 1966.

TYTRON

For Ladies' Wigs Made of Artificial Hair (Int. Cl. 26).
First use July 30, 1966.

SN 270,583. Komachiya Honten Co., Ltd., Taito-ku, Tokyo, Japan. Filed May 3, 1967.

K. M. C. Y.

For Wigs and Artificial Locks of Hair (Int. Cl. 26).
First use Mar. 1, 1925.

SN 275,799. Tresses Unlimited, Inc., New York, N.Y. Filed July 11, 1967.

FORTY WINKS

For Artificial Eyelashes (Int. Cl. 26).
First use June 15, 1967.

SN 275,800. Tresses Unlimited, Inc., New York, N.Y. Filed July 11, 1967.

TWENTY LASHES

Applicant disclaims the word "Lashes" apart from the mark as shown.
For Artificial Eyelashes (Int. Cl. 26).
First use June 15, 1967.

SN 276,219. Rex Cataldo, Wilkes-Barre, Pa. Filed July 18, 1967.

The word "Hairpieces" is disclaimed apart from the mark as shown.
For Hairpieces (Int. Cl. 26).
First use May 1, 1966.

Class 41 — Canes, Parasols, and Umbrellas

SN 259,599. Telesco Brophey Limited, Montreal, Quebec, Canada. Filed Nov. 28, 1966.

NEW YORKER

Owner of Canadian Reg. No. 144,747, dated Apr. 7, 1966.
For Umbrellas (Int. Cl. 18).

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 257,298. Metro Wholesale Corporation, New York, N.Y. Filed Oct. 26, 1966.

DURACREST

Owner of Reg. Nos. 716,061, 811,624, and others.
For Towels, Dish Cloths and Potholders (Int. Cls. 21 and 24).
First use July 1961 on towels.

SN 269,857. Harry James Carter, Riverside, N.J. Filed Apr. 24, 1967.

MAKESHIFT

For Kit of Materials and Equipment From Which a Dress Can Be Fabricated, the Fabric Material in the Kit Is That of a Woven, Non-Woven or Paper Nature (Int. Cl. 24).
First use Mar. 16, 1967.

SN 271,540. J. P. Stevens & Co., Inc., New York, N.Y. Filed May 15, 1967.

COMFORT BOND

Applicant disclaims the word "Bond" apart from the mark as shown. Owner of Reg. Nos. 699,905, 834,236, and others.
For Piece Goods of One or More Natural Fibers Including Wool and Cotton, or of Synthetic Fibers or Cellulosic Fibers, or Blends of the Foregoing (Int. Cl. 24).
First use May 4, 1967.

SN 272,169. Collins & Aikman Corporation, New York, N.Y. Filed May 23, 1967.

Kittens Eat

For Plush Fabric Made of Synthetic Fibers for Toys (Int. Cl. 24).
First use Aug. 30, 1966.

SN 272,710. Dan River Mills, Incorporated, Danville, Va. Filed May 31, 1967.

IT'S A DAN RIVER KNIT

The word "Knit" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 407,813, 432,463, and 817,854.
For Knitted Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof (Int. Cl. 24).
First use Nov. 4, 1966.

SN 274,001. Sweetwater Rug Corporation, New York, N.Y. Filed June 15, 1967.

BOLD VENTURE

For Tufted Carpeting (Int. Cl. 27).
First use June 1, 1967.
Subj. to Intf. with SN 282,286.

SN 275,021. Albany Felt Company, Albany, N.Y. Filed June 29, 1967.

FILTRATAIN

For Fabric Made of Spun or Multifilament Polypropylene (Int. Cl. 24).
First use on or about Feb. 20, 1967.

SN 275,070. William F. Niemi Co., d.b.a. Eddie Bauer, Seattle, Wash. Filed June 29, 1967.

EXPEDITION CLOTH

The word "Cloth" is disclaimed apart from the mark as shown and no claim is made to its use except in connection with the mark.
For Textile Fabric Piece Goods of Cotton and Synthetic Fibers (Int. Cl. 24).
First use on or about Aug. 1, 1966.

SN 275,221. Bibb Manufacturing Company, Macon, Ga. Filed July 3, 1967.

LANCE-LOCK

For Blankets (Int. Cl. 24).
First use Feb. 6, 1967.

SN 275,313. Stamina Mills, Inc., New York, N.Y. Filed July 3, 1967.

POLY-WARMO

For Woven Fabric Used as an Interlining in Women's and Children's Coats (Int. Cl. 24).
First use May 24, 1967.

SN 275,407. Sy Frankl, Inc., New York, N.Y. Filed July 5, 1967.

ULTRELLA

For Synthetic Textile Fabrics, Principally Comprised of Acetate and Nylon (Int. Cl. 24).
First use Mar. 27, 1967.

SN 275,549. Pendleton Woolen Mills, Portland, Oreg. Filed July 7, 1967.

BONNEVILLE

Owner of Reg. Nos. 434,538, and 439,148.
For Woolen Piece Goods and Blankets (Int. Cl. 24).
First use Mar. 9, 1946.

SN 275,922. Concord Fabrics Inc., New York, N.Y. Filed July 13, 1967.

GABFLY

For Textile Fabrics Made of Cotton and/or Synthetic Fibers and Blends Thereof (Int. Cl. 24).
First use May 1, 1967.

SN 276,315. Dan River Mills, Incorporated, Danville, Va. Filed July 19, 1967.

DANCLEAN

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof (Int. Cl. 24).
First use June 30, 1967.

SN 276,344. Park Silk Company, Inc., New York, N.Y. Filed July 19, 1967.

PARLOFIN

For Fabrics Made of Polyolefin Fibers (Int. Cl. 24).
First use May 24, 1967.

SN 282,286. Burlington Industries, Inc., Bridgeport, Pa. Filed Oct. 11, 1967.

BOLD VENTURE

For Textile Rugs and Carpets (Int. Cl. 27).
First use Aug. 4, 1965.
Subj. to Intf. with SN 274,007.

Class 43 — Thread and Yarn

SN 275,534. Kurashiki Rayon Co., Ltd., Kurashiki City, Japan. Filed July 7, 1967.

THREE GOLDEN HORSES

For Rayon Filament Yarn (Int. Cl. 23).
First use Apr. 1, 1929; in commerce June 1, 1965.

SN 275,602. The American Thread Company, New York, N.Y. Filed July 10, 1967.

KISMET

Owner of Reg. No. 67,861.
For Spool-Cotton, Sewing-Cotton and Thread (Int. Cl. 23).
First use December 1950.

SN 275,603. The American Thread Company, New York, N.Y. Filed July 10, 1967.

GEM

Owner of Reg. No. 68,793.
For Spool-Cotton, Sewing-Cotton and Thread (Int. Cl. 23).
First use December 1950.

SN 275,604. The American Thread Company, New York, N.Y. Filed July 10, 1967.

PROGRESS

Owner of Reg. No. 59,371.
For Spool-Cotton, Sewing-Cotton, and Thread (Int. Cl. 23).
First use December 1950.

SN 275,752. Filatures Prouvost-Masurel & Cie, la Lainiere de Roubaix, Roubaix (Nord), France. Filed July 11, 1967.

BAPTEME

Owner of French Reg. No. 708,299, dated Nov. 26, 1965.
For Yarn and Threads (Int. Cl. 23).

SN 275,847. Gottlieb Brothers, d.b.a. Jack Frost Yarn Co., New York, N.Y. Filed July 12, 1967.

UNCLE EPH'S

For Hand Knitting Yarns for Making Rugs (Int. Cl. 23).
First use July 1, 1966.

SN 276,368. Templon Spinning Mills, Inc., Mooresville, N.C. Filed July 19, 1967.

TEMPACA

For Yarns (Int. Cl. 23).
First use Dec. 1, 1965.

Class 44 — Dental, Medical, and Surgical Appliances

SN 241,693. Smith Kline Instrument Company, Philadelphia, Pa. Filed Mar. 23, 1966.

VISILINE

For Endoscopes and Parts Thereof (Int. Cl. 10).
First use May 4, 1965.

SN 256,560. H. Jelinek Dental Alloys, Inc., New York, N.Y. Filed Oct. 17, 1966.

JELINEK

For Mercury, Silver and Other Metallic Dental Alloys (Int. Cl. 5).
First use Jan. 1, 1938.

SN 256,727. Directa Dental AB, Johanneshov, Sweden. Filed Oct. 19, 1966.

DIRECTA

Owner of Swedish Reg. No. 114,328, dated Oct. 29, 1965.
For Surgical, Medical, Dental and Veterinary Apparatus and Instruments—Namely, Artificial Limbs, Eyes and Teeth (Int. Cl. 10).

SN 272,628. I.G.R. Corporation, New York, N.Y., assignee of Adolph Posner and Richard Inglima (joint owners), New York, N.Y. Filed May 29, 1967.

TONOMAT

For Applanation Tonometers (Int. Cl. 10).
First use on or about May 4, 1967.

SN 278,769. Dr. Merrill C. Mensor, Jr., San Mateo, Calif. Filed Aug. 22, 1967.

DALBO-M

For Dental Prosthesis Hardware (Int. Cl. 10).
First use Dec. 13, 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 274,068. Illinois Syrup Company, Chicago, Ill. Filed June 16, 1967.

Owner of Reg. No. 838,011.
For Flavoring Syrups for Making Soft Drinks (Int. Cl. 32).
First use May 1, 1966.

SN 274,811. Ma Cherie Sales Corporation of America, d.b.a. Ma Cherie Sales Corporation, St. Louis, Mo. Filed June 26, 1967.

Owner of Reg. Nos. 341,558 and 346,867.
For Soft Drinks (Int. Cl. 32).
First use 1934.

Class 46—Foods and Ingredients of Foods

SN 223,642. Colonial Stores Incorporated, Atlanta, Ga. Filed July 19, 1965.

NATUR-TENDER

For Fresh Meats and Poultry (Int. Cl. 29).
First use September 1953.

SN 249,559. The Nestle Company, Inc., White Plains, N.Y. Filed July 5, 1966.

BURGUNDY

For Chocolate Coating Used Only in Food Manufacturing (Int. Cl. 30).
First use Feb. 26, 1954.

SN 249,986. Worthmore Food Products Co., Cincinnati, Ohio, assignee of Phil J. Hock, Jr., and Howard P. Hock (joint owners), d.b.a. Phil J. Hock & Co., Cincinnati, Ohio. Filed July 11, 1966.

Applicant disclaims the words "Brand," "Chili Hot Dog Sauce With Meat" and "For Coney Islands" together with the representation of the sandwich apart from the mark as shown. Owner of Reg. Nos. 222,004, 663,540, and 684,162.
For Chili Hot Dog Sauce With Meat for Coney Islands (Int. Cl. 30).
First use June 20, 1966.

SN 250,049. Sue Ann Food Products Corporation, Chicago, Ill. Filed July 11, 1966.

Owner of Reg. Nos. 589,492 and 659,118.
For Salad Dressings; Candy; Pickles; Processed Canned Fruits; Spices; Fresh Peppers and Pickled Peppers; Sauerkraut; Fruit Preserves; Garden Salads; Canned Vegetables; Honey; Pickles and Tomato Relishes (Commonly Known as Chili Relishes) and Pickle Relishes; Beans; Meat Products—Namely, Salami and Sausages; Crackers; Cookies; Cheese; Cheese Food; and Cheese Spreads (Int. Cls. 29 and 30).
First use on or about Aug. 15, 1965.

SN 252,119. National Biscuit Company, New York, N.Y. Filed Aug. 10, 1966.

Applicant disclaims any exclusive right to the words "Cookie Treats" apart from the mark as shown.
For Cookies (Int. Cl. 30).
First use May 1, 1964.

SN 253,835. John S. Bates, d.b.a. A. M. Moore Brokerage Co., Charleston, S.C. Filed Sept. 6, 1966.

CRYSTAL BAY

For Canned Tomtaoes, Okra and Corn; Canned Tomatoes and Okra; Canned Tomatoes, Canned Cut Okra (Int. Cl. 29).
First use 1922.

SN 282,978. Suni-Citrus Products Company, Haines City, Fla. Filed Jan. 20, 1967.

LO-TEMP

For Citrus Pulp Processed Into Feed for Cattle (Int. Cl. 31).
First use Oct. 28, 1966.

SN 263,887. Bla Band Suppe-Produkter A/S (Solofabriken A/S), Copenhagen, Denmark. Filed Feb. 3, 1967.

KONGSBJERG

The literal interpretation of "Kongsbjerg" is "king's mountain" or "king's hill."
For Canned Fish and Shellfish (Int. Cl. 29).
First use May 2, 1966; in commerce May 2, 1966.

SN 265,195. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Miyakojima-ku, Osaka, Japan. Filed Feb. 21, 1967.

Applicant without waiving its common law rights herein disclaims the word "Fruits" and the representation of fruits apart from the mark as shown. Owner of Reg. Nos. 700,616, 818,255, and others.
For Fruit Flavored Chewing Gum (Int. Cl. 30).
First use Aug. 1, 1966; in commerce Oct. 14, 1966.

SN 265,310. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Miyakojima-ku, Osaka, Japan. Filed Feb. 23, 1967.

Applicant without waiving its common law rights herein disclaims the word "Coffee" and the representation of coffee beans apart from the mark as shown. Owner of U.S. Reg. No. 815,556 and others.
For Coffee Flavored Chewing Gum (Int. Cl. 30).
First use Aug. 1, 1966; in commerce Oct. 14, 1966.

SN 265,431. Pangburn Company, Inc., Fort Worth, Tex. Filed Feb. 24, 1967.

BRAZILIAN AIRES

No exclusive claim is made to the word "Brazilian" apart from the mark as shown. Owner of Reg. Nos. 560,726, 722,645, and 723,166.
For Candy (Int. Cl. 30).
First use Jan. 27, 1967.

SN 267,535. National Biscuit Company, New York, N.Y. Filed Mar. 24, 1967.

TWIDDLERS

For Biscuits and Crackers (Int. Cl. 30).
First use Mar. 6, 1967.

SN 267,538. National Biscuit Company, New York, N.Y. Filed Mar. 24, 1967.

THING-A-MAJIGS

For Biscuits and Crackers (Int. Cl. 30).
First use Mar. 6, 1967.

SN 267,539. National Biscuit Company, New York, N.Y. Filed Mar. 24, 1967.

GISMOS

For Biscuits and Crackers (Int. Cl. 30).
First use Mar. 9, 1967.

SN 270,977. Tootsie Roll Industries, Inc., Hoboken, N.J. Filed May 8, 1967.

Tootsie

Treats

The word "Treats" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 62,179, 623,182, and others.
For Candy (Int. Cl. 30).
First use Nov. 21, 1966.

SN 270,978. Tootsie Roll Industries, Inc., Hoboken, N.J. Filed May 8, 1967.

TreeTreats

The word "Treats" is disclaimed apart from the mark as shown.
For Candy (Int. Cl. 30).
First use Nov. 21, 1966.

SN 270,979. Tootsie Roll Industries, Inc., Hoboken, N.J. Filed May 8, 1967.

The words "Pops" and "Treats" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 62,179, 623,182, and others.
For Candy (Int. Cl. 30).
First use Nov. 21, 1966.

SN 271,028. Barton's Candy Corporation, Brooklyn, N.Y. Filed May 9, 1967.

BARTONETTES

Owner of Reg. Nos. 528,007, 676,417, and others.
For Candy (Int. Cl. 30).
First use Mar. 5, 1951.

SN 271,434. A. Bertolla & Sons, Loxley, Ala. Filed May 15, 1967.

DIXIE

For Fresh Potatoes in Wholesale Lots (Int. Cl. 31).
First use on or about May 8, 1937.

SN 273,193. Hesmer Foods, Inc., Evansville, Ind. Filed June 6, 1967.

OLD HEIDELBURGER

Owner of Reg. No. 817,886.
For Cheese Spread Flavored With Beer (Int. Cl. 29).
First use August 1955.

SN 273,373. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, Englewood, N.J. Filed June 8, 1967.

Applicant disclaims the word "Mint" and the representation of the goods apart from the mark as shown.
For Frozen Confections on Sticks and Liquid Concentrates for Making the Same (Int. Cl. 30).
First use Mar. 8, 1967.

SN 273,517. National Biscuit Company, New York, N.Y. Filed June 9, 1967.

ROCKET

For Biscuits (Int. Cl. 30).
First use May 29, 1967.

SN 273,888. General Foods Corporation, White Plains, N.Y. Filed June 14, 1967.

MORE

For Cereal Breakfast Food (Int. Cl. 30).
First use Apr. 21, 1967.

SN 273,898. Martrude Corporation, Maspeth, N.Y. Filed June 14, 1967.

Mi-Lem'

Owner of Reg. Nos. 732,209 and 828,283.
For Non-Alcoholic Mixes for Making Soft Drinks, Alcoholic Cocktails, and for Food and Food Beverage Purposes (Int. Cl. 32).
First use Oct. 5, 1965.

SN 278,673. Diamond Crystal Salt Company, St. Clair, Mich. Filed Aug. 21, 1967.

SALTA

For Salt (Int. Cl. 30).
First use July 25, 1967.

SN 278,730. Ralston Purina Company, St. Louis, Mo. Filed Aug. 21, 1967.

BIG 'UN

For Horse and Foal Feed (Int. Cl. 31).
First use Aug. 19, 1966.

SN 279,270. Carnation Company, Los Angeles, Calif. Filed Aug. 29, 1967.

TOP BUILD

For Fortified Milk Powder (Int. Cl. 29).
First use June 20, 1967.

SN 282,775. DCA Food Industries Inc., New York, N.Y. Filed Oct. 18, 1967.

CRISP-CEL

For Canned Diced Celery (Int. Cl. 29).
First use Oct. 4, 1967.

SN 286,879. H. P. Cannon & Son, Incorporated, Bridgeville, Del. Filed Dec. 14, 1967.

MARYDEL

Owner of Reg. No. 536,994.
For Canned Peppers (Int. Cl. 29).
First use at least Feb. 5, 1947.

SN 287,338. Rocking K Foods, Inc., Los Angeles, Calif. Filed Dec. 21, 1967.

Owner of Reg. No. 836,861.
For Frozen Prepared Meats Ready To Cook, Frozen Cooked Meats With Gravies and Sauces in the Nature of Heat and Serve Entrees (Int. Cl. 29).
First use Feb. 20, 1967.

Class 47 — Wines

SN 237,093. Ditta G.B. Carpano-Antica Fabbrica di Vermouth di Turati Rag. Silvio e C. Societa in Accomandita Semplice, Turin, Italy. Filed Jan. 24, 1966.

CARPANO

Owner of U.S. Reg. No. 311,923.
For Vermouths (Int. Cl. 33).
First use Aug. 22, 1889; in commerce Apr. 10, 1948.

SN 246,121. Sociedad Anonima Vinedos y Bodegas Arizu Argentine Corp., Godoy Cruz, Provincia de Mendoza, Argentina. Filed Mar. 22, 1966.

ARIZU

Owner of U.S. Reg. Nos. 391,049 and 393,047.
For Champagne (Int. Cl. 33).
First use Jan. 2, 1925; in commerce Nov. 11, 1939.

SN 285,487. Charles Jacquin et Cie., Inc., d.b.a. Hans Blenheim Co., Philadelphia, Pa. Filed Nov. 24, 1967.

HANS BLENHEIM

The name "Hans Blenheim" is fictitious and does not refer to any particular living individual.
For Wine (Int. Cl. 33).
First use November 1965.

Class 48 — Malt Beverages and Liquors

SN 253,745. Henninger-Brau Kommanditgesellschaft Auf Aktien, Frankfurt am Main, Germany. Filed Sept. 2, 1966.

Henninger

Owner of German Reg. No. 266,670, dated June 6, 1921.
For Beer (Int. Cl. 32).

Class 49 — Distilled Alcoholic Liquors

SN 268,139. The American Distilling Company, d.b.a. The American Distilling Co., Inc., New York, N.Y. Filed Apr. 3, 1967.

EL CHOLO

For Tequila (Int. Cl. 33).
First use Feb. 28, 1967.

SN 270,944. Old Charter Distillery Co., New York, N.Y. Filed May 8, 1967.

OLD CHARTER

Owner of Reg. Nos. 321,823, 612,509, and 655,925.
For Prepared Alcoholic Cocktails (Int. Cl. 33).
First use Sept. 30, 1965.

SN 272,944. Przedsiebiorstwo Handlu Zagranicznego "Agros," Warsaw, Poland. Filed June 2, 1967.

The word "Luksusowa" means "luxury." No claim is made to the exclusive use of the words "Vodka Luksusowa" apart from the mark as a whole. Owner of Polish Reg. No. 45,123, dated Sept. 7, 1965, and U.S. Reg. Nos. 757,016, 828,311, and others.
For Vodka (Int. Cl. 33).

SN 283,606. The House of Seagram, Inc., d.b.a. Park Avenue Imports, New York, N.Y. Filed Oct. 30, 1967.

CAPRICE

Owner of Reg. No. 821,249.
For Vodka (Int. Cl. 33).
First use Oct. 5, 1967.

Class 50 — Merchandise Not Otherwise Classified

SN 236,856. Josephine Tussaud Inc., Scottsdale, Ariz. Filed Jan. 19, 1966.

Applicant disclaims the words "The World in Wax" and the guillotine and figures in the shield apart from the mark as shown.
For Wax Figures (Int. Cl. 20).
First use Oct. 13, 1965.

Class 51 — Cosmetics and Toilet Preparations

SN 254,169. L'Oreal, Paris, France. Filed Sept. 9, 1966.

Régé Glamour Gray

The word "Gray" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 626,377 and 753,050.
For Hair Coloring Rinse (Int. Cl. 3).
First use May 23, 1966; in commerce May 23, 1966.

SN 254,281. Elizabeth Hartley, Inc., New York, N.Y. Filed Sept. 12, 1966.

LEG MATE

The word "Leg" is disclaimed apart from the mark as shown.
For Leg Complexion Makeup (Int. Cl. 3).
First use June 1, 1966.

SN 254,395. L'Oreal, Paris, France. Filed Sept. 13, 1966.

Régé Superbe

The word "Superbe" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 626,377, 628,411, and 763,066.
For Dyes, Coloring Agents, Rinses and Lotions for Hair and Beards and Preparations for Bleaching Hair (Int. Cl. 3).
First use June 3, 1966; in commerce June 3, 1966.

SN 255,516. Clairol Incorporated, New York, N.Y. Filed Sept. 30, 1966.

HEAD OVER HEELS

For Moisture Make-Up for Use on the Legs, Body and Face (Int. Cl. 3).
First use June 6, 1966.

SN 258,055. Clairol Incorporated, New York, N.Y. Filed Nov. 7, 1966.

SPUN PLATINUM

Applicant disclaims the right to the exclusive use of the word "Platinum" apart from the mark as shown.
For Hair Tinting, Dyeing and Coloring Preparation (Int. Cl. 3).
First use Aug. 11, 1966.

SN 258,058. Clairol Incorporated, New York, N.Y. Filed Nov. 7, 1966.

ANTIQUE SILVER

Applicant disclaims rights in the word "Silver" apart from the mark as shown.
For Hair Tinting, Dyeing and Coloring Preparation (Int. Cl. 3).
First use Aug. 11, 1966.

SN 258,059. Clairol Incorporated, New York, N.Y. Filed Nov. 7, 1966.

BLONDE DUST

Applicant disclaims "Blonde" apart from the mark as shown.
For Hair Color Stabilizer (Int. Cl. 3).
First use Aug. 11, 1966.

SN 258,068. Clairol Incorporated, New York, N.Y. Filed Nov. 7, 1966.

RADIANTLY RED

Applicant disclaims "Red" apart from the mark as shown. Owner of Reg. No. 840,982.
For Hair Tinting, Dyeing and Coloring Preparation (Int. Cl. 3).
First use Aug. 11, 1966.

SN 258,389. Les Parfums Madeleine de Rauch, Asnieres (Hauts-de-Seine), France. Filed Nov. 10, 1966.

VACARME

Owner of French Reg. No. 708,008, dated Apr. 28, 1966.
For Perfumes, Toilet Waters, Eau de Cologne, Lotions for the Body and Face, Bathing Salts, and Talcum (Int. Cl. 3).

SN 258,978. John H. Breck, Inc., Springfield, Mass. Filed Nov. 18, 1966.

BLONDE 'N COOL

Applicant disclaims the word "Blonde" apart from the mark as shown.
For Hair Coloring Preparation (Int. Cl. 3).
First use Nov. 3, 1966.

SN 263,276. L. Leichner (London) Limited, London, England. Filed Jan. 25, 1967.

KAMERA KLEAR

The applicant disclaims the word "Klear," separate and apart from the mark as shown on the drawing, reserving unto itself all common law rights which it may have or acquire in said term.
For Tinted Foundation Creams, Powders, Cream Powders, Skin Creams and Powders, Cheek Tint, Conditioning Creams and Lotions for the Skin, Moistening Creams and Lotions for the Skin, Cream Eye Shadow, Eye Liner, Block Mascara, Lipstick, and Astringents (Int. Cl. 3).
First use in the year 1955; in commerce in the year 1956.

SN 263,347. Bristol-Myers Company, New York, N.Y. Filed Jan. 26, 1967.

SCORE-THREE WAYS

Owner of Reg. Nos. 426,365, 798,913, and others.
For Hair Groom (Int. Cl. 3).
First use Nov. 10, 1966.

SN 265,075. Kelly Products, Inc., Royal Oak, Mich. Filed Feb. 20, 1967.

AHEAD

For Scalp Treatment Cosmetic—Namely, a Scalp Lubricator for Treating Dry Scalps and Loosening Hair (Int. Cl. 3).
First use Jan. 20, 1967.

SN 266,393. The Nestle-Lemur Company, d.b.a. Irresistible, New York, N.Y. Filed Mar. 10, 1967.

MINI-STIX

For Lipsticks (Int. Cl. 3).
First use Feb. 20, 1967.

SN 267,325. Elizabeth Arden Sales Corporation, New York, N.Y. Filed Mar. 22, 1967.

BEAUTY SLEEP

For Night Cream (Int. Cl. 3).
First use Feb. 15, 1967.

SN 268,492. Goubaud de Paris, Inc., New York, N.Y. Filed Apr. 6, 1967.

HONEY BROSIA

Applicant disclaims the word "Honey."
For Facial Cream (Int. Cl. 3).
First use Oct. 1, 1966.

SN 269,327. Lorenzo de Mexico, Inc., Chicago, Ill. Filed Apr. 17, 1967.

COCO-GLO!

Owner of Reg. No. 822,085.
For After Tanning Lotion (Int. Cl. 3).
First use Mar. 14, 1967.

SN 269,848. Bergel of Hollywood, Inc., Hollywood, Calif. Filed Apr. 24, 1967.

ISLAND LIME

Applicant disclaims the word "Lime" apart from the mark as a whole.
For Men's Cologne and After Shave Lotion (Int. Cl. 3).
First use on or about Aug. 1, 1965.

SN 271,055. Lafra Products, Inc., Canton, Ohio, assignee of Frederick L. Lauster, Massillon, Ohio. Filed May 9, 1967.

Pearl

For Liquid Dentifrice (Int. Cl. 3).
First use Jan. 21, 1963.

SN 271,056. Lafra Products, Inc., Canton, Ohio, assignee of Frederick L. Lauster, Massillon, Ohio. Filed May 9, 1967.

Pearl

DROPS OF BEAUTY

For Liquid Dentifrice (Int. Cl. 3).
First use Jan. 21, 1963.

SN 271,259. Johnson & Johnson, New Brunswick, N.J. Filed May 11, 1967.

D-DAY

For Hair Dressings (Int. Cl. 3).
First use Mar. 3, 1967.

SN 271,870. Yardley of London, Inc., Totowa, N.J. Filed May 18, 1967.

CITY LIGHTS

For Cologne (Int. Cl. 3).
First use May 11, 1967.

SN 273,369. Charmaceuticals, Inc., Los Angeles, Calif. Filed June 8, 1967.

Plus Ultra

For Skin Protective Lotion for the Body (Int. Cl. 3).
First use Mar. 1, 1967.

SN 285,273. The Trivera Company, Chicago, Ill. Filed Nov. 20, 1967.

Trivera

For Moisturizing Preparation for Skin Care (Int. Cl. 3).
First use Sept. 28, 1967.

Class 52 — Detergents and Soaps

SN 257,031. Bio-D-Company, Inc., Portland, Oreg. Filed Oct. 24, 1966.

drain away

Applicant disclaims the word "Drain" apart from the mark as shown.
For Drain Cleaner (Int. Cl. 3).
First use Sept. 28, 1965.

SN 257,633. Jet Air Products Co., Dallas, Tex. Filed Oct. 31, 1966.

PURGE

For Internal Flush Cleaner for Air Conditioning and Refrigeration Systems (Int. Cl. 3).
First use Jan. 27, 1966.

SN 262,232. Universal Oil Products Company, Des Plaines, Ill. Filed Jan. 9, 1967.

DRY FOAM CSI

For Hair Shampoo, Sold in Powder Form, Which Becomes a Cream Shampoo by the Addition of Water (Int. Cl. 3).
First use Sept. 22, 1948.

SN 269,304. Faultless Starch Company, Kansas City, Mo. Filed Apr. 17, 1967.

PREAT

For Stain Remover for Use on Fabrics (Int. Cl. 3).
First use Apr. 6, 1967.

SN 269,541. H. Kohnstamm & Co., Inc., New York, N.Y. Filed Apr. 19, 1967.

SOLV-SYN SUPER

The word "Super" is disclaimed apart from the mark as shown.

For Special Blend of Emulsifiers, Detergents, and Soap for Cleaning Synthetic Garments Where Soil Problems Are Extremely Heavy (Int. Cl. 3).

First use Dec. 13, 1966.

SN 274,718. Detrex Chemical Industries, Inc., Detroit, Mich. Filed June 26, 1967.

BOOTH-PURGE

For Cleaner in Liquid or Powder Form for Spray Paint Systems (Int. Cl. 3).

First use June 30, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

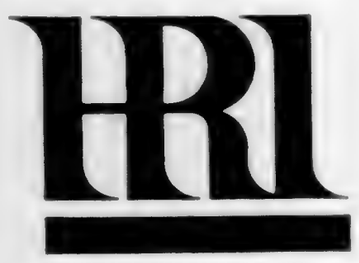
SN 249,695. World Safety Research Institute, Inc., New York, N.Y. Filed July 6, 1966.

The drawing is lined for the colors blue and brown, but no claim is made to the particular color.

For Rendering Services in Regard to the Promotion of Safety as Well as the Coordination and Encouragement of Respective Research in All Fields of Human Activities, Regardless Whether Industrial, Commercial, Professional, Social, Recreational, in Household, or Otherwise (Int. Cl. 42).

First use June 13, 1966.

SN 251,428. Houston Research Institute, Inc., Houston, Tex. Filed Aug. 1, 1966.



The mark includes a stylized representtaion of the letters "H, R, and I."

For Consulting, Research, Engineering, Design, and Development Services in the Chemical, Physical, Marketing, and Management Sciences (Int. Cl. 42).

First use March 1963.

SN 251,592. The Analytical Sciences Corporation, Winchester, Mass. Filed Aug. 3, 1966.

TASC

For Consulting and Engineering Services in the Fields of Navigation Systems, Guidance Systems, Control Systems and Data Systems, Relating to Weapon Systems, Space Systems and Marine Systems (Int. Cl. 42).

First use June 14, 1966.

SN 260,522. W. D. Brown and R. E. Worthington (joint owners), d.b.a. Hoof and Horn, Hoof 'n Horn, and Hoof & Horn, North Charleston, S.C. Filed Dec. 12, 1966.

HOOF & HORN

For Resturant and Steak House Services (Int. Cl. 42).

First use Jan. 1, 1955.

SN 264,353. Varsity Drive Inns International, Inc., State College, Pa. Filed Feb. 9, 1967.

Applicant disclaims the words "Drive Inns" apart from the mark as shown. Owner of Reg. No. 813,644.

For Restaurant Services (Int. Cl. 42).

First use Oct. 12, 1966; Dec. 1, 1964, as to "Varsity Drive Inns."

SN 265,615. Emile M. Croci, d.b.a. KPI, Silver Hill, Md. Filed Feb. 28, 1967.

KPI

For Restaurant Services (Int. Cl. 42).

First use April 1947.

SN 267,478. Ramada Inns, Inc., Phoenix, Ariz. Filed Mar. 22, 1967.

RAMADA

Owner of Reg. Nos. 686,471, 718,705, and 741,047.

For Hotel and Inn Services; Restaurant, Lounge, Convention, and Reservation Services; and Barber and Beauty Shop Services (Int. Cl. 42).

First use July 15, 1958.

Class 101 — Advertising and Business

SN 249,549. Metropolitan Advertising Company, New York, N.Y. Filed July 5, 1966.

For Writing and Placing of Classified Ads for Others (Int. Cl. 35).

First use January 1963.

SN 251,627. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Aug. 3, 1966.

GOODYEAR

For Promoting of Goods and Services of Others by Means of Aerial Advertising (Int. Cl. 35).

First use Jan. 1, 1959.

SN 251,660. Staff Builders International, Inc., New York, N.Y., by change of name and assignment from Staff Builders, Inc., New York, N.Y. Filed Aug. 3, 1966.

For Furnishing Temporary Personnel for Business and Industry (Int. Cl. 35).

First use June 1961.

SN 253,884. International Chain of Industrial and Technical Advertising-Agencies, Newark, N.J. Filed Sept. 6, 1966.

For Promoting the Business of Advertising and Advertising Agencies in the United States and Foreign Countries by Periodical Review of Operations and Recommending, Establishing and Maintaining Uniform Procedures and Standards of Service (Int. Cl. 35).

First use at least as early as June 1962.

SN 265,267. Brown's Temporary Personnel of America, Inc., Los Angeles, Calif. Filed Feb. 23, 1967.

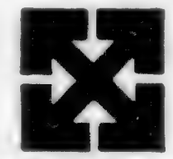
Brown's Temporary Personnel

The wording "Temporary Personnel" is disclaimed apart from the mark as shown.

For Furnishing Temporary Personnel to the Users Thereof and Providing and Furnishing Management Services Relating Thereto (Int. Cl. 35).

First use January 1949.

SN 273,028. Burland, Reiss, Murphy & Mosher, Inc., Southfield, Mich., by change of name from Burland-Reiss, Inc., Southfield, Mich. Filed June 5, 1967.



For Real Estate Brokerage of Commercial, Industrial, and Investment Property (Int. Cl. 35).

First use Apr. 1, 1967.

Class 102 — Insurance and Financial

SN 274,980. Northwestern National Insurance Company of Milwaukee, Wisconsin, Milwaukee, Wis. Filed June 28, 1967.

For Underwriting Services for All Types of Insurance, Including Property, Casualty, Fidelity, Surety, Accident, Health, and Life (Int. Cl. 36).

First use on or about Feb. 12, 1963.

Class 103 — Construction and Repair

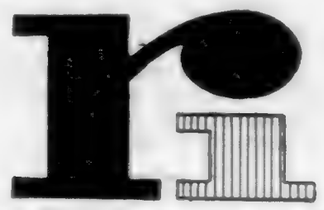
SN 254,204. Water Well Redevelopers, Inc., Yorba Linda, Calif. Filed Sept. 9, 1966.

SONAR-JET

For Cleaning of Wells by Means of Sound (Int. Cl. 37).

First use July 29, 1957.

SN 273,903. Ryan Incorporated of Wisconsin, Janesville, Wis. Filed June 14, 1967.



The drawing is lined for the color red, but color is not claimed as a part of the mark.

For Engineering and Construction Services—Namely, Road Building, Earth Moving, Excavating, Dredging, Bridge Building, Dam Building, and Concrete Fabrication (Int. Cl. 37).

First use Feb. 26, 1967.

Class 104 — Communication

SN 251,626. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Aug. 3, 1966.

GOODYEAR

For Television and Radio Broadcasting Service From a Mobile Platform (Int. Cl. 38).
First use Jan. 1, 1959.

SN 260,786. TNT Communications, Inc., New York, N.Y. Filed Dec. 14, 1966.

TriggerVision

For Communication Services—Namely, the Provision of Synchronized Visual Displays at Multiple Communication Locations for Business, Industry, Education, and Government (Int. Cl. 38).
First use September 1966.

Class 105 — Transportation and Storage

SN 251,964. Smith Banana Transport, Inc., Pueblo, Colo. Filed Aug. 8, 1966.

The representation of a banana is disclaimed apart from the mark as shown.
For Transportation by Ground Vehicles of Bananas and Exempt Commodities (Int. Cl. 39).
First use during 1958.

SN 252,802. Trans-American Van Service, Inc., Chicago, Ill. Filed Aug. 17, 1966.

The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 545,362 and 727,811.
For Motor Van and Warehousing Services—Namely, Packaging, Moving, and Shipping Household and Industrial Goods, Machinery, Fixtures, and Like Merchandise, and Storing and Warehousing the Same (Int. Cl. 39).
First use on or about July 9, 1966.

SN 266,327. The Greyhound Corporation, Chicago, Ill. Filed Mar. 9, 1967.

GPX

For Transportation of Goods of Others by Motor Bus (Int. Cl. 39).
First use November 1960.

Class 107 — Education and Entertainment

SN 217,105. Fabrica de Discos Fuentes S.A., Medellin, Colombia. Filed Apr. 22, 1965.

LOS CORRALEROS DE MAJAGUAL

The English translation of the mark is "the cowboys of Majagual."
For Entertainment Services Performed by a Band or Orchestra (Int. Cl. 41).
First use July 1, 1963; in commerce on or about Sept. 1, 1963.

SN 235,220. Outward Bound, Inc., Andover, Mass. Filed Dec. 23, 1965.

OUTWARD BOUND

For Services Involved in the Establishment, Control and Support of Schools Devoted To Improving or Developing the Capabilities of Young Men, 16–22 Years of Age, Through Exposure to Natural Elements Which Require Self-Discipline, Team Work and Ability To Face and Endure Physical and Intellectual Danger—Namely, Establishing Curricula, Solicitation of Funds To Support Member Schools, Conducting Promotional Activities in Behalf of the Member Schools (Int. Cl. 41).
First use on or about June 16, 1961.

SN 267,304. Artnell Company, Chicago, Ill. Filed Mar. 22, 1967.

The mark consists of the representation of a white sock on a solid circular background.
For Entertainment Services in the Nature of Professional Baseball Exhibitions (Int. Cl. 41).
First use March 1960.

SN 267,305. Artnell Company, Chicago, Ill. Filed Mar. 22, 1967.

The mark consists of the representation of a white sock superimposed on the representation of a baseball player in an action position, the figures being on a solid circular background.
For Entertainment Services, Particularly Professional Baseball Exhibitions (Int. Cl. 41).
First use April 1960.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 261,217. International Sanitary Supply Association, Chicago, Ill. Filed Dec. 21, 1966.

Owner of Reg. No. 654,263.
For Indicating Membership in Applicant.
First use Dec. 12, 1966.

SN 268,537. Toastmasters International, Santa Ana, Calif. Filed Apr. 6, 1967.

Owner of Reg. Nos. 555,137, 562,904, and 635,912.
For Indicating Membership in Applicant.
First use Dec. 12, 1966.

SN 268,801. The United States Gymnastics Federation, Tucson, Ariz. Filed Apr. 10, 1967.

For Indicating Membership in Applicant.
First use December 1962.

SN 269,777. National Association of Independent Nursing Homes, Inc., Oklahoma City, Okla. Filed Apr. 21, 1967.

For Indicating Membership in Applicant.
First use February 1967.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

845,224. SNOW BELT AND DESIGN. Murray Baum. SN 249,401. Pub. 12–19–67. Filed 7–1–66.

845,225. POLY-PACK HOLLY. Archie M. Erickson, d.b.a. The John Wieman Holly. SN 252,651. Pub. 12–19–67. Filed 8–18–66.

Class 2 — Receptacles

845,226. ICEE. John E. Mitchell Company, Inc. SN 235,208. Pub. 12–19–67. Filed 12–23–65.

845,227. PAPEEOLA. Lincoln Metal Products Corporation. SN 255,905. Pub. 12–19–67. Filed 10–6–66.

845,228. BURNITOL AND CIRCLE DESIGN. Sample-Durick, Incorporated. MULTIPLE CLASS (Classes 2 and 44). SN 260,622. Pub. 12–19–67. Filed 12–13–66.

845,229. ADVENTURER. Vichek Plastics Company. SN 261,899. Pub. 12–19–67. Filed 1–3–67.

845,230. AMWAY. Amway Corporation. SN 262,556. Pub. 12–19–67. Filed 1–16–67.

845,231. AMWAY AND DESIGN. Amway Corporation. SN 262,557. Pub. 12–19–67. Filed 1–16–67.

Class 4 — Abrasives and Polishing Materials

845,232. SAND-O-FLEX. Merit Products, Inc. SN 266,058. Pub. 12–19–67. Filed 3–6–67.

845,233. MHRA. Michigan Hot Rod Association. SN 266,244. Pub. 12–19–67. Filed 3–8–67.

845,234. MISCELLANEOUS DESIGN. Michigan Hot Rod Association. SN 266,246. Pub. 12–19–67. Filed 3–8–67.

845,235. STEP-SAVER-BASKET. S. C. Johnson & Son, Inc. MULTIPLE CLASS (Classes 4, 6, and 52). SN 266,386. Pub. 12–19–67. Filed 3–10–67.

845,236. PREEN. American Cyanamid Company. MULTIPLE CLASS (Classes 4 and 52). SN 271,009. Pub. 10–31–67. Filed 5–9–67.

Class 5 — Adhesives

845,237. BETA BOND. Beta Industries, Inc. SN 244,962. Pub. 12–19–67. Filed 5–5–66.

845,238. POSIV BOND ADHESIVES AND DESIGN. Positive Chemical Corporation. SN 265,731. Pub. 12–19–67. Filed 3–1–67.

Class 6 — Chemicals and Chemical Compositions

845,235. (See Class 4 for this trademark.)

845,239. ROLIN. S.I.P.A.L. Arexons Societa Italiana Prodotti Auto e Locomozione S.p.A. SN 208,114. Pub. 11–1–66. Filed 12–14–64.

845,240. DAY OFF. Nelson Laboratories, Inc. MULTIPLE CLASS (Classes 6 and 52). SN 256,120. Pub. 11–14–67. Filed 10–10–66.

845,241. VU-LIGHTER AND DESIGN. Scripto, Inc. SN 263,487. Pub. 12–19–67. Filed 1–27–67.

845,242. OPAQUE LIQUID KO-REC-TYPE AND DESIGN. Eaton Allen Corp. SN 264,203. Pub. 12–19–67. Filed 2–8–67.

845,243. SUMMER GODDESS. Colgate-Palmolive Company. SN 267,477. Pub. 12–19–67. Filed 3–23–67.

845,244. PHICO. Philip Lochman & Company. SN 267,955. Pub. 12–19–67. Filed 3–30–67.

845,245. ALANAP PLUS. Uniroyal, Inc. SN 268,539. Pub. 12–19–67. Filed 4–6–67.

845,246. VAREX. Varney Chemical Corporation. SN 268,906. Pub. 12–19–67. Filed 4–11–67.

845,247. VARION. Varney Chemical Corporation. SN 268,907. Pub. 12–19–67. Filed 4–11–67.

845,248. PREBANE. Geigy Chemical Corporation. SN 268,953. Pub. 12–19–67. Filed 4–12–67.

845,249. VIVIFLOW. General Aniline & Film Corporation. SN 268,954. Pub. 12–19–67. Filed 4–12–67.

845,250. CINCH. Miller Chemical Company, Inc. SN 268,980. Pub. 9–26–67. Filed 4–12–67.

845,251. FLEXCHLOR. Pearsall Chemical Corporation. SN 269,097. Pub. 12–19–67. Filed 4–13–67.

845,252. SQUELCH. Pennsalt Chemicals Corporation. SN 269,210. Pub. 12–19–67. Filed 4–14–67.

845,253. OXOCHEK. Sterling Drug Inc. SN 269,578. Pub. 12–19–67. Filed 4–19–67.

845,254. KILSOBAN. Valley Chemical Company. SN 269,810. Pub. 12–19–67. Filed 4–21–67.

845,255. TORBIDAN. Hercules Incorporated. SN 269,891. Pub. 12–19–67. Filed 4–24–67.

845,256. X-OUT. Irving J. Kane. SN 269,900. Pub. 12–19–67. Filed 4–24–67.

845,257. POLYPAD. Alliance Color and Chemical Corporation. SN 270,037. Pub. 12–19–67. Filed 4–26–67.

845,258. TRIPLEX. General Fire Extinguisher Corp. SN 270,054. Pub. 12–19–67. Filed 4–26–67.

845,259. NYLOFIXAN. Sandoz, Inc. SN 270,614. Pub. 12–19–67. Filed 5–3–67.

845,260. SULFINOX. Dresser Industries, Inc. SN 270,663. Pub. 12–19–67. Filed 5–4–67.

845,261. DESIGN OF HANDS AND TYPEWRITER. Tipp-Ex Vertrieb G.m.b.H. & Co. K.G. MULTIPLE CLASS (Classes 6 and 37). SN 276,721. Pub. 12–19–67. Filed 7–25–67.

845,262. EXODUST. Alois A. Toenjes, d.b.a. The Exodust Company. SN 277,733. Pub. 11–14–67. Filed 8–7–67.

845,263. DYKOLITE. Martin Marietta Corporation. SN 279,662. Pub. 12–19–67. Filed 9–5–67.

845,264. SIMPLOT. J. R. Simplot Company. SN 281,754. Pub. 12–19–67. Filed 10–4–67.

Class 7 — Cordage

845,265. TWIGA. African Ropes and Twines Limited. SN 272,904. Pub. 12–19–67. Filed 6–2–67.

845,266. ST REGIS. St. Regis Paper Company. SN 272,961. Pub. 12–19–67. Filed 6–2–67.

Class 8 — Smokers' Articles, Not Including Tobacco Products

845,267. FIRE WALL. Frank J. Curran Co. SN 273,486. Pub. 12–19–67. Filed 6–9–67.

845,268. SAFTI-ROUND. Frank J. Curran Co. SN 273,487. Pub. 12–19–67. Filed 6–9–67.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

845,269. FORRON. The Dow Chemical Company. SN 259,532. Pub. 12–19–67. Filed 11–28–66.

845,270. THERMOPRIMER. The Dow Chemical Company. SN 259,533. Pub. 12–19–67. Filed 11–28–66.

Class 10 — Fertilizers

845,271. SURE-CROP. Arthur F. Couch, d.b.a. Sure Crop Chemical Company. SN 253,122. Pub. 12–19–67. Filed 8–25–66.

845,272. CINCH. Miller Chemical Company, Inc. SN 268,951. Pub. 9–26–67. Filed 4–12–67.

845,273. SIMPLOT SOILBUILDERS AND DESIGN. J. R. Simplot Company. SN 275,354. Pub. 12–19–67. Filed 7–5–67.

Class 11 — Inks and Inking Materials

845,274. OLYMPIA. Olympia Werke AG. SN 263,394. Pub. 12–19–67. Filed 1–26–67.

845,275. KH KROME-BRITE. The Cronite Co., Inc. SN 264,201. Pub. 12–19–67. Filed 2–8–67.

Class 12 — Construction Materials

845,276. R-LITE AND DESIGN. Riverside Laboratories. SN 249,580. Pub. 12–19–67. Filed 7–5–66.

845,277. LIKON. Otto Huehner and Company, d.b.a. Buehner Schokbeton. SN 252,244. Pub. 12–19–67. Filed 8–12–66.

845,278. AMARLITE AND DESIGN. Anaconda Aluminum Company. SN 260,227. Pub. 12–19–67. Filed 12–7–66.

845,279. HEEL-TITE. Edward Hines Lumber Co. SN 262,032. Pub. 12–19–67. Filed 1–6–67.

845,280. DYNASEAL. Williams Products, Inc. SN 263,362. Pub. 10–10–67. Filed 1–11–67.

845,281. LUX O TILE. Borneo Sumatra Trading Company, Inc. SN 265,681. Pub. 6–20–67. Filed 3–1–67.

845,282. FOR THE ACTION GENERATION. National Homes Corporation. SN 270,099. Pub. 12–19–67. Filed 4–27–67.

845,283. MONOPLATE AND DESIGN. Systerra Corporation. SN 270,433. Pub. 12–19–67. Filed 5–1–67.

845,284. UNIVAN. U.S. Plywood-Champion Papers Inc. SN 281,428. Pub. 12–19–67. Filed 9–29–67.

845,285. UNICHROME. U.S. Plywood-Champion Papers Inc. SN 281,531. Pub. 12–19–67. Filed 10–2–67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

845,286. SEA-SWIRL. Pittsburgh Railways Company. SN 254,324. Pub. 12–19–67. Filed 9–12–66.

845,287. QUIKLINK. Fredk. A. Power & Sons, Ltd. SN 256,968. Pub. 12–19–67. Filed 10–21–66.

845,288. CONWED. Conwed Corporation, by change of name from Wood Conversion Company. SN 262,900. Pub. 12–19–67. Filed 1–19–67.

845,289. DRIVALL. John B. Wagner, d.b.a. John Wagner Assoc. SN 262,987. Pub. 12–19–67. Filed 1–20–67.

845,290. EON. Lawrence W. Burgess, d.b.a. Strandwound Burgess Fiberglass Pipe & Products. SN 263,740. Pub. 11–28–67. Filed 2–1–67.

845,291. ACCORDIA-FOLD. Kirsch Company. SN 264,064. Pub. 12–19–67. Filed 2–6–67.

845,292. OMNIFLO. Hydromatics, Inc. SN 266,663. Pub. 12–5–67. Filed 3–14–67.

845,293. HARRISON-WEISE. H. M. Harper Company. SN 275,197. Pub. 12–19–67. Filed 7–3–67.

Class 14 — Metals and Metal Castings and Forgings

845,294. MARK OF QUALITY AND DESIGN. Masten Corporation. MULTIPLE CLASS (Classes 14 and 23). SN 254,937. Pub. 12–19–67. Filed 9–22–66.

845,295. ZIV'S "SUPER." Ziv Steel & Wire Co. SN 262,255. Pub. 12–19–67. Filed 1–9–67.

Class 16 — Protective and Decorative Coatings

845,296. JEM SHIELD. Ajem Laboratories, Inc. SN 251,173. Pub. 12–19–67. Filed 7–28–66.

Class 17 — Tobacco Products

845,297. EUREKAH. Bayuk Cigars Incorporated, assignee of Garcia y Vega, Inc. SN 248,314. Pub. 12–19–67. Filed 6–17–66.

845,298. MISCELLANEOUS DESIGN. The American Tobacco Company. SN 265,965. Pub. 12–19–67. Filed 3–6–67.

845,299. MARTINIQUE. Monaco Cigar Corporation. SN 273,001. Pub. 12–19–67. Filed 6–5–67.

Class 18 — Medicines and Pharmaceutical Preparations

45,300. MEXABIL. Ciba Limited. SN 261,202. Pub. 11–14–67. Filed 12–21–66.

Class 19 — Vehicles

845,301. ATWOOD. Atwood Vacuum Machine Company. MULTIPLE CLASS (Classes 19 and 25). SN 228,113. Pub. 12–19–67. Filed 9–20–65.

845,302. HEIDER. Heider Manufacturing Co. SN 249,762. Pub. 12–19–67. Filed 7–7–66.

845,303. MISCELLANEOUS DESIGN. Yazaki Corporation. MULTIPLE CLASS (Classes 19, 21, 26, and 27). SN 252,442. Pub. 12–19–67. Filed 8–15–66.

845,304. COMMANDER. Chris-Craft Industries, Inc. SN 255,598. Pub. 12–19–67. Filed 10–3–66.

845,305. G AND DESIGN. All American Racers, Inc. SN 259,890. Pub. 12–19–67. Filed 12–2–66.

845,306. MISCELLANEOUS DESIGN. Self Energising Disc Brakes Limited. SN 263,615. Pub. 12–19–67. Filed 1–30–67.

845,307. OP-TRICKS. Bright Star Industries, Inc. SN 266,727. Pub. 12–19–67. Filed 3–15–67.

845,308. SPRINT. Southern Fiber Glass Products, Inc. SN 272,418. Pub. 12–19–67. Filed 5–25–67.

845,309. DYERCRAFT. The Anchorage, Inc. SN 252,309. Pub. 12–19–67. Filed 10–12–67.

845,310. GLAMOUR GIRL. The Anchorage, Inc. SN 282,310. Pub. 12–19–67. Filed 10–12–67.

845,311. DYER. The Anchorage, Inc. SN 282,312. Pub. 12–19–67. Filed 10–12–67.

Class 20 — Linoleum and Oiled Cloth

845,312. CANYONSTONE. Congoleum-Nairn Inc. SN 251,385. Pub. 12–19–67. Filed 8–1–66.

845,313. REFLECTION. Congoleum-Nairn Inc. SN 251,387. Pub. 12–19–67. Filed 8–1–66.

Class 21 — Electrical Apparatus, Machines, and Supplies

845,303. (See Class 19 for this trademark.)

845,314. STATIC NO-BREAK. T.M.C. Power Distribution, Incorporated. SN 203,838. Pub. 12–19–67. Filed 10–12–64.

845,315. HUNT. Hunt Electronics Company. SN 236,996. Pub. 12–19–67. Filed 1–21–66.

845,316. PC AND DESIGN. Oak Electro/Netics Corp., assignee of Phillips-Eckardt Electronic Corporation. SN 242,651. Pub. 12–19–67. Filed 4–4–66.

845,317. ASTROTENNA. Sylvan Simons, d.b.a. Video Industries Company. SN 245,650. Pub. 12–19–67. Filed 5–5–66.

845,318. KEN-TEL. The Okonite Company. SN 247,251. Pub. 12–19–67. Filed 6–3–66.

845,319. STATITROL. Statitrol Corporation. SN 247,732. Pub. 12–19–67. Filed 6–9–66.

845,320. AUTOSERT AND DESIGN. Amperex Electronic Corporation. SN 260,712. Pub. 12–19–67. Filed 12–14–66.

845,321. GRFF. General RF Fittings, Inc. SN 261,068. Pub. 12–19–67. Filed 12–19–66.

845,322. SIRENO SPEAKER-LIGHT. Sireno Signal Mfg. Corp. SN 261,686. Pub. 12–19–67. Filed 12–29–66.

845,323. THE HELPER. Nicholl Brothers, Inc. SN 262,055. Pub. 12–19–67. Filed 1–6–67.

845,324. SIGNET. Dare Products, Incorporated. SN 263,028. Pub. 12–19–67. Filed 1–23–67.

845,325. AQUAWARM. Fieldcrest Mills, Inc. SN 263,260. Pub. 12–19–67. Filed 1–25–67.

845,326. SONA MARKER. Ray Electric Company. SN 263,274. Pub. 12–19–67. Filed 1–25–67.

845,327. DEBONAIRE. LTV Ling Altec, Inc. SN 264,068. Pub. 12–19–67. Filed 2–6–67.

845,328. SONULITE. Sonus Corporation. SN 264,451. Pub. 12–19–67. Filed 2–10–67.

845,329. RADITE #75. Radar Design Corporation. SN 264,760. Pub. 12–19–67. Filed 2–15–67.

845,330. TRANSIPADS. The Ross Manufacturing Company. SN 264,968. Pub. 12–19–67. Filed 2–17–67.

845,331. ROTO FINISH AND DESIGN. Roto-Finish Company. SN 265,336. Pub. 12–19–67. Filed 2–23–67.

845,332. INTELLUX AND I. Intellux Inc. SN 265,528. Pub. 12–19–67. Filed 2–27–67.

845,333. SENTRY-GLO. Z & T Importing Co., Inc. SN 265,941. Pub. 12–19–67. Filed 3–3–67.

845,334. SONOTONE. Sonotone Corporation. SN 266,364. Pub. 12–19–67. Filed 3–9–67.

845,335. ECONOGLOW. General Electric Company. SN 268,041. Pub. 12–19–67. Filed 3–31–67.

845,336. FILTERGLOW. General Electric Company. SN 268,043. Pub. 12–19–67. Filed 3–31–67.

845,337. CHO-TRON. Chomerics, Inc. SN 277,751. Pub. 12–19–67. Filed 8–8–67.

Class 22 — Games, Toys, and Sporting Goods

845,338. SAN MARCO. Santo Tessaro, d.b.a. Calzaturificio di Santo Tessaro, and Calzaturificio di Sante Tessaro. SN 169,484. Pub. 12–19–67. Filed 5–22–63.

845,339. TELEPANDER. Gert F. Kölbel G.m.b.H. SN 248,626. Pub. 12–19–67. Filed 6–21–66.

845,340. BIG PLASTIC AND DESIGN. Johann Höfer, Plastik-Spielwarenfabrik. SN 251,133. Pub. 12–19–67. Filed 7–27–66.

845,341. ACCU-FLYTE AND DESIGN. Vornado, Inc. SN 251,574. Pub. 12–19–67. Filed 8–2–66.

845,342. LET CUBCO BE YOUR GUARDIAN ANGEL AND DESIGN. Cubco, Inc. SN 253,734. Pub. 12–19–67. Filed 9–2–66.

845,343. HUTCH. Hutch Athletic Goods Company. SN 255,626. Pub. 12–19–67. Filed 10–3–66.

845,344. BOWLING FIGURE (DESIGN). SW Industries, Inc. SN 261,756. Pub. 12–19–67. Filed 12–30–66.

845,345. DOUBLE-CROSS XX. Axel L. Johnson. SN 262,339. Pub. 12–19–67. Filed 1–11–67.

845,346. INSTAMATIC. Bluegill Tackle Manufacturing Company. SN 265,687. Pub. 12–19–67. Filed 3–1–67.

845,347. AZTECA-GOLD. Firma Adidas-Sportschuhfabriken Adi Dassler KG. SN 266,217. Pub. 12–19–67. Filed 3–8–67.

845,348. HAV-A SQUEEZE. Gilbert B. Plott, Jr., d.b.a. Hav-A Squeese Company. SN 267,659. Pub. 12–19–67. Filed 3–27–67.

845,349. WONDER POLE. Columbia Products Company. SN 268,155. Pub. 12–19–67. Filed 4–3–67.

845,350. ROOSTER TAIL. Yakima Bait Co. SN 270,638. Pub. 12–19–67. Filed 5–3–67.

845,351. WORDEN'S. Yakima Bait Co. SN 270,639. Pub. 12–19–67. Filed 5–3–67.

845,352. THAT KID! Hassenfeld Bros. Inc. SN 270,679. Pub. 12–19–67. Filed 5–4–67.

845,353. LOCK-O-MATIC. The Coleman Company, Inc. SN 270,757. Pub. 12–19–67. Filed 5–5–67.

845,354. RING-BAC. The Ohio Art Company. SN 271,383. Pub. 12–19–67. Filed 5–12–67.

845,355. SURPRISE BOX. Kohner Bros., Inc. SN 272,504. Pub. 12–19–67. Filed 5–26–67.

845,356. FLOATING-FACE. Raymon W. Cook, d.b.a. Ray Cook. SN 273,182. Pub. 12–19–67. Filed 6–6–67.

845,357. LAVERNE LOCKET. Mattel, Inc. SN 274,154. Pub. 12–19–67. Filed 6–19–67.

845,358. LUANA LOCKET. Mattel, Inc. SN 274,159. Pub. 12–19–67. Filed 6–19–67.

845,359. SGT. STORM. Mattel, Inc. SN 279,899. Pub. 12–19–67. Filed 9–8–67.

845,360. SGT. STEEL. Mattel, Inc. SN 279,900. Pub. 12–19–67. Filed 9–8–67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

845,294. (See Class 14 for this trademark.)

845,361. LI (DESIGN). Litton Industries, Inc. SN 236,101. Pub. 12–19–67. Filed 1–10–66.

845,362. SNO-FLO. Meyer Products, Inc. SN 238,549. Pub. 12–19–67. Filed 2–10–66.

845,363. MISCELLANEOUS DESIGN. The Raymond Corporation. SN 242,664. Pub. 12–19–67. Filed 4–4–66.

845,364. AUTO TAP. International Beverage Controls, Inc. SN 244,220. Pub. 12–19–67. Filed 4–25–66.

845,365. DUPLEX BEAVER. The Warner & Swasey Company. SN 244,544. Pub. 12–19–67. Filed 4–28–66.

845,366. BAUER. Bauer American Co. SN 246,249. Pub. 12–19–67. Filed 5–23–66.

845,367. REZ-A-FLO. L. M. & L. Corporation. SN 246,375. Pub. 12–19–67. Filed 5–25–66.

845,368. BSB BEAMCO SPECIALTY HALL CO. AND DESIGN. Virginia Industries, Inc. SN 247,425. Pub. 12–19–67. Filed 6–6–66.

845,369. WINGS AND SPHERE (DESIGN). Aero-Motive Manufacturing Company. SN 248,401. Pub. 12–19–67. Filed 6–20–66.

845,370. DELTA AND DESIGN. Sternco Industries, Inc. SN 249,085. Pub. 12–19–67. Filed 6–27–66.

845,371. BELTROL. Johnny Roberts, Inc. SN 254,450. Pub. 12–19–67. Filed 9–14–66.

845,372. SG AND DESIGN. Safe-Guide Cutter Co., Inc. SN 254,631. Pub. 12–19–67. Filed 9–16–66.

845,373. WOOD CHUCK AND DESIGN. Pitman Manufacturing Company. SN 257,978. Pub. 12–19–67. Filed 11–4–66.

845,374. CENTRI-VAC. Holley Carburetor Company. SN 258,115. Pub. 12–19–67. Filed 11–7–66.

845,375. CORKY. Girsberger & Tschappu. SN 258,224. Pub. 12–19–67. Filed 11–8–66.

845,376. ZELLERATOR AND DESIGN. Elastizell Corporation of America. SN 258,514. Pub. 12–19–67. Filed 11–14–66.

845,377. FACETTE. Aktiebolaget Gense. SN 260,000. Pub. 12–19–67. Filed 12–5–66.

845,378. ELLIPS. Aktiebolaget Gense. SN 260,001. Pub. 12–19–67. Filed 12–5–66.

845,379. FASTRANSFER. The Cross Company. SN 260,142. Pub. 12–19–67. Filed 12–6–66.

845,380. SPOT HERBICIDE CONTROL AND DESIGN. A. C. Bryson. SN 260,523. Pub. 12–19–67. Filed 12–12–66.

845,381. FI AND DESIGN. Fischer Industries, Inc. SN 260,737. Pub. 12–19–67. Filed 12–14–66.

845,382. MIEHLE. Miehle-Goss-Dexter, Incorporated. SN 260,869. Pub. 12–19–67. Filed 12–15–66.

845,383. JIFFI-LINER. Rampe Manufacturing Company. SN 260,958. Pub. 12–19–67. Filed 12–16–66.

845,384. H AND WING DESIGN. Belson Corporation. SN 261,037. Pub. 12–19–67. Filed 12–19–66.

845,385. HOFFMAN. Belson Corporation. SN 261,038. Pub. 12–19–67. Filed 12–19–66.

845,386. TRACERMATION. True-Trace Corporation. SN 261,336. Pub. 12–19–67. Filed 12–22–66.

845,387. AUTO-CHLOR. Auto-Chlor System, Inc. SN 261,356. Pub. 12–19–67. Filed 12–23–66.

845,388. JASPER GO! AND DESIGN. Jasper Engine Exchange, Inc. SN 261,499. Pub. 12–19–67. Filed 12–27–66.

845,389. HYDRO STEP AND DESIGN. Professional Instruments Company. SN 262,505. Pub. 12–19–67. Filed 1–13–67.

845,390. TAPER TIPS. Advanced Car Specialties Limited. SN 262,840. Pub. 12–19–67. Filed 1–19–67.

845,391. SWING CIRCLE. Harnischfeger Corporation. SN 263,567. Pub. 12–19–67. Filed 1–30–67.

845,392. JAYHAWK. The Wyatt Manufacturing Company, Inc. SN 263,638. Pub. 12–19–67. Filed 1–30–67.

845,393. MOLDOMAT. William Gluck, d.b.a. Gluco. SN 263,663. Pub. 12–19–67. Filed 1–31–67.

845,394. CORINTH. Imperial Knife Associated Companies, Inc. SN 263,916. Pub. 12–19–67. Filed 2–3–67.

845,395. SEAFLOWER. Oneida, Ltd. SN 264,442. Pub. 12–19–67. Filed 2–10–67.

845,396. STALLION. Metaline Products, Inc. SN 264,751. Pub. 12–19–67. Filed 2–15–67.

845,397. MPT (DESIGN). Eaton Yale & Towne Inc. SN 265,285. Pub. 12–19–67. Filed 2–23–67.

845,398. ROTO FINISH AND DESIGN. Roto-Finish Company. SN 265,337. Pub. 12–19–67. Filed 2–23–67.

845,399. RIGHT-O-WAY. Lilliston Implement Company. SN 265,536. Pub. 12–19–67. Filed 2–27–67.

845,400. ACRAFORM. The Gleason Works. SN 265,896. Pub. 12–19–67. Filed 3–3–67.

845,401. PETCO. Polyurethane Engineering Techniques Co., Inc. SN 265,919. Pub. 12–19–67. Filed 3–3–67.

845,402. LOW BOY. Dreier Brothers, Inc. SN 266,203. Pub. 12–19–67. Filed 3–8–67.

845,403. STALLION. Signode Corporation. SN 267,190. Pub. 12–19–67. Filed 3–20–67.

845,404. COROFLEX. G. T. Schjeldahl Company. SN 269,152. Pub. 12–19–67. Filed 4–14–67.

845,405. CAPCO. Pittsburgh Plate Glass Company. SN 276,983. Pub. 12–19–67. Filed 7–28–67.

845,406. ROTAREGISTA. Schnellpressenfabrik Koenig & Bauer Aktiengesellschaft. SN 281,851. Pub. 12–19–67. Filed 10–5–67.

845,407. S.S.T. Eversharp, Inc. SN 282,328. Pub. 12–19–67. Filed 10–18–67.

Class 24 — Laundry Appliances and Machines

845,408. LOADSTAR. McGraw-Edison Company. SN 248,821. Pub. 12–19–67. Filed 6–23–66.

845,409. MRS. AMERICA AND DESIGN. American Foam Latex Corp. SN 258,875. Pub. 12–19–67. Filed 11–17–66.

845,410. CAL-TOP. Southern Mills, Inc. SN 266,365. Pub. 12–19–67. Filed 3–9–67.

Class 25 — Locks and Safes

845,301. (See Class 19 for this trademark.)

Class 26 — Measuring and Scientific Appliances

845,303. (See Class 19 for this trademark.)

845,411. TM AND DESIGN. Telemation, Inc. MULTIPLE CLASS (Classes 26, 101, and 103). SN 240,983. Pub. 12–19–67. Filed 3–14–66.

845,412. EMD 8-48. Barry Wright Corp., assignee of Mathatronics, Inc. SN 242,139. Pub. 12–19–67. Filed 3–29–66.

845,413. MISS MOD ETC. AND DESIGN. Mr. Mod Shop, Inc. SN 249,043. Pub. 12–19–67. Filed 6–27–66.

845,414. ELATRON. L'Electronique Appliquee. SN 255,333. Pub. 12–19–67. Filed 9–28–66.

845,415. SERVOMASTER. Servo Corporation of America. SN 259,975. Pub. 12–19–67. Filed 12–2–66.

845,416. SUN-BAR AND DESIGN. American Polarizers, Inc. SN 262,368. Pub. 12–19–67. Filed 12–15–66.

845,417. SIGHT-MATE. Magna Sales Company. SN 266,340. Pub. 12–19–67. Filed 3–9–67.

845,418. SEW SURE. Mite Corporation. SN 266,346. Pub. 12–19–67. Filed 3–9–67.

845,419. SHURSITE. Textron Inc. SN 266,373. Pub. 12–19–67. Filed 3–9–67.

845,420. VARIOSCOP. Agfa-Gevaert Aktiengesellschaft. SN 266,397. Pub. 12–19–67. Filed 3–10–67.

845,421. MAGNAFICHE. Eastman Kodak Company. SN 266,413. Pub. 12–19–67. Filed 3–10–67.

845,422. VAN L CORRECTO. Van-L, Ltd. SN 266,954. Pub. 12–19–67. Filed 3–16–67.

845,423. ULTRA VISION. David P. Bushnell. SN 267,313. Pub. 12–19–67. Filed 3–22–67.

845,424. INDICAP. Engler Instrument Company. SN 267,822. Pub. 12–19–67. Filed 3–29–67.

845,425. XPOS-A-LINE. Gamco Industries, Inc., d.b.a. Creative Visuals. SN 267,826. Pub. 12–19–67. Filed 3–29–67.

845,426. T AND DESIGN. Tectronics Manufacturing Corporation. SN 268,799. Pub. 12–19–67. Filed 4–10–67.

845,427. ENCYCLOVISION. Hooks, Inc. SN 268,861. Pub. 12–19–67. Filed 4–11–67.

845,428. PPG INDUSTRIES AND DESIGN. Pittsburgh Plate Glass Company. SN 275,984. Pub. 12–19–67. Filed 7–14–67.

845,429. HYDRO-MITE. Thexton Manufacturing Company. SN 279,994. Pub. 12–19–67. Filed 9–11–67.

Class 27 — Horological Instruments

845,303. (See Class 19 for this trademark.)

845,430. LADY BYRON. Kalman Berger. SN 262,760. Pub. 12–19–67. Filed 1–18–67.

845,431. LORD BYRON. Kalman Berger. SN 262,761. Pub. 12–19–67. Filed 1–18–67.

845,432. AUDEMARS PIGUET. Société Anonyme de la Manufacture d'Horlogerie Audemars Piguet & Co. SN 267,070. Pub. 12–19–67. Filed 3–17–67.

845,433. GERVAIS-PENARD. Benrus Watch Company, Inc. SN 273,162. Pub. 12–19–67. Filed 6–6–67.

Class 28 — Jewelry and Precious-Metal Ware

845,434. MISS MOD ETC. AND DESIGN. Mr. Mod Shop, Inc. SN 249,044. Pub. 12–19–67. Filed 6–27–66.

845,435. ADORE. Sterling Merchandise Company. SN 258,605. Pub. 12–19–67. Filed 11–14–66.

845,436. MINI-PINS. B. B. Greenberg Co. SN 268,309. Pub. 12–19–67. Filed 4–4–67.

845,437. MCO MITCHELL DESIGNS AND DESIGN. Mitchell Designs. SN 270,934. Pub. 12–19–67. Filed 5–8–67.

845,438. GWR. Gotham Wedding Ring Co., Inc. SN 272,272. Pub. 12–19–67. Filed 5–24–67.

845,439. BARRETTINI. Danal Jewelry Company. SN 272,709. Pub. 12–19–67. Filed 5–31–67.

Class 31 — Filters and Refrigerators

845,440. AEROMATIC. Aeromatic A.G. MULTIPLE CLASS (Classes 11 and 34). SN 255,855. Pub. 12–19–67. Filed 10–6–66.

Class 32 — Furniture and Upholstery

845,441. AMFOAM AND DESIGN. American Foam Latex Corp. SN 254,853. Pub. 12–19–67. Filed 9–21–66.

845,442. DURACREST AND DESIGN. Metro Wholesale Corporation. SN 257,295. Pub. 12–19–67. Filed 10–26–66.

845,443. ARBATOVE. Springer-Penguin, Inc. SN 269,802. Pub. 12–19–67. Filed 4–21–67.

845,444. K AND DESIGN. Knoll Associates, Inc. SN 281,516. Pub. 12–19–67. Filed 10–2–67.

Class 34 — Heating, Lighting, and Ventilating Apparatus

845,440. (See Class 31 for this trademark.)

845,445. DRY-CEL. Midland-Ross Corporation. SN 257,066. Pub. 12–19–67. Filed 10–24–66.

845,446. HUMIDIWHEEL. Lennox Industries Inc. SN 261,737. Pub. 12–19–67. Filed 12–30–66.

845,447. PARACEL. Litecontrol Corporation. SN 261,932. Pub. 12–19–67. Filed 1–4–67.

845,448. MANUMATIC. Eutectic Welding Alloys Corporation. SN 261,979. Pub. 12–19–67. Filed 1–5–67.

845,449. VERTECTIC. Eutectic Welding Alloys Corporation. SN 261,980. Pub. 12–19–67. Filed 1–5–67.

845,450. CONVECTO-FLAME. Eclipse Fuel Engineering Co. SN 262,321. Pub. 12–19–67. Filed 1–11–67.

845,451. REBEL. The Coleman Company, Inc. SN 262,766. Pub. 12–19–67. Filed 1–18–67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

845,452. HCT. The General Tire & Rubber Company. SN 244,701. Pub. 12–19–67. Filed S.R. 5–2–66; Am. P.R. 10–25–67.

845,453. DCL. The General Tire & Rubber Company. SN 244,702. Pub. 12–19–67. Filed S.R. 5–2–66; Am. P.R. 10–25–67.

845,454. HEWITT ROBINS. Hewitt-Robins Incorporated. SN 250,270. Pub. 12–19–67. Filed 7–14–66.

845,455. SEAL PAK. O/E/N Acquisitions, Inc., by change of name and assignment from Dodge Fibers Corporation. SN 253,023. Pub. 9–19–67. Filed 8–24–66.

845,456. CONCORD CORREPEL. American Biltrite Rubber Co., Inc. SN 261,964. Pub. 12–19–67. Filed 1–5–67.

845,457. MISCELLANEOUS DESIGN. Federal-Mogul Corporation. SN 263,259. Pub. 12–19–67. Filed 1–25–67.

845,458. PETROLINE. H. K. Porter Company, Inc. SN 265,189. Pub. 12–19–67. Filed 2–21–67.

845,459. MURCO. George Murray Tire Company. SN 265,204. Pub. 12–19–67. Filed 2–21–67.

845,460. GARDENETTE. The Gates Rubber Company. SN 265,513. Pub. 12–19–67. Filed 2–27–67.

845,461. JOHNS-MANVILLE. Johns-Manville Corporation. SN 265,530. Pub. 12–19–67. Filed 2–27–67.

Class 36 — Musical Instruments and Supplies

845,462. ORGAN-MEISTER. Organ-Meister, Inc. SN 251,458. Pub. 12–19–67. Filed 8–1–66.

845,463. U AND DESIGN. MCA Inc. SN 253,322. Pub. 12–19–67. Filed 8–29–66.

845,464. HEARTLAND AND DESIGN. Heartland Productions, Incorporated. MULTIPLE CLASS (Classes 36 and 38). SN 259,499. Pub. 12–19–67. Filed 11–28–66.

845,465. FARFISA AND DESIGN. Chicago Musical Instrument Co. SN 261,194. Pub. 12–19–67. Filed 12–21–66.

Class 37 — Paper and Stationery

845,261. (See Class 6 for this trademark.)

845,466. JAC-WRAP AND DESIGN. CPS Industries, Inc. SN 237,529. Pub. 12–19–67. Filed 1–28–66.

845,467. VYNO. Clingmaster, Inc. SN 244,973. Pub. 12–19–67. Filed 5–5–66.

845,468. CANDIDO. Cartiera di Cairate S.p.A. SN 256,847. Pub. 12–19–67. Filed 10–18–66.

845,469. SNOWFLAKE NEWS. Southwest Forest Industries, Inc. SN 260,365. Pub. 12–19–67. Filed 12–8–66.

845,470. JOH-ETTE. James M. Herman. SN 260,428. Pub. 12–19–67. Filed 12–9–66.

845,471. LITE-A-LINE. Koh-I-Noor, Inc. SN 260,493. Pub. 12–19–67. Filed 12–12–66.

845,472. AMWAY. Amway Corporation. SN 262,558. Pub. 12–19–67. Filed 1–16–67.

845,473. IDENT-A-TAG. Hennett Brothers, Inc. SN 263,524. Pub. 12–19–67. Filed 1–30–67.

845,474. PERFECT PENMANSHIP. Scrantom's Book & Stationery Co., Inc. SN 267,856. Pub. 12–19–67. Filed 3–29–67.

845,475. DEMURE. Scott Paper Company. SN 268,769. Pub. 12–19–67. Filed 4–10–67.

845,476. RALLY. Scott Paper Company. SN 268,770. Pub. 12–19–67. Filed 4–10–67.

Class 38 — Prints and Publications

845,464. (See Class 36 for this trademark.)

845,477. GRAND AWARD. Plastichrome Greetings, Inc., d.b.a. Grand Award Division. SN 217,782. Pub. 12–19–67. Filed 4–30–65.

845,478. THE SIGHTSAVER SERIES. William Carroll, d.b.a. LargePrint Publications. SN 252,347. Pub. 12–19–67. Filed 8–15–66.

845,479. MANNA ABOUT TOWN. Standard Brands Incorporated. SN 254,636. Pub. 12–19–67. Filed 9–16–66.

845,480. LET'S LIVE. Oxford Industries, Inc. SN 264,337. Pub. 12–19–67. Filed 2–9–67.

845,481. IAC THE STANDARD OF SILENCE AND DESIGN. Industrial Acoustics Company, Inc. SN 264,465. Pub. 12–19–67. Filed 12–27–66.

845,482. THE OBJECTIVIST. The Objectivist, Inc. SN 264,577. Pub. 12–19–67. Filed 2–13–67.

845,483. SOUNDMAKERS. Billboard Publications, Inc., by change of name from The Billboard Publishing Company. SN 270,043. Pub. 12–19–67. Filed 4–26–67.

845,484. THE PUBLIC PULSE. Roper Research Associates, Incorporated. SN 276,980. Pub. 10–3–67. Filed 7–28–67.

845,485. PROBE. Booz-Allen Applied Research Inc. SN 279,594. Pub. 12–19–67. Filed 9–5–67.

845,486. WHAT DO YOU KNOW? The Hearst Corporation. SN 282,655. Pub. 12–19–67. Filed 10–17–67.

Class 39 — Clothing

845,487. GOLD LABEL. Eloesser-Heynemann Company. SN 135,194. Pub. 12–19–67. Filed 1–4–62.

845,488. YOUNG 'N LOVELY. Hudson Hosiery Company. SN 234,903. Pub. 12–19–67. Filed 12–20–65.

845,489. PROUDFOOT AND DESIGN. Proudfoot Hosiery Corp. SN 252,927. Pub. 12–19–67. Filed 8–23–66.

845,490. PROUDFOOT. Proudfoot Hosiery Corp. SN 252,928. Pub. 12–19–67. Filed 8–23–66.

845,491. THE BUSY BODYS. J. R. McMullen Company, Inc. SN 254,553. Pub. 12–19–67. Filed 9–15–66.

845,492. STAY-POSE. Hanes Corporation. SN 254,874. Pub. 12–19–67. Filed 9–21–66.

845,493. BETTI-JOHN. Johnston, Inc. SN 257,057. Pub. 12–19–67. Filed 10–24–66.

845,494. 2 PLUS 2. Murray Olewitz, Inc. SN 257,073. Pub. 12–19–67. Filed 10–24–66.

845,495. TUK AND DESIGN. L. Andrew Donaldson. SN 257,946. Pub. 12–19–67. Filed 11–4–66.

845,496. SCOTTIES AND DESIGN. Cromwell Mills. SN 258,070. Pub. 12–19–67. Filed 11–7–66.

845,497. COT-N-RITE. Cluett, Peabody & Co., Inc. SN 258,358. Pub. 12–19–67. Filed 11–10–66.

845,498. HAMROSE AND DESIGN. John Bambach Hosiery Company. SN 258,773. Pub. 12–19–67. Filed 11–16–66.

845,499. KANA. Pert Fashions, Inc. SN 260,274. Pub. 12–19–67. Filed 12–7–66.

845,500. CA-SI. Carlos Sinigagliesi & Cia. S.A. Ind. & Com. SN 261,971. Pub. 12–19–67. Filed 1–5–67.

845,501. SOUR PUSS. Ben Elias Co., Inc. SN 262,119. Pub. 12–19–67. Filed 1–9–67.

845,502. HORNETS. Endicott Johnson Corporation. SN 262,931. Pub. 12–19–67. Filed 1–20–67.

845,503. ALLCOURT. Cambridge Rubber Company. SN 263,450. Pub. 12–19–67. Filed 1–27–67.

845,504. SERGIO FRANCHINI. Shelby Seamless Hosiery Mills, Inc. SN 263,488. Pub. 12–19–67. Filed 1–27–67.

845,505. SLAKTOPS. Lujay Industries, Inc. SN 263,839. Pub. 12–19–67. Filed 2–2–67.

845,506. MICAL. Tami Sportswear. SN 264,346. Pub. 12–19–67. Filed 2–9–67.

845,507. MOORE-LYN. E. R. Moore Company. SN 264,567. Pub. 12–19–67. Filed 2–13–67.

845,508. SNO BUNNIES. Boss Manufacturing Company. SN 264,722. Pub. 12–19–67. Filed 2–15–67.

845,509. SUBURBAN CORNER. Westbury Fashions, Inc. SN 266,610. Pub. 12–19–67. Filed 3–13–67.

845,510. CALICO SCALLOP SHELL. Maidenform, Inc. SN 266,671. Pub. 12–19–67. Filed 3–14–67.

845,511. PERMA-SHINE. Modern Shoe Company. SN 266,774. Pub. 12–19–67. Filed 3–15–67.

845,512. COACHMAN. John Plain & Company. SN 266,783. Pub. 12–19–67. Filed 3–15–67.

845,513. ROYAL TOPPER. Uniroyal, Inc. SN 266,813. Pub. 12–19–67. Filed 3–15–67.

845,514. AME-LOU. C. W. Anderson Hosiery Company. SN 266,992. Pub. 12–19–67. Filed 3–17–67.

845,515. ZIPS AND DESIGN. Zip Hosiery Co. SN 268,545. Pub. 12–19–67. Filed 4–6–67.

845,516. SNO-KING AND DESIGN. Gross Galesburg Co. SN 269,185. Pub. 12–19–67. Filed 4–14–67.

845,517. TRAMPEZE IMPERIALS. Penobscot Shoe Company. SN 269,923. Pub. 12–19–67. Filed 4–24–67.

845,518. SEA & SKI. Sea & Ski Corporation. SN 270,162. Pub. 12–19–67. Filed 4–27–67.

845,519. THE "ONE AND ONLY." Fit-Rite Pants Company, Inc. SN 272,040. Pub. 12–19–67. Filed 5–22–67.

845,520. ROYAL CREST. Charles Pindyck, Inc. SN 272,627. Pub. 12–19–67. Filed 5–29–67.

845,521. FORUM AND DESIGN. Forum Sportswear, Inc. SN 272,824. Pub. 12–19–67. Filed 6–1–67.

845,522. DIMINISH. Flexnit Company, Inc. SN 273,190. Pub. 12–19–67. Filed 6–6–67.

845,523. ROYAL KIRKDALE. Hart Schaffner & Marx. SN 281,418. Pub. 12–19–67. Filed 9–29–67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

845,524. LID-ETTE. Vera M. Harrison and Hazel M. Haren (joint owners). SN 254,682. Pub. 12–19–67. Filed 9–19–66.

845,525. BALATEX AND DESIGN. Balatum S.A. (Societe Anonyme). SN 256,518. Pub. 12–19–67. Filed 10–17–66.

845,526. ANGLO SAXONY. Anglo Fabrics Company, Inc. SN 257,145. Pub. 12–19–67. Filed 10–25–66.

845,527. ISLAND CLOTH ETC. AND DESIGN. Concord Fabrics Inc. SN 257,939. Pub. 12–19–67. Filed 11–4–66.

845,528. ANGLOSHEEN. Anglo Fabrics Company, Inc. SN 261,447. Pub. 12–19–67. Filed 12–27–66.

845,529. ANGLO-HANDICRAFT. Anglo Fabrics Company, Inc. SN 262,915. Pub. 12–19–67. Filed 1–20–67.

845,530. FILMTEX. Stauffer Chemical Company. SN 264,124. Pub. 12–19–67. Filed 2–7–67.

845,531. MELLO-FUSE. DHJ Industries Inc. SN 266,009. Pub. 12–19–67. Filed 3–6–67.

845,532. COLT CORD. Cone Mills Corporation. SN 273,003. Pub. 12–19–67. Filed 6–5–67.

Class 44 — Dental, Medical, and Surgical Appliances

845,228. (See Class 2 for this trademark.)

845,533. DENTJECTOR. Noel Robbins. SN 253,784. Pub. 12–19–67. Filed 9–2–66.

845,534. O-B. The Kendall Company. SN 261,219. Pub. 12–19–67. Filed 12–21–66.

845,535. K.T.'S. Kimberly-Clark Corporation. SN 265,311. Pub. 12–19–67. Filed 2–23–67.

845,536. FILTERMASK. Deseret Pharmaceutical Company, Inc. SN 265,495. Pub. 12–19–67. Filed 2–27–67.

845,537. DENTREX. Howard M. Richardson. SN 265,557. Pub. 12–19–67. Filed 2–27–67.

845,538. ULTREER. The Kendall Company. SN 265,828. Pub. 12–19–67. Filed 3–2–67.

845,539. COM-FIT. Sigma Sales Corp. of California, d.b.a. Sigma Engineering Co. SN 266,261. Pub. 12–19–67. Filed 3–8–67.

845,540. TELAN. Telan Corporation. SN 276,391. Pub. 12–19–67. Filed 7–20–67.

845,541. AFFIRM. Braude Electronics Corporation. SN 279,595. Pub. 12–19–67. Filed 9–5–67.

845,542. BITE'N HOLD. Home Dental Aids Company, d.b.a. Home Dental Aids Co., Inc. SN 282,241. Pub. 12–19–67. Filed 10–11–67.

845,543. GAMBIT. Parke, Davis & Company. SN 282,248. Pub. 12–19–67. Filed 10–11–67.

Class 46 — Foods and Ingredients of Foods

845,544. ROSE AND DESIGN. Hayden Flour Mills. SN 188,756. Pub. 6–28–66. Filed 3–16–64.

845,545. SHIRAUME. Nishimoto Trading Co., Ltd. SN 206,641. Pub. 12–19–67. Filed 11–20–64.

845,546. CHARLESTON GARDEN. B. Altman & Co. SN 224,148. Pub. 3–15–66. Filed 7–26–65.

845,547. WINTER-KIST. Boggiatto Ranch & Packing Company, Inc., d.b.a. Boggiatto Packing Co. SN 238,037. Pub. 12–19–67. Filed 2–4–66.

845,548. SHALOM. Israel Dehydrated Products Limited. SN 240,620. Pub. 12–19–67. Filed 3–10–66.

845,549. MYA. Ceskoslovenske Cokoladovny, Oborovy Podnik, Modrany. SN 244,463. Pub. 5–23–67. Filed 4–28–66.

845,550. BALANCED. Balanced Foods, Inc. SN 245,667. Pub. 12–19–67. Filed 5–16–66.

845,551. DIXIE PECAN AND DESIGN. Parker's Products, Inc. SN 245,848. Pub. 12–19–67. Filed 5–17–66.

845,552. IT'S A HOMER! Gordon L. Guilliams, d.b.a. Nob Hill Ice Cream Company. SN 251,423. Pub. 12–19–67. Filed 8–1–66.

845,553. FARMERS PRIDE. Hulman & Company. SN 253,878. Pub. 12–19–67. Filed 9–6–66.

845,554. HUMMEL. Seaboard Allied Milling Corporation, d.b.a. George Urban Milling Company. SN 257,989. Pub. 12–19–67. Filed 11–4–66.

845,555. MICKEY. American Bakeries Company. SN 259,069. Pub. 12–19–67. Filed 11–21–66.

845,556. OULEVAY AND DESIGN. Oulevay S.A. SN 259,261. Pub. 12–19–67. Filed 11–22–66.

845,557. WHUTS AND DESIGN. Whuts, Inc. SN 260,618. Pub. 11–7–67. Filed 12–12–66.

845,558. BALANCED. Balanced Foods, Inc. SN 265,391. Pub. 12–19–67. Filed 2–24–67.

845,559. A.F.C.A. BRAND AND DESIGN. Armed Forces Citrus Association, Ltd. SN 266,134. Pub. 12–19–67. Filed 3–7–67.

845,560. CEDAR FARM. The Rath Packing Company. SN 268,074. Pub. 12–19–67. Filed 3–31–67.

845,561. FAMILY-MATE. Zevo, Inc. SN 268,263. Pub. 12–19–67. Filed 4–3–67.

845,562. LOMBARDIA. Armour and Company, d.b.a. North American Provisions Company. SN 268,466. Pub. 12–19–67. Filed 4–6–67.

845,563. GALA. Fisher Flouring Mills Co. SN 268,876. Pub. 12–19–67. Filed 4–11–67.

845,564. PETPAK. Lowe's, Inc. SN 269,083. Pub. 12–19–67. Filed 4–13–67.

845,565. DUROL. SCM Corporation, assignee of The Glidden Company, d.b.a. Durkee Famous Foods. SN 269,422. Pub. 12–19–67. Filed 4–18–67.

845,566. BAXTER'S FINEST. Snow Flake Canning Company. SN 270,715. Pub. 12–19–67. Filed 5–4–67.

845,567. ROYAL. Klein Chocolate Company. SN 276,996. Pub. 10–31–67. Filed 7–28–67.

845,568. RALLY. Hershey Chocolate Corporation. SN 278,693. Pub. 12–19–67. Filed 8–21–67.

845,569. CANDY PALACE CANDIES. Adams and Brooks, Inc. SN 279,251. Pub. 12–19–67. Filed 8–29–67.

845,570. WORLD OF FOODS. S and W Fine Foods, Inc. SN 279,906. Pub. 12–19–67. Filed 9–8–67.

845,571. CHAMP AND DESIGN. Market Confections, Inc., d.b.a. Western Candy Co. SN 281,748. Pub. 12–19–67. Filed 10–4–67.

845,572. LICKITY SPLITS. Marlan Company. SN 282,031. Pub. 12–19–67. Filed 10–9–67.

Class 47 — Wines

845,573. DOM SILVANO. C. Da Silva (Vinhos), S.A.R.L., d.b.a. C. Da Silva Ltd. SN 238,844. Pub. 12–19–67. Filed 6–12–67.

Class 48 — Malt Beverages and Liquors

845,574. HB AND DESIGN. Henninger-Bräu Kommanditgesellschaft auf Aktien. SN 253,746. Pub. 12–19–67. Filed 9–2–66.

Class 49 — Distilled Alcoholic Liquors

845,575. POLOMOS EXTRA VODKA LUKSUSOWA AND DESIGN. Przedsiebiorstwo Handlu Zagranicznego "Agros," assignee of Centrala Handlu Zagranicznego "Polimpex." SN 241,977. Pub. 12–19–67. Filed 3–28–66.

845,576. BUGLER (DESIGN). Ramada Inns, Inc. SN 253,169. Pub. 12–19–67. Filed 8–25–66.

845,577. "BLACK & WHITE" AND DESIGN. James Buchanan & Company Limited. SN 262,565. Pub. 12–19–67. Filed 1–16–67.

845,578. MELROSE. Joseph S. Finch and Company. SN 265,297. Pub. 12–19–67. Filed 2–23–67.

845,579. GO-BOY. Tennessee Walking Horse Company. SN 267,360. Pub. 12–19–67. Filed 3–22–67.

Class 50 — Merchandise Not Otherwise Classified

845,580. STEEL SAFE. Woodford Manufacturing Co. SN 238,473. Pub. 12–19–67. Filed 2–9–66.

845,581. LITHACTION. Donald N. Yates. SN 246,416. Pub. 12–19–67. Filed 5–23–66.

845,582. BRIGADIER. Afco Rubber Corporation. SN 263,432. Pub. 12–19–67. Filed 1–27–67.

Class 51 — Cosmetics and Toilet Preparations

845,583. AVALON. Avon Products, Inc., assignee of Claude H. Davis, d.b.a. Avalon Products Company. SN 223,875. Pub. 3–8–66. Filed 7–21–65.

845,584. A LA FRANCAIS. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 265,846. Pub. 12–19–67. Filed 3–2–67.

845,585. HIMSELF. Clairol Incorporated. SN 265,989. Pub. 12–19–67. Filed 3–6–67.

845,586. NATURALLY YOUNG. Clairol Incorporated. SN 265,991. Pub. 12–19–67. Filed 3–6–67.

845,587. NOSKOTE. Plough, Inc. SN 266,171. Pub. 12–19–67. Filed 3–7–67.

845,588. LLPF. Invincible Products Corp. SN 266,333. Pub. 12–19–67. Filed 3–9–67.

845,589. OH! DE MADRID. Yardley of London, Inc. SN 267,372. Pub. 12–19–67. Filed 3–22–67.

845,590. LOXENE. F. W. Hampshire & Co. Limited. SN 268,297. Pub. 12–19–67. Filed 4–4–67.

845,591. SPREE. Colgate-Palmolive Company. SN 274,860. Pub. 12–19–67. Filed 6–27–67.

845,592. RAIN WOOD. Eversharp, Inc. SN 277,596. Pub. 12–19–67. Filed 8–7–67.

845,593. NIGHT WOOD. Eversharp, Inc. SN 277,597. Pub. 12–19–67. Filed 8–7–67.

845,594. NITE WOOD. Eversharp, Inc. SN 277,598. Pub. 12–19–67. Filed 8–7–67.

Class 52 — Detergents and Soaps

845,235. (See Class 4 for this trademark.)

845,236. (See Class 4 for this trademark.)

845,240. (See Class 6 for this trademark.)

845,595. U AND DESIGN. Unichem Inc. SN 256,614. Pub. 12–19–67. Filed 10–17–66.

845,596. DURACREST AND DESIGN. Metro Wholesale Corporation. SN 257,287. Pub. 12–19–67. Filed 10–26–66.

845,597. RED DOG. Pennsalt Chemicals Corporation. SN 261,321. Pub. 12–19–67. Filed 12–22–66.

845,598. GAF. General Aniline & Film Corporation. SN 263,904. Pub. 12–19–67. Filed 2–3–67.

845,599. MATAR. Huntington Laboratories, Inc. SN 267,153. Pub. 12–19–67. Filed 3–20–67.

845,600. Q/M #1. W. R. Grace & Co. SN 267,242. Pub. 12–19–67. Filed 3–21–67.

845,601. REDDI FLOW. Simoniz Company. SN 267,357. Pub. 12–19–67. Filed 3–22–67.

845,602. ROYAL BAIN DE CHAMPAGNE. Caron Corporation. SN 268,289. Pub. 12–19–67. Filed 4–4–67.

845,603. LOXENE. F. W. Hampshire & Co. Limited. SN 269,138. Pub. 12–19–67. Filed 4–4–67.

845,604. URI-SAFE. Circle Research Laboratories, Inc. SN 282,324. Pub. 12–19–67. Filed 10–12–67.

Service Marks

Class 100 — Miscellaneous

845,605. BEST RENTALS INC. AND DESIGN. Abbey Rents, d.b.a. Best Rentals. SN 228,865. Pub. 12–19–67. Filed 9–29–65.

845,606. TENNESSEE SQUIRE. The Tennessee Squire Association. SN 230,337. Pub. 12–19–67. Filed 9–10–65.

845,607. TENNESSEE SQUIRE AND DESIGN. The Tennessee Squire Association. SN 230,338. Pub. 12–19–67. Filed 9–10–65.

845,608. CR. Contemporary Research, Inc. SN 233,250. Pub. 12–19–67. Filed 11–24–65.

845,609. CREDIT UNION AND DESIGN. Cuna International, Inc. SN 251,191. Pub. 12–19–67. Filed 7–28–66.

845,610. FARRELL'S ICE CREAM PARLOUR AND DESIGN. Farrell's, Inc. SN 253,966. Pub. 12–19–67. Filed 9–7–66.

845,611. JUST CALL ME SMILEY. Ramada Inns, Inc. SN 259,852. Pub. 12–19–67. Filed 12–1–66.

845,612. MISCELLANEOUS DESIGN. Laverne International Ltd. SN 266,669. Pub. 12–19–67. Filed 3–14–67.

Class 101 — Advertising and Business

845,411. (See Class 26 for this trademark.)

845,613. SCOOPER DOOPER. Scooper Dooper Ice Cream Shoppes, Inc. SN 257,988. Pub. 12–19–67. Filed 11–4–66.

845,614. TOP TEN. Tenneco Oil Company. SN 258,613. Pub. 12–19–67. Filed 11–14–66.

845,615. TARGET AND DESIGN. Target Stores, Inc. SN 276,713. Pub. 12–19–67. Filed 7–24–67.

Class 102 — Insurance and Financial

845,616. PACESETTER. National Bank of Tulsa. SN 236,770. Pub. 8–15–67. Filed 1–18–66.

845,617. IM AND DESIGN. Investors Mutual, Inc. SN 246,570. Pub. 12–19–67. Filed 5–25–66.

845,618. BANKAMERICARD. Bankamerica Service Corporation, assignee of Bank of America National Trust and Savings Association. SN 262,114. Pub. 12–19–67. Filed 1–9–67.

845,619. INSURANCE WITH EMPHASIS. La Bow, Haynes Company, Inc. SN 264,553. Pub. 12–19–67. Filed 2–13–67.

845,620. PENINSULAR GROUP AND P DESIGN. Peninsular Life Insurance Company. SN 279,791. Pub. 12–19–67. Filed 9–7–67.

Class 103 — Construction and Repair

845,411. (See Class 26 for this trademark.)

845,621. DOW AND DESIGN. The Dow Chemical Company. MULTIPLE CLASS (Classes 103 and 106). SN 256,077. Pub. 12–19–67. Filed 10–10–66.

845,622. PETE COLLINS CO. ETC. AND DESIGN. Pete Collins Company. SN 275,811. Pub. 12–19–67. Filed 7–12–67.

Class 105 — Transportation and Storage

845,623. PACESETTER. Viking Freight Company. SN 256,325. Pub. 12–19–67. Filed 10–12–66.

845,624. BALANCED SERVICE ETC. AND DESIGN. Irish Truck Lines, Inc. SN 260,299. Pub. 12–19–67. Filed 11–21–66.

Class 106 — Material Treatment

845,621. (See Class 103 for this trademark.)

Class 107 — Education and Entertainment

845,625. GREETING CRAFT. Frank Engli, d.b.a. The Greeting Craft School. SN 238,414. Pub. 12–19–67. Filed 2–9–66.

845,626. PHYSFITS. Arlene Zupp. SN 250,547. Pub. 12–19–67. Filed 7–18–66.

845,627. THE IN CROWD. Bankers Management & Services, Inc. SN 258,774. Pub. 12–19–67. Filed 11–16–66.

845,628. THE BLACK THEATER OF PRAGUE AND DESIGN. Statni Divadelni Studio. SN 260,197. Pub. 12–19–67. Filed 12–6–66.

845,629. ROTAIRPORT INC. Rotairport, Inc. SN 260,884. Pub. 12–19–67. Filed 12–15–66.

845,630. NATIONAL SWEETHEART. Hoopeston Junior Chamber of Commerce. SN 264,212. Pub. 12–19–67. Filed 2–8–67.

845,631. SOUL SURVIVORS. Frank Cariola. SN 264,798. Pub. 12–19–67. Filed 2–16–67.

Collective Membership Mark

Class 200

845,632. UNIVERSITY OF MIAMI AND SEAL DESIGN. University of Miami, d.b.a. The University of Miami. SN 260,897. Pub. 12–19–67. Filed 12–15–66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 6 — Chemicals and Chemical Compositions

845,633. Lake Chemical Co., Chicago, Ill. SN 233,111. Filed P.R. 11–22–65; Am. S.R. 12–12–67.

HEAT-SEAL STIK

For Composition for Sealing Leaks (Intl. Cl. 17).
First use Feb. 11, 1965.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

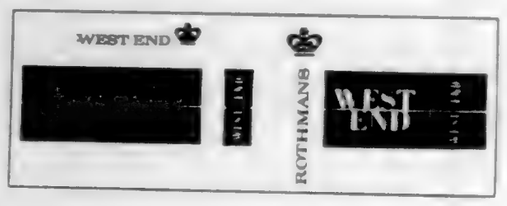
845,634. Fleischman Industries Inc., Lynwood, Los Angeles, Calif. SN 257,479. Filed P.R. 10–28–66; Am. S.R. 9–22–67.

HANG-R-LOCK SECURITY SYSTEM

The word "Hang-R" is disclaimed apart from the combination shown.
For Clothing Hangers (Intl. Cl. 26).
First use May 1966.

Class 17 — Tobacco Products

845,635. Rothmans of Pall Mall Limited, Zurich, Switzerland. SN 263,609. Filed P.R. 1–30–67; Am. S.R. 11–3–67.



Owner of Swiss Reg. No. 215,121, dated June 9, 1966.
For Cigarettes, Smoking Tobacco, and Cigars (Intl. Cl. 34).

Class 21 — Electrical Apparatus, Machines, and Supplies

845,636. Appleton Electric Company, Chicago, Ill. SN 250,442. Filed P.R. 7–18–66; Am. S.R. 12–1–67.

SLIDE-LOK

For Explosionproof Electric Plugs and Receptacles (Intl. Cl. 9).
First use May 7, 1965.

845,637. General Instrument Corporation (Delaware corporation), Newark, N.J., by merger from General Instrument Corporation (New Jersey corporation), Newark, N.J. SN 258,805. Filed P.R. 11–16–66; Am. S.R. 11–22–67.

CRYSTAL CAP

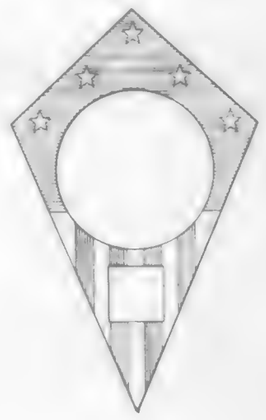
For Electrical Capacitors (Intl. Cl. 9).
First use Oct. 20, 1966.

Class 22 — Games, Toys, and Sporting Goods

845,638. Sargent Art Corporation, Hazelton, Pa. SN 249,801. Filed P.R. 7–7–66; Am. S.R. 11–17–67.

For Toy Modeling Clay Sets (Intl. Cl. 28).
First use Feb. 5, 1964.

845,639. The Saturn Corporation, Denver, Colo. SN 250,035. Filed P.R. 7–11–66; Am. S.R. 11–21–67.



The drawing is lined for red and blue, but color is not claimed as a feature of the mark.
For Packages for Kite Strings and Kite String Winders (Intl. Cl. 28).
First use on or about Oct. 10, 1964.

Class 25 — Locks and Safes

845,640. H. Greenwald Mfg. Co., Inc., Brooklyn, N.Y. SN 247,120. Filed P.R. 6–2–66; Am. S.R. 12–29–67.

ADJUST-A-CODE

For Locks and Keys for Same (Intl. Cl. 6).
First use Mar. 15, 1966.

Class 26 — Measuring and Scientific Appliances

845,641. Iota-Cam Corporation, Wakefield, Mass. SN 259,440. Filed P.R. 1–6–65; Am. S.R. 12–26–67.

Camera Scope

For Instruments Consisting of Remote Control Miniature Cameras and Fibre Optic Units for Visual Observation and Photographic Recording of Inaccessible Areas (Intl. Cl. 9).
First use at least as early as Jan. 1, 1963.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

845,642. Louis Fishman & Co. Inc., Chicago, Ill. SN 231,374. Filed P.R. 10–28–65; Am. S.R. 12–7–67.

EXTRA-GRIP

For Rubber Tires for Wheeled Vehicles (Intl. Cl. 18).
First use Oct. 4, 1965.

Class 46 — Foods and Ingredients of Foods

845,643. John Krauss, Incorporated, Jamaica, N.Y. SN 240,524. Filed P.R. 3–9–66; Am. S.R. 12–22–67.

Old World Recipe

For Liverwurst (Intl. Cl. 28).
First use December 1964.

845,644. Kent Feeds, Inc., Muscatine, Iowa. SN 242,851. Filed P.R. 4–7–66; Am. S.R. 12–15–67.

FLAV-R-IZED

For Livestock and Poultry Feeds (Intl. Cl. 31).
First use Feb. 2, 1966.

845,645. Golden Grain Macaroni Co., San Leandro, Calif. SN 259,693. Filed P.R. 11–30–66; Am. S.R. 12–18–67.

NEVER-STIK

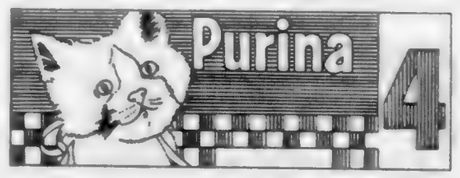
For Spaghetti, Macaroni, and Noodles (Intl. Cl. 30).
First use Oct. 25, 1966.

845,646. Foods by Livingston, Inc., Pauls Valley, Okla. SN 260,930. Filed P.R. 12–16–66; Am. S.R. 12–27–67.

Field's "WORLD'S BEST"

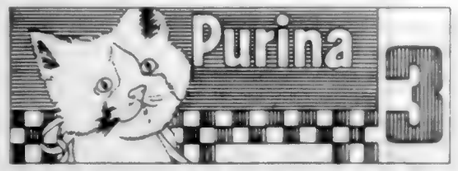
No claim is made to the words "World's Best" apart from the mark as shown.
For Frozen Pecan Pie (Intl. Cl. 30).
First use on or about Sept. 1, 1956.

845,647. Ralston Purina Company, St. Louis, Mo. SN 273,415. Filed 6–8–67.



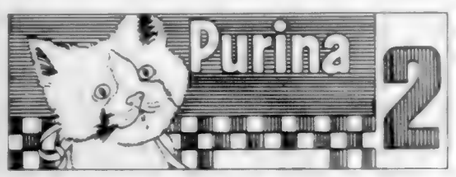
The drawing is lined for red and blue but no claim is made to color.
For Canned Cat Food (Intl. Cl. 31).
First use Apr. 13, 1966.

845,648. Ralston Purina Company, St. Louis, Mo. SN 273,416. Filed 6–8–67.



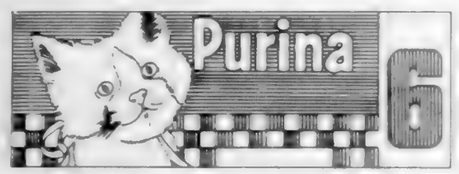
The drawing is lined for red and blue but no claim is made to color.
For Canned Cat Food (Intl. Cl. 31).
First use Apr. 13, 1966.

845,649. Ralston Purina Company, St. Louis, Mo. SN 273,417. Filed 6–8–67.



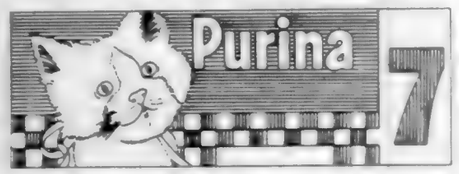
The drawing is lined for red and blue but no claim is made to color.
For Canned Cat Food (Intl. Cl. 31).
First use Apr. 13, 1966.

845,650. Ralston Purina Company, St. Louis, Mo. SN 273,418. Filed 6–8–67.



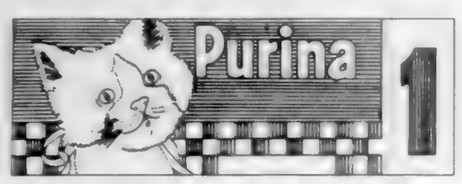
The drawing is lined for red and blue but no claim is made to color.
For Canned Cat Food (Intl. Cl. 31).
First use Apr. 13, 1966.

845,651. Ralston Purina Company, St. Louis, Mo. SN 273,419. Filed 6–8–67.



The drawing is lined for red and blue but no claim is made to color.
For Canned Cat Food (Intl. Cl. 31).
First use Apr. 13, 1966.

845,652. Ralston Purina Company, St. Louis, Mo. SN 273,420. Filed 6–8–67.



The drawing is lined for red and blue but no claim is made to color.
For Canned Cat Food (Intl. Cl. 31).
First use Apr. 13, 1966.

Class 49 — Distilled Alcoholic Liquors

845,653. Sazerac Company, Inc., d.b.a. Macaulay & Co., New Orleans, La. SN 259,104. Filed P.R. 11–21–66; Am. S.R. 12–22–67.

DUNLEAVY

For Scotch Whisky (Intl. Cl. 33).
First use Sept. 30, 1966.

845,654. Sazerac Company, Inc., d.b.a. Wide-World Importers, New Orleans, La. SN 262,069. Filed P.R. 1–6–67; Am. S.R. 12–22–67.

TIJUANA

For Tequila (Intl. Cl. 33).
First use Dec. 6, 1966.

Class 51 — Cosmetics and Toilet Preparations

845,655. Clairol Incorporated, New York, N.Y. SN 248,306. Filed P.R. 6–17–66; Am. S.R. 1–8–68.

SUNNY TIME BLONDE

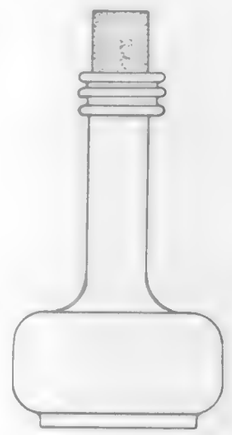
For Hair Tinting, Dyeing, and Coloring Preparation (Intl. Cl. 3).
First use Mar. 25, 1966.

845,656. Arnaud Parfumeur, Neuilly-sur-Seine (Hauts-de-Seine), France. SN 256,639. Filed P.R. 10–18–66; Am. S.R. 12–22–67.

ARNAUD

Owner of French Reg. No. 15,698, dated Aug. 5, 1966.
For Perfumes, Rouge, Face Powders, Toilet Waters, Cologne Waters, Beauty Creams and Lotions, Lipsticks, Nail Lacquers, Hair Lotions, Lotions for the Beard, Bath Salts, Talcum Powder, and Dentifrices (Intl. Cl. 3).

845,657. Judith Muller, Ltd., Haifa, Israel. SN 266,903. Filed P.R. 3–16–67; Am. S.R. 11–17–67.



The stippling on the drawing indicates shading only.
For Perfume, Cologne, and Toilet Water (Intl. Cl. 3).
First use at least as early as Aug. 7, 1966; in commerce at least as early as Aug. 7, 1966.

Class 52 — Detergents and Soaps

845,658. Thames Industries Limited, London, England. SN 249,281. Filed P.R. 6–30–66; Am. S.R. 11–8–67.

LONDON-WAVE

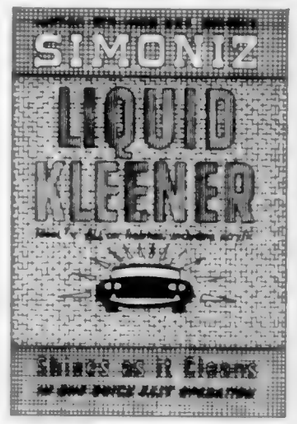
For Combination Hair Shampoo and Hair Setting Preparation (Intl. Cl. 3).
First use June 15, 1966; in commerce June 15, 1966.

845,659. Thames Industries Limited, London, England. SN 249,289. Filed P.R. 6–30–66; Am. S.R. 11–8–67.

LONDON-SET

For Combination Hair Shampoo and Hair Setting Preparation (Intl. Cl. 3).
First use June 14, 1966; in commerce June 14, 1966.

845,660. Simonis Company, Chicago, Ill. SN 187,404. Filed 12–22–67.



The drawing is lined for the colors red and yellow but color is not a part of the mark.
For Automobile Cleaning Preparation (Intl. Cl. 3).
First use February 1962; at least 1923 in a different form.

Service Marks

Class 100 — Miscellaneous

845,661. Shockley's Pancake House, Inc., Florence, Ala. SN 250,410. Filed P.R. 7–15–66; Am. S.R. 12–14–67.

SHOCKLEY'S PANCAKE HOUSE

For Restaurant Services (Intl. Cl. 42).
First use Mar. 4, 1963.

Class 102 — Insurance and Financial

845,662. Blue Cross & Blue Shield of Delaware, Incorporated, Wilmington, Del. SN 249,602. Filed P.R. 7–5–66; Am. S.R. 11–16–67.

DELAWARE-65

For Operating Various Programs for Prepayment of Certain Hospital and/or Physicians' Charges and Certain Related Medical Expenses (Intl. Cl. 36).
First use Jan. 21, 1966.

Class 103 — Construction and Repair

845,663. The House of Plastic, Inc., Norfolk, Va. SN 249,287. Filed P.R. 6–29–66; Am. S.R. 12–1–67.

The House of Plastic

For Home and Interior Decorating Services, Including Reupholstering, Custom Fitting of Slipcovers and Custom Manufacture of Drapes (Intl. Cl. 37).
First use July 1964.

Class 105 — Transportation and Storage

845,664. FNCH Services Corporation, New York, N.Y. SN 274,314. Filed 6–20–67.

TRAVEL SELECTION CENTER

For Travel Services—Namely, Arranging Itineraries, Cruises, Tours, Hotel Reservations, Transportation Reservations and Car Rentals; Furnishing Travel Information and Obtaining Visas (Intl. Cl. 39).
First use June 1, 1966.

TRADEMARK REGISTRATIONS RENEWED

63,564. ELIE SHEETZ MARTHA WASHINGTON CANDIES AND DESIGN. Cl. 46 (Int. Cl. 30). 6–25–07.
66,490. DEWARS' WHISKY. Cl. 49 (Int. Cl. 33). 12–3–07.
66,893. MOTHERS FRIEND. Cl. 18 (Int. Cl. 5). 1–7–08.
69,201. JAEGER. Cl. 39 (Int. Cl. 25). 5–26–08.
137,502. FRIGIDAIRE. Cl. 31 (Int. Cl. 11). 11–23–20.
159,168. AMERICAN. Cl. 15 (Int. Cl. 4). 9–19–22.
199,246. BUICK. Cl. 19 (Int. Cl. 12). 6–2–25.
220,963. "COCOMALT" AND DESIGN. Cl. 46 (Int. Cl. 30). 11–16–26.
229,523. BLACK PALM. Cl. 46 (Int. Cls. 29 and 31). 6–28–27.
234,530. JAQUET. Cl. 51 (Int. Cls. 3 and 5). 11–1–27.
234,696. JAQUET. Cl. 52 (Int. Cl. 3). 11–1–27.
235,004. MT. KONOCTI. Cl. 46. (Int. Cl. 31). 11–8–27.
235,623. STANDARD. Cl. 37. (Int. Cl. 16). 11–22–27.
235,971. COLUMBIA. Cl. 26 (Int. Cl. 16). 11–29–27.
236,441. THE MARQUISE A & S AND DESIGN. Cl. 29 (Int. Cl. 25). 12–13–27.
237,101. COLUMBIA. Cl. 37 (Int. Cl. 16). 1–3–28.

237,688. LADY OF THE LAKE. Cl. 46 (Int. Cl. 31). 1-17-28.
238,014. GLAD RAGS AND DESIGN. Cl. 39 (Int. Cl. 25). 1-24-28.
239,013. MOVIETONE. Cl. 26 (Int. Cl. 9). 2-21-28.
240,409. FILMO. Cl. 6 (Int. Cl. 1). 3-27-28.
240,686. M.B. Cl. 13 (Int. Cl. 6). 4-3-28.
241,507. PROTECTOR. Cl. 13 (Int. Cl. 6). 5-1-28.
242,520. HONOR-BRIGHT. Cl. 46 (Int. Cl. 31). 5-29-28.
242,971. SELECTED. Cl. 46. (Int. Cl. 31). 6-5-28.
243,370. BLUE BOW. Cl. 46 (Int. Cl. 31). 6-19-28.
432,217. FILCRON. Cl. 28 (Int. Cl. 7). 8-26-47.
433,291. MISTLON. Cl. 37 (Int. Cl. 16). 10-7-47.
434,217. BA & CO. AND DESIGN. Cl. 28 (Int. Cls. 14 and 8). 11-11-47.
434,678. COTILLION CLASSIC. Cl. 51 (Int. Cl. 3). 12-2-47.
434,737. FIELDCREST. Cl. 21 (Int. Cl. 9). 12-2-47.
435,006. 569. Cl. 1 (Int. Cl. 1). 12-9-47.
435,075. SUMMER ROSE. Cl. 51 (Int. Cl. 3). 12-9-47.
435,204. EDUCATOR SHOES TRAIN FOOTSTEPS AND DESIGN). Cl. 39 (Int. Cl. 25). 12-16-47.
435,209. GEMTONE. Cl. 11 (Int. Cl. 2). 12-16-47.
435,592. VEGEMITE. Cl. 46 (Int. Cl. 40). 1-6-48.
435,621. SUNOCO. Cl. 21 (Int. Cl. 9). 1-6-48.
435,640. NORIT. Cl. 18 (Int. Cl. 1). 1-6-48.
435,667. ELASTRATOR. Cl. 44 (Int. Cl. 10). 1-6-48.
435,713. 510. Cl. 1 (Int. Cl. 1). 1-6-48.
435,734. MANOLA. Cl. 18 (Int. Cl. 5). 1-6-48.
435,743. JIFFY. Cl. 12 (Int. Cl. 19). 1-6-48.
435,754. COLOSSUS. Cl. 12 (Int. Cl. 19). 1-6-48.
435,771. BEAU-TIPS. Cl. 44 (Int. Cl. 5). 1-6-48.
435,836. ARGO-KNIT. Cl. 39 (Int. Cl. 25). 1-13-48.
435,965. AMINOPAN. Cl. 18 (Int. Cl. 5). 1-20-48.
435,995. TEXAS BLUEBONNET DOLL AND DESIGN. Cl. 22 (Int. Cl. 28). 1-20-48.
436,169. POLY CHOKE. Cl. 9 (Int. Cl. 13). 1-27-48.
436,821. VALVOLINE. Cl. 15 (Int. Cl. 4). 2-24-48.
437,528. LA JOIE DE VIVRE ELIZABETH ARDEN. Cl. 51 (Int. Cl. 3). 3-30-48.
438,201. A MAN'S WORLD. Cl. 52 (Int. Cl. 3). 4-13-48.
438,215. DURASTAN. Cl. 23 (Int. Cl. 7). 4-13-48.
438,778. BAYBANK. Cl. 18 (Int. Cl. 5). 5-11-48.
500,036. RAJAH. Cl. 6 (Int. Cl. 3). 4-6-48.
500,070. WHEATENA. Cl. 46 (Int. Cl. 30). 4-13-48.
500,209. RANI. Cl. 6. (Int. Cl. 3). 5-11-48.
500,341. PINNACLE. Cl. 11 (Int. Cl. 16). 5-11-48.
500,342. RAINBOW. Cl. 11 (Int. Cl. 16). 5-11-48.
500,374. PHARMCO. Cl. 49 (Int. Cl. 1). 5-18-48.
500,420. READY-MASTER. Cl. 11 (Int. Cl. 16). 5-18-48.
500,421. TITAN. Cl. 11 (Int. Cl. 16). 5-18-48.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

790,245. TIPARETTE. Cl. 17. 6-1-65.
804,965. JP AND DESIGN. Cl. 12. 3-8-66.

Section 8

704,852. GASTRODEX. Cl. 18. 9-27-60.
704,924. FISHAND. Cl. 22. 9-27-60.
705,125. DANDELION DOOM. Cl. 6. 10-4-60.
705,126. DOOM. Cl. 6. 10-4-60.
705,172. IDEAL. Cl. 21. 10-4-60.
705,561. LEVERETTE AND DESIGN. Cl. 27. 10-11-60.
705,604. THE MOOD AND THE FOOD. Cl. 38. 10-11-60.
705,644. SECURATEX. Cl. 42. 10-11-60.
707,756. FIGURE OF A BOWLER. Cl. 22. 11-29-60.
707,798. PIXIE THERMELECTRIC. Cl. 31. 11-29-60.
712,583. TRU-FLO. Cl. 1. 3-21-61.
713,512. PORTA-PAD. Cl. 32. 4-4-61.
714,653. SAGA. Cl. 19. 5-2-61.
715,096. HEPCO. Cl. 38. 5-9-61.
717,102. FULDAY. Cl. 18. 6-20-61.
717,860. SAGA. Cl. 26. 7-4-61.
720,322. DYNA-MICRO-GAGE. Cl. 26. 8-22-61.

The following registrations issued Jan. 16, 1962

726,387. PH AND DESIGN. Cl. 2.
726,388. SHOW CUP. Cl. 2.
726,396. CAL-DAK. Cl. 2.
726,401. MAGNA-TITE. Cl. 3.
726,404. MAR-KAM. Cl. 3.
726,408. LUXAPOLE. Cl. 6.
726,411. CRC SEAL COTE. Cl. 6.
726,414. UNI-VERSOL. Cl. 6.
726,422. STEP-TRIM AND DESIGN. Cl. 12.
726,423. BURE-O AND DESIGN. Cl. 12.
726,426. USE ME NEXT—I'M READY FOR SERVICE. Cl. 13.
726,427. RAINBO. Cl. 13.
726,436. FLEX-KOLOR. Cl. 14.
726,437. FLEX-COLOR. Cl. 14.
726,439. PERMACLAD. Cl. 16.
726,440. REDWOOD MAGIC. Cl. 16.
726,443. NYWELD. Cl. 16.
726,444. MOPLEN. Cls. 16, 19, 21, and 24.
726,447. FA ONE DAY PAC AID AND DESIGN. Cl. 18.
726,452. CHAMP. Cl. 21.
726,456. KEN-TRON. Cl. 21.
726,457. KT AND DESIGN. Cl. 21.
726,459. AMPHENOL BORG AND DESIGN. Cl. 21.
726,460. GRAMERCY. Cl. 21.
726,461. AIRELBE. Cl. 21.
726,464. LIFEGARD. Cl. 22.
726,465. PROTECTO. Cl. 22.
726,466. KISI. Cl. 23.
726,473. TEL-GO. Cl. 23.
726,476. VARI-FLOW. Cl. 26.
726,478. GAMMASCAN. Cl. 26.
726,479. BIOTRONIC AND DESIGN. Cl. 26.
726,482. DATAQUICK. Cl. 26.
726,483. T AND DESIGN. Cl. 26.
726,484. POWR PROB AND DESIGN. Cl. 26.
726,488. MELPAR. Cl. 26.
726,489. MELPAR M IN A TRIANGLE. Cl. 26.
726,491 IDEAL Cl. 27.
726,496. LUSTRA-GEMS. Cl. 28.
726,497. NINA RICCI. Cl. 28.
726,499. SOFT STROKE. Cl. 29.
726,504. REPRESENTATION OF FOUR LIGHTNING ARROWS. Cl. 31.
726,505. NAB-A-NAP AND DESIGN. Cl. 32.
726,510. ALISCO. Cl. 32.
726,511. PLASTI-QUEEN. Cl. 32.
726,512. CHILL AIR. Cl. 34.
726,518. TUNE-RITE. Cl. 36.
726,519. SOENNECKEN AND DESIGN. Cl. 37.
726,522. HANDI-PANTI. Cl. 39.
726,525. ANTHONY GESTURE ETC. AND DESIGN. Cl. 39.
726,535. OLE SAFETY SAM. Cl. 39.
726,537. FLEXELF. Cl. 39.
726,538. SQUARE "B" AND DESIGN. Cl. 39.
726,541. ARILON. Cl. 40.
726,542. SWEDENMARK. Cl. 42.
726,546. CAPTIVEX. Cl. 42.
726,550. BALTONE. Cl. 42.
726,553. SURESTEP. Cl. 42.
726,557. VELDO. Cl. 43.
726,564. MD CO AND DESIGN. Cl. 44.
726,565. MARMITTA CASERA. Cl. 46.
726,566. "MARMITTA MARINERA." Cl. 46.
726,571. LANCER. Cl. 46.
726,572. BETTY BURNS. Cl. 46.
726,574. KETCHARD. Cl. 46.
726,579. FRENCH TREAT. Cl. 46.
726,583. PAPER-SCULPT. Cl. 50.
726,589. GRAY BAN. Cl. 51.
726,591. WYPIT. Cl. 52.
726,600. S & Q ETC. AND DESIGN. Cl. 101.
726,601. BARRY PROCESS. Cl. 101.
726,602. EVER-READY-CHEKS. Cl. 102.
726,603. IB IN FORM OF MONOGRAM ETC. Cl. 102.
726,605. WONDERS OF THE WORLD TOURS. Cl. 105.

726,607. LA PLAYA SETET. Cl. 107.
726,608. FTD AND WREATH, TORCH AND SEAL DESIGN. Cl. 107.
726,613. HOSCH FILE-A-CHEK SYSTEM. Cl. 32.

Erratum

In the OFFICIAL GAZETTE of January 16, 1968, at page TM 147, under Trademark Registrations Canceled, Section 8, "724,540. COURTELLE. Cl. 42." should be inserted.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

37,016. REPRESENTATION OF INTERSECTING LINES. Cl. 1. 9-3-01. Joseph Dixon Crucible Co., Jersey City, N.J. Corrected: In the certificate, line 3, "the" should be deleted and *The* should be inserted, in the heading, signature, drawing and in the statement, column 1, line 1, before "Joseph" *The* should be inserted.

37,017. DXN. Cl. 1. 9-3-01. Joseph Dixon Crucible Co., Jersey City, N.J. Corrected: In the certificate, line 3, "the" should be deleted and *The* should be inserted, in the heading, signature, drawing and in the statement, column 1, line 1, before "Joseph" *The* should be inserted.

131,087. TICONDEROGA. Cl. 37. 5-4-20. Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the certificate, lines 3 and 18, in the heading, signature and in the statement, column 1, line 1, before "Joseph" *The* should be inserted.

235,526. WILCO. Cl. 6. 11-22-27. The Geo. L. Williams Company, Cleveland, Ohio. Amended: In the statement, column 2, lines 2 through 4, ", and disclaims registration of words 'Sanitary' and 'Promotion Products'" is deleted and the drawing is amended to appear:

WILCO

340,510. BALITOPPER. Cl. 39. 11-10-36. Fay-Miss Brassiere Co., Inc. Hall Company, Inc., New York, N.Y. Amended: In the statement, column 1, line 9, "corsets," is deleted and in line 10, "and girdles" is deleted.

436,944. CENTER OF ATTRACTION. Cl. 51. 3-2-48. Lentheric, Incorporated. Helene Curtis Industries, Inc., Chicago, Ill. Amended: In the statement, column 1, lines 6 through 8, the description of the goods is deleted and *toilet waters*, is inserted, and the drawing is amended to appear:

CENTER OF ATTRACTION

504,809. M-M. Cl. 23. 11-30-48. Minneapolis-Moline Power Implement Company. Minneapolis-Moline, Inc., Hopkins, Minn. Amended: In the statement, column 1, line 11, "threshing machines," is deleted, in line 17, "ridge busters, rotary hoes," is deleted, in line 19, "and horse" is deleted and in lines 20 and 21, "wheel mounted hay loaders," is deleted and *and* is inserted.

676,859. H-W APACHE. Cl. 12. 4-14-59. Harbison-Walker Refractories Company, Pittsburgh, Pa. Amended to appear:

APACHE

720,380. TERRI CORD. Cl. 39. 8-22-61. Terri-Cord Mills, Inc. Advance Glove Manufacturing Company, Detroit, Mich. Amended to appear:

TERRI-CORD

728,483. COSSOR AND DESIGN. Cl. 21. 3-13-62. A. C. Cossor Limited, London, England. Amended to appear:

COSSOR

752,758. INTERCAST. Cl. 14. 7-16-63. Gries Reproducer Corporation, New Rochelle, N.Y. Corrected: In the statement, column 2, line 4, "1960" should be deleted and *1950* should be inserted.

774,963. RAILWEIGHT. Cl. 26. 8-11-64. International Railroads' Weighing Corporation, Northfield, Ill. Corrected: In the statement, column 1, line 1, "Illinois" should be deleted and *Indiana* should be inserted.

781,738. DISPO. Cl. 26. 12-15-64. American Hospital Supply Corporation, Evanston, Ill. Corrected: In the statement, column 2, line 4, "1963" should be deleted and *1953* should be inserted.

787,616. WORLD AND DESIGN. Cl. 42. 3-30-65. World Carpet Mills, Inc. World Carpets, Inc., Dalton, Ga. Amended to appear:

WORLD

789,515. U.S. RICE AND DESIGN. Cl. A. 5-11-65. U.S. Rice Export Development Association. Rice Council for Market Development, Houston, Tex. Amended to appear:

U.S.RICE

823,869. PLEE-ZING. Cl. 9. 2-14-67. Plee-Zing, Inc., Evanston, Ill. Corrected: In the statement, column 1, line 1, "Illinois" should be deleted and *Delaware* should be inserted.

829,321. MARKSMAN LIGHT-TITE. Cl. 2. 5-30-67. Olin Mathieson Chemical Corporation. Olinkraft, Inc., West Monroe, La. Corrected: In the statement, column 1, line 3, "assignee of" and lines 4 and 5 should be deleted and before line 1, *Olinkraft, Inc. (Delaware corporation), West Monroe, La., assignee of* should be inserted.

830,432. VARI-PAK. Cl. 2. 6-20-67. Sealright Co., Inc., Fulton, N.Y. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *Delaware* should be inserted.

830,828. PLASTIKING. Cl. 2. 6-27-67. Sealright Co., Inc., Fulton, N.Y. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *Delaware* should be inserted.

836,492. PAKERKAN. Cl. 2. 10-10-67. Sealright Co., Inc., Fulton, N.Y. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *Delaware* should be inserted.

840,622. EDU KIT. Cl. 50. 12-12-67. Monroe International, Inc. Litton Business Systems, Inc., Orange, N.J. Corrected: In the statement, column 1, line 3, "merger and" should be deleted.

841,411. TRESSETTE. Cl. 40. 12–26–67. Fashion Tress, Inc., Miami Beach, Fla. Corrected: In the heading, "Principal" should be deleted and *Supplemental* should be inserted.

841,696. PKE-OP. Cl. 44. 1–2–68. American Cyanamid Company, Wayne, N.J. Corrected: In the heading, "1866" should be deleted and *1966* should be inserted.

841,897. IONIC. Cl. 12. 1–9–68. U.S. Plywood-Champion Papers Inc., New York, N.Y. Corrected: In the statement, column 1, line 1 after "Paper" the comma should be deleted and in line 4, "10022" should be deleted and *10017* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1 — Raw or Partly Prepared Materials

437,539. Mar. 30, 1948. Bond Crown & Cork Company, Wilmington, Del. Pub. by Continental Can Company, Inc., New York, N.Y.

CORK-TEX

For Composition Cork in the Form of Bars, etc. (Int. Cl. 19).

Class 8 — Smokers' Articles, Not Including Tobacco Products

434,629. Nov. 25, 1947. American Safety Razor Corporation, Brooklyn, N.Y. Pub. by Philip Morris Incorporated, d.b.a. American Safety Razor Company, New York N.Y.

A·S·R

For Pyrophoric Lighters (Int. Cl. 34).

Class 12 — Construction Materials

436,815. Feb. 24, 1948. The Monroe Company, Inc., Cleveland, Ohio. Pub. by registrant.

RUFFERSEAL

For Liquid Asbestos Hoof Cement (Int. Cl. 19).

Class 18 — Medicines and Pharmaceutical Preparations

435,001. Dec. 9, 1947. The Norwich Pharmacal Company, Norwich, N.Y. Pub. by registrant.

DIRECTAIS

For Preparations for Relief of Itching, etc. (Int. Cl. 5).

Class 21 — Electrical Apparatus, Machines, and Supplies

435,960. Jan. 20, 1948. Phelps Dodge Copper Products Corporation, New York, N.Y. Pub. by registrant.

PD-X

For Non-Metallic Sheathed Cable (Int. Cl. 9).

436,840. Feb. 24, 1948. The Huenefeld Company, Cincinnati, Ohio. Pub. by Union Metal Manufacturing Company, Canton, Ohio.

BOSS

For Electric Cutout Boxes and Fluorescent Lighting Fixtures (Int. Cls. 9 and 11).

Class 22 — Games, Toys, and Sporting Goods

437,943. Apr. 6, 1948. The Flying Tigers (American Volunteer Group—Chinese Air Force) Incorporated, Los Angeles, Calif. Pub. by registrant.

FLYING TIGERS

For Toy Animals (Int. Cl. 28).

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

236,033. Nov. 29, 1927. Utica Knife and Razor Company, Utica, N.Y. Pub. by Philip Morris Incorporated, d.b.a. American Safety Razor Company, New York, N.Y.

PAL

For Razor Blades, Hunting Knives, and Pocket Knives (Int. Cl. 8).

436,340. Feb. 3, 1948. Personna Blade Co., Inc., New York, N.Y. Pub. by Philip Morris Incorporated, d.b.a. American Safety Razor Company, New York, N.Y.

PERSONNA

For Razor Blades, Utility Knives, and Pocket Knives (Int. Cl. 8).

437,421. Mar. 23, 1948. Nicholson File Company, Providence, R.I. Pub. by registrant.

SUPER · SHEAR

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Class 40 — Fancy Goods, Furnishings, and Notions

434,555. Nov. 25, 1947. The De Long Hook and Eye Company, Philadelphia, Pa. Pub. by The Star Pin Company, Shelton, Conn.

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Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

435,764. Jan. 6, 1948. Native Laces & Textiles, Incorporated, New York, N.Y. Pub. by Indian Head Inc., New York, N.Y.

Native

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Class 44 — Dental, Medical, and Surgical Appliances

434,777. Dec. 9, 1947. Edward Wec. & Company, Inc., Long Island City, N.Y. Pub. by registrant.

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Class 46 — Foods and Ingredients of Foods

65,081. Sept. 3, 1907. Cadbury Brothers, Limited, Birmingham, England. Pub. by registrant.

CADBURY

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230,468. July 26, 1927. Cadbury Brothers, Limited, Birmingham, England. Pub. by registrant.

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Gamco Industries, Inc., d.b.a. Creative Visuals, Big Spring, Tex. 845,425, pub. 12–19–67. Cl. 26.
Gates Rubber Co., The, Denver, Colo. 845,460, pub. 12–19–67. Cl. 35.
Geigy Chemical Corp., Ardsley, N.Y. 845,248, pub. 12–19–67. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 845,249, pub. 12–19–67. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 845,598, pub. 12–19–67. Cl. 52.
General Electric Co., Hendersonville, N.C. 845,335–6, pub. 12–19–67. Cl. 21.
General Fire Extinguisher Corp., Northbrook, Ill. 845,258, pub. 12–19–67. Cl. 6.
General Instrument Corp., from General Instrument Corp., Newark, N.J. 845,637. Cl. 21.
General Motors Corp.: *See*—
Frigidaire Corp., The.
General Motors Corp., Detroit, Mich. 199,246, ren. 3–5–68. Cl. 19.
General Norit Co., Ltd.: *See*—
N.V. Algemeene Norit Maatschappij.
General RF Fittings, Inc., Boston, Mass. 845,321, pub. 12–19–67. Cl. 21.
General Tire & Rubber Co., The, Akron, Ohio. 845,452–3, pub. 12–19–67. Cl. 35.
Genesco Inc., Nashville, Tenn. 726,535, canc. Cl. 39.
George Urban Milling Co.: *See*—
Seaboard Allied Milling Corp.
Gilbert Plastics, Inc., Kenilworth, N.J. 726,388, canc. Cl. 2.
Girsberger & Tschappu, Zurich, Switzerland. 845,375, pub. 12–19–67. Cl. 23.
Gleason Works, The, Rochester, N.Y. 845,400, pub. 12–19–67. Cl. 23.
Glidden Co., The: *See*—
SCM Corp.
Gluck, William, d.b.a. Gluco, Monroeville, Pa. 845,393, pub 12–19–67. Cl. 23.
Gluco: *See*—
Gluck, William.
Golden Grain Macaroni Co., San Leandro, Calif. 845,645. Cl. 46.
Gotham Wedding Ring Co., Inc., New York, N.Y. 845,438, pub. 12–19–67. Cl. 28.
Grace, W. R., & Co., New York, N.Y. 845,600, pub. 12–19–67. Cl. 52.
Grand Award Division: *See*—
Plastichrome Greetings, Inc.
Gray Ban Corp., Wilkes-Barre, Pa. 726,589, canc. Cl. 51.
Greenberg, B. B., Co., Cranston, R.I. 845,436, pub. 12–19–67. Cl. 28.
Greenwald, H., Mfg. Co., Inc., Brooklyn, N.Y. 845,640. Cl. 25.
Greeting Craft School, The: *See*—
Engli, Frank.
Gries Reproducer Corp., New Rochelle, N.Y. 752,786, cor. Cl. 14.
Gross Galesburg Co., Galesburg, Ill. 845,516, pub. 12–19–67. Cl. 39.
Gubisch, Roland W., Chicago, Ill. 726,479, canc. Cl. 26.
Guilliams, Gordon L., d.b.a. Nob Hill Ice Cream Co., Portland, Oreg. 845,552, pub. 12–19–67. Cl. 46.
Hampshire, F. W., & Co. Ltd., Derby, England. 845,590, pub. 12–19–67. Cl. 51.
Hampshire, F. W., & Co. Ltd., Derby, England. 845,603, pub. 12–19–67. Cl. 52.
Hanes Corp., Winston-Salem, N.C. 845,492, pub. 12–19–67. Cl. 39.
Harbison-Walker Refractories Co., Pittsburgh, Pa. 676,559. Am. 7(d). Cl. 12.
Harnischfeger Corp., West Milwaukee, Wis. 845,391, pub. 12–19–67. Cl. 23.
Harper, H. M., Co., Morton Grove, Ill. 845,293, pub. 12–19–67. Cl. 13.
Harris, Frieda A., d.b.a. The Ketchard Kitchens, Southampton, N.Y. 726,574, canc. Cl. 46.
Harrison, Vera M., and Hazel M. Haren, Columbus, Ohio. 845,524, pub. 12–19–67. Cl. 42.
Hart Schaffner & Marx, Chicago, Ill. 845,523, pub. 12–19–67. Cl. 39.
Hassenfeld Bros. Inc., Pawtucket, R.I. 845,352, pub. 12–19–67. Cl. 22.
Hav-A-Squeeze Co.: *See*—
Plott, Gilbert B., Jr.
Hayden Flour Mills, Tempe, Ariz. 845,544, pub. 6–28–66. Cl. 46.
Hearst Corp., The, New York, N.Y. 845,486, pub. 12–19–67. Cl. 38.
Heartland Productions, Inc., Des Moines, Iowa. 845,464, pub. 12–19–67. Cl. 36.
Heider Mfg. Co., Carroll, Iowa. 845,302, pub. 12–19–67, Cl. 19.
Henninger-Brau Kommanditgesellschaft Auf Aktien, Frankfurt am Main, Germany. 845,574, pub. 12–19–67. Cl. 48.
Hepco Mfg. Co., Inc., New York, N.Y. 715,096, canc. Cl. 38.
Hercules Inc., Wilmington, Del. 845,255, pub. 12–19–67. Cl. 6.
Herman, James M., New York, N.Y. 845,470, pub. 12–19–67. Cl. 37.
Hershey Chocolate Corp., Hershey, Pa. 845,568, pub. 12–5–67. Cl. 46.
Hewitt-Robins Inc., Stamford, Conn. 845,454, pub. 12–19–67. Cl. 35.
Highgrove Fruit Association, Highgrove, to Riverside Consolidated Growers, Riverside, Calif. 242,520, ren. 3–5–68. Cl. 46.
Hindu Incense Mfg. Co., Chicago, Ill. 500,036, ren. 3–5–68. Cl. 6.
Hindu Incense Mfg. Co., Chicago, Ill. 500,209, ren. 3–5–68. Cl. 6.
Hines, Edward, Lumber Co., Chicago, Ill. 845,279, pub. 12–19–67. Cl. 12.
Hofler, Johann, Plastik-Spielwarenfabrik, Bavaria, Germany. 845,340, pub. 12–19–67. Cl. 22.
Holley Carburetor Co., Warren, Mich. 845,374, pub. 12–19–67. Cl. 23.
Home Dental Aids Co., d.b.a. Home Dental Aids Co., Inc., Bakersfield, Calif. 845,542, pub. 12–19–67. Cl. 44.
Hoopeston Junior Chamber of Commerce, Hoopeston, Ill. 845,630, pub. 12–19–67. Cl. 107.
Hosch, G. C., Lake Worth, Fla. 726,613, canc. Cl. 32.
House of Plastic, Inc., The, Norfolk, Va. 845,663. Cl. 103.
Hudson Hosiery Co., Charlotte, N.C. 845,488, pub. 12–19–67. Cl. 39.
Huenfeld Co., The, Cincinnati, by Union Metal Mfg. Co., Canton, Ohio. 436,840, 12(c) pub. 3–5–68. Cl. 21.
Hulman & Co., Terre Haute, Ind. 845,553, pub. 12–19–67. Cl. 46.
Humble Oil & Refining Co.: *See*—
Standard Oil Co. of N.J.
Hunt Electronics Co., Dallas, Tex. 845,315, pub. 12–19–67. Cl. 21.
Huntington Laboratories, Inc., Huntington, Ind. 845,599, pub. 12–19–67. Cl. 52.
Hutch Athletic Goods Co., Cincinnati, Ohio. 845,343, pub. 12–19–67. Cl. 22.
Hydromatics, Inc., Bloomfield, N.J. 845,292, pub. 12–5–67. Cl. 13.
Ideal Watch Co., Inc., The, New York, N.Y. 726,491, canc. Cl. 27.
Imperial Knife Associated Companies, Inc., Providence, R.I. 845,394, pub. 12–19–67. Cl. 23.
Indian Head Inc.: *See*—
Native Laces & Textiles, Inc.
Industrial Acoustics Co., Inc., Bronx, N.Y. 845,481, pub. 12–19–67. Cl. 38.
Insurance Budge, Inc., Toledo, Ohio. 726,603, canc. Cl. 102.
Intellux Inc., Goleta, Calif. 845,332, pub. 12–19–67. Cl. 21.
Interchemical Corp., New York, N.Y. 435,006, ren. 3–5–68. Cl. 1.
Interchemical Corp., New York, N.Y. 435,209, ren. 3–5–68. Cl. 11.
Interchemical Corp., New York, N.Y. 435,713, ren. 3–5–68. Cl. 1.
International Beverage Controls, Inc., Wichita, Kans. 845,364, pub. 12–19–67. Cl. 23.
International Railroads' Weighing Corp., Northfield, Ill. 774,963, cor. Cl. 26.
Interstate Metal Products Co., Chicago, Ill. 726,511, canc. Cl. 32.
Investors Mutual, Inc., Minneapolis, Minn. 845,617, pub. 12–19–67. Cl. 102.
Invincible Products Corp., Chicago, Ill. 845,588, pub. 12–19–67. Cl. 51.
Iota-Cam Corp., Wakefield, Mass. 845,641. Cl. 21.

Irish Truck Lines, Inc., Montebello, Calif. 845,624, pub. 12–19–67. Cl. 105.
Ironside Mfg. Co., Warren, Mich. 726,443, canc. Cl. 16.
Israel Dehydrated Products Ltd., Ramat-Gan, Israel. 845,548, pub. 12–19–67. Cl. 46.
Jaeger Co. Ltd., The: *See*—
Jaeger's Sanitary Woolen System Co., Dr.
Jaeger's Sanitary Woolen System Co., Dr., New York, N.Y., to The Jaeger Co. Ltd., London, England. 69,201, ren. 3–5–68. Cl. 39.
Jaquet, Inc.: *See*—
Jaquet, Josephine.
Jaquet, Josephine, Jersey City, N.J., to Jaquet, Inc., New York, N.Y. 234,530, ren. 3–5–68. Cl. 51.
Jaquet, Josephine, Jersey City, N.J., to Jaquet, Inc., New York, N.Y. 234,696, ren. 3–5–68. Cl. 52.
Jasper Engine Exchange, Inc., Jasper, Ind. 845,388, pub. 12–19–67. Cl. 23.
Johns-Manville Corp., New York, N.Y. 845,461, pub. 12–19–67. Cl. 35.
Johnson, Axel L., Tucson, Ariz. 845,345, pub. 12–19–67. Cl. 22.
Johnson, Endicott Corp., Endicott, N.Y. 845,502, pub. 12–19–67. Cl. 39.
Johnston, Inc., Dallas, Tex. 845,493, pub. 12–19–67. Cl. 39.
Johnson, L. E., Products, Inc., Elkhart, Ind. 804,965, canc. Cl. 12.
Johnson, S. C., & Son, Inc., Racine, Wis. 845,235, pub. 12–19–67. Multiple Class (Classes 4, 6, and 52).
Kalamazoo Industrial Services, Inc., Kalamazoo, Mich. 726,466, canc. Cl. 23.
Kammerer, Marjorie, Associates: *See*—
Kammerer, Marjorie.
Kammerer, Marjorie, d.b.a. Marjorie Kammerer Associates, New York, N.Y. 726,404, canc. Cl. 3.
Kane, Irving J., New York, N.Y. 845,256, pub. 12–19–67. Cl. 6.
Katie Kate's Doll House: *See*—
Craig, Sarah S.
Kay Electric Co., Pine Brook, N.J. 845,328, pub. 12–19–67. Cl. 21.
Kemper, Merle E., Co.: *See*—
Kemper, Merle E.
Kemper, Merle E., d.b.a. Merle E. Kemper Co., Kansas City, Mo. 435,743, ren. 3–5–68. Cl. 12.
Kendall Co., The, Walpole, Mass. 726,538, canc. Cl. 39.
Kendall Co., The, Walpole, Mass. 845,534, pub. 12–19–67. Cl. 44.
Kendall Co., The, Walpole, Mass. 845,538, pub. 12–19–67. Cl. 44.
Kenlon Productions, Inc., New York, N.Y. 726,518, canc. Cl. 36.
Kent Feeds, Inc., Muscatine, Iowa. 845,644. Cl. 46.
Ken-Tron Corp., Lynn, Mass. 726,456–7, canc. Cl. 21.
Ketchard Kitchens, The: *See*—
Harris, Frieda A.
Keuffel & Esser Co., Hoboken, N.J. 235,623, ren. 3–5–68. Cl. 37.
Keuffel & Esser Co., Hoboken, N.J. 235,971, ren. 3–5–68. Cl. 28.
Keuffel & Esser Co., Hoboken, N.J. 237,101, ren. 3–5–68. Cl. 37.
Kimberly-Clark Corp., Neenah, Wis. 845,535, pub. 12–19–67. Cl. 44.
Kirsch Co., Sturgis, Mich. 845,291, pub. 12–19–67. Cl. 13.
Klein Chocolate Co., Elizabethtown, Pa. 845,567, pub. 10–31–67. Cl. 46.
Knoll Associates, Inc., New York, N.Y. 845,444, pub. 12–19–67. Cl. 32.
Koehler, Albert, Foley, Ala. 726,496, canc. Cl. 28.
Koh-I-Noor, Inc., Bloomsbury, N.J. 845,471, pub. 12–19–67. Cl. 37.
Kohner Bros., Inc., East Paterson, N.J. 845,355, pub. 12–19–67. Cl. 22.
Kolbel, Gert F., G.m.b.H., Hannover, Germany. 845,339, pub. 12–19–67. Cl. 22.
Kraft Foods Ltd.: *See*—
Kraft Walker Cheese Co. Proprietary Ltd.
Kraft Walker Cheese Co. Proprietary Ltd., South Melbourne, to Kraft Foods Ltd., Port Melbourne, Victoria, Australia. 435,592, ren. 3–5–68. Cl. 46.
Krauss, John, Inc., Jamaica, N.Y. 845,643. Cl. 46.
L.M. & L. Corp., Claremont, N.H. 845,367, pub. 12–19–67. Cl. 23.
LTV Ling Altec, Inc., Anaheim, Calif. 845,327, pub. 12–19–67. Cl. 21.
La Bow, Haynes Co., Inc., Seattle, Wash. 845,619, pub. 12–19–67. Cl. 102.
Lake Chemical Co., Chicago, Ill. 845,633, pub. 12–19–67. Cl. 6.
Lake County Fruit Exchange: *See*—
Mount Konocti Fruit Exchange.
Lake County Fruit Exchange, Kelseyville, Calif. 237,688, ren. 3–5–68. Cl. 46.
La Playa Sextet, Brooklyn, N.Y. 726,607, canc. Cl. 107.
Large Print Publications: *See*—
Carroll, William.
Laverne International Ltd., New York, N.Y. 845,612, pub. 12–19–67. Cl. 100.
L'Electronique Appliquee, Paris, France. 845,414, pub. 12–19–67. Cl. 26.
Lennox Industries, Inc., Marshalltown, Iowa. 845,446, pub. 12–19–67. Cl. 34.
Lentheric, Inc., to Helene Curtis Industries, Inc., Chicago, Ill. 436,944. Am. 7(d). Cl. 51.
Lewis, Tillie, Foods, Inc., from Flotill Products, Inc., Stockton, Calif. 726,579, canc. Cl. 46.
Lilliston Implement Co., Albany, Ga. 845,399, pub. 12–19–67. Cl. 23.
Limoneira Co., Santa Paula, Calif. 242,971, ren. 3–5–68. Cl. 46.
Lincoln Metal Products Corp., Brooklyn, N.Y. 845,227, pub. 12–19–67. Cl. 2.
Lindly and Co., Inc., Mineola, N.Y. 720,322, canc. Cl. 26.
Linker, Hal, Travel Service, Inc., d.b.a. Wonders of the World Tours, Los Angeles, Calif. 726,605, canc. Cl. 105.
Litecontrol Corp., Watertown, Mass. 845,447, pub. 12–19–67. Cl. 34.
Litton Industries, Inc., Beverly Hills, Calif. 845,361, pub. 12–19–67. Cl. 23.
Lochman, Philip, & Co., Evanston, Ill. 845,244, pub. 12–19–67. Cl. 6.
Loroco Industries, Inc., Reading, Ohio. 726,583, canc. Cl. 50.
Lowe's, Inc., Cassopolis, Mich. 845,564, pub. 12–19–67. Cl. 46.
Lujay Industries, Inc., New York, N.Y. 845,505, pub. 12–19–67. Cl. 39.
Luscoe Products Ltd., Toronto, Ontario, Canada. 704,852, canc. Cl. 18.
Luyties Pharmacal Co., to Luyties Pharmacal Co., St. Louis, Mo. 435,734, ren. 3–5–68. Cl. 18.
MCA Inc., Universal City, Calif. 845,463, pub. 12–19–67. Cl. 36.
Macaulay & Co.: *See*—
Sazerac Co., Inc.
Magna Sales Co., Chicago, Ill. 845,417, pub. 12–19–67. Cl. 26.
Maidenform, Inc., New York, N.Y. 845,510, pub. 12–19–67. Cl. 39.
Martin-Marietta Corp., New York, N.Y. 845,263, pub. 12–19–67. Cl. 6.
Mark Mfg. Co., Salem, Oreg. 726,505, canc. Cl. 32.
Market Confections, Inc., d.b.a. Western Candy Co., Los Angeles, Calif. 845,571, pub. 12–19–67. Cl. 46.
Marlan Co., Chicago, Ill. 845,572, pub. 12–19–67. Cl. 46.
Marshall Field & Co., Chicago, Ill., to Fieldcrest Mills, Inc., Spray, N.C. 434,737, ren. 3–5–68. Cl. 21.
Marvin, W. H., Co., The: *See*—
Black Palm, Inc.
Masten Corp., Chicago, Ill. 845,294, pub. 12–19–67. Multiple Class (Classes 14 and 23).
Mathatronics, Inc.: *See*—
Wright, Barry, Corp.
Mattel, Inc., Hawthorne, Calif. 845,357–60, pub. 12–19–67. Cl. 22.
McDermott & Wall, to E. T. Wall, Grower-Shipper, Riverside, Calif. 243,370, ren. 3–5–68. Cl. 46.
McGraw-Edison Co., Milwaukee, Wis. 845,408, pub. 12–19–67. Cl. 24.
McMullen, J. R., Co., Inc., New York, N.Y. 845,491, pub. 12–19–67. Cl. 39.
Melpar, Inc., Falls Church, Va. 726,488–9, canc. Cl. 26.
Merit Products, Inc., Los Angeles, Calif. 845,232, pub. 12–19–67. Cl. 4.
Metaline Products, Inc., Elkhart, Ind. 845,396, pub. 12–19–67. Cl. 23.
Metro Wholesale Corp., New York, N.Y. 845,442, pub. 12–19–67. Cl. 32.
Metro Wholesale Corp., New York, N.Y. 845,596, pub. 12–19–67. Cl. 52.
Meyer Products, Inc., Cleveland, Ohio. 845,362, pub. 12–19–67. Cl. 23.
Michigan Hot Rod Association, Centerline, Mich. 845,233–4, pub. 12–19–67. Cl. 4.
Midland-Ross Corp., Toledo, Ohio. 845,445, pub. 12–19–67. Cl. 34.
Midwest Dental Mfg. Co., Melrose Park, Ill. 726,564, canc. Cl. 44.
Miehle-Goss-Dexter, Inc., Chicago, Ill. 845,382, pub. 12–19–67. Cl. 23.
Miller Chemical Co., Inc., Omaha, Nebr. 845,250, pub. 9–26–67. Cl. 6.
Miller Chemical Co., Inc., Omaha, Nebr. 845,272, pub. 2–26–67. Cl. 10.
Minneapolis-Moline Power Implement Co., to Minneapolis-Moline, Inc., Hopkins, Minn. 504,309. Am. 7(d). Cl. 23.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 433,291, ren. 3–5–68. Cl. 37.
Mr. Mod Shop, Inc., New Orleans, La. 845,413, pub. 12–19–67. Cl. 26.
Mr. Mod Shop, Inc., New Orleans, La. 845,434, pub. 12–19–67. Cl. 28.
Mitchell Designs, New York, N.Y. 845,437, pub. 12–19–67. Cl. 28.
Mitchell, John E., Co., Inc., Dallas, Tex. 845,226, pub. 12–19–67. Cl. 2.
Mite Corp., New Haven, Conn. 845,418, pub. 12–19–67. Cl. 26.
Moberg Laboratories, Inc.: *See*—
Sharp Industries, Inc.
Modern Shoe Co., St. Louis, Mo. 845,511, pub. 12–19–67. Cl. 39.
Monaco Cigar Corp., Tampa, Fla. 845,299, pub. 12–19–67. Cl. 17.
Monroe Co., Inc., The, Cleveland, Ohio. 436,815, 12(c) pub. 3–5–68. Cl. 12.
Monroe International, Inc., to Litton Business Systems, Inc., Orange, N.J. 840,622. cor. Cl. 50.
Montecatini, Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy. 726,444, canc. Multiple Class (Classes 16, 19, 21, and 24).
Moore, E. R., Co., Niles, Ill. 845,507, pub. 12–19–67. Cl. 39.
Morris, Philip, Inc.: *See*—
American Safety Razor Corp.
Personna Blade Co., Inc.
Utica Knife & Razor Co.
Mt. Konocti Fruit Exchange, d.b.a. Lake County Fruit Exchange, to Lake County Fruit Exchange, Kelseyville, Calif. 235,004, ren. 3–5–68. Cl. 46.

Movietonews, Inc.: *See*—
Fox-Case Corp.
Mueller Brass Co., Port Huron, Mich. 240,686, ren. 3–5–68. Cl. 13.
Muller, Judith, Ltd., Haifa, Israel. 845,657. Cl. 51.
Murray, George, Tire Co., Peoria, Ill. 845,459, pub. 12–19–67. Cl. 35.
N.V. Algemeene Norit Maatschappij, d.b.a. General Norit Co., Ltd., Amsterdam, Netherlands, and Jacksonville, Fla., to Norit N.V., Amsterdam-C, Netherlands. 435,640, ren. 3–5–68. Cl. 18.
National Bank of Tulsa, Tulsa, Okla. 845,616, pub. 8–15–67. Cl. 102.
National Distillers & Chemical Corp., New York, N.Y., from Bridgeport Brass Co., Bridgeport, Conn. 726,436–7, canc. Cl. 14.
National Homes Corp., Lafayette, Ind. 845,282, pub. 12–19–67. Cl. 12.
Native Laces & Textiles, Inc., by Indian Head Inc., New York, N.Y. 435,764, 12(c) pub. 3–5–68. Cl. 42.
Nelson Laboratories, Inc., Rochester, N.Y. 845,240, pub. 11–14–67. Multiple Class (Classes 6 and 52).
New York Pants Co., Inc., New York, N.Y. 726,525, canc. Cl. 39.
Nicholl Brothers, Inc., Kansas City, Mo. 845,323, pub. 12–19–67. Cl. 21.
Nicholson File Co., Providence, R.I. 437,421, 12(c) pub. 3–5–68. Cl. 23.
Nishimoto Trading Co., Ltd., Kobe, Japan. 845,545, pub. 12–19–67. Cl. 46.
Nob Hill Ice Cream Co.: *See*—
Guilliams, Gordon L.
Norco, Inc., Los Angeles, Calif. 707,798, canc. Cl. 31.
Norit N.V.: *See*—
N.V. Algemeene Norit Maatschappij.
North American Provisions Co.: *See*—
Armour & Co.
Norwich Pharmacal Co., The, Norwich, N.Y. 435,001, 12(c) pub. 3–5–68. Cl. 18.
O/E/N Acquisitions, Inc., from Dodge Fibers Corp., Hoosick Falls, N.Y. 845,455, pub. 9–19–67. Cl. 35.
Oak Electro/Netics Corp., Crystal Lake, from Phillips-Eckardt Electronic Corp., Joliet, Ill. 845,316, pub. 12–19–67. Cl. 21.
Objectivist, Inc., The, New York, N.Y. 845,482, pub. 12–19–67. Cl. 38.
Ohio Art Co., The, Bryan, Ohio. 845,354, pub. 12–19–67. Cl. 22.
Okonite Co., The, Passaic, N.J. 845,318, pub. 12–19–67. Cl. 21.
Olewitz, Murray, Inc., New York, N.Y. 845,494, pub. 12–19–67. Cl. 39.
Olin Mathieson Chemical Corp., to Olinkraft, Inc., West Monroe, La. 829,321, cor. Cl. 2.
Olympia Werke AG, Wilhelmshaven, Germany. 845,274, pub. 12–19–67. Cl. 11.
Oneida Ltd., Oneida, N.Y. 845,395, pub. 12–19–67. Cl. 23.
Organ-Meister, Inc., Miami Beach, Fla. 845,462, pub. 12–19–67. Cl. 36.
Oulevay S.A., Vaud, Switzerland. 845,556, pub. 12–19–67. Cl. 46.
Oxford Industries, Inc., Los Angeles, Calif. 845,480, pub. 12–19–67. Cl. 38.
Pan American Barter Co., Inc., The, New York, N.Y. 705,561, canc. Cl. 27.
Parke, Davis & Co., Detroit, Mich. 845,543, pub. 12–19–67. Cl. 44.
Parker's Products, Inc., Fort Worth, Tex. 845,551, pub. 12–19–67. Cl. 46.
Pearsall Chemical Corp., Phillipsburg, N.J. 845,251, pub. 12–19–67. Cl. 6.
Peninsular Life Insurance Co., Jacksonville, Fla. 845,620, pub. 12–19–67. Cl. 102.
Pennsalt Chemicals Corp., Philadelphia, Pa. 845,252, pub. 12–19–67. Cl. 6.
Pennsalt Chemical Corp., Philadelphia, Pa. 845,597, pub. 12–19–67. Cl. 52.
Penobscot Shoe Co., Boston, Mass. 845,517, pub. 12–19–67. Cl. 39.
Personna Blade Co., Inc., by Philip Morris Inc., d.b.a. American Safety Razor Co., New York, N.Y. 436,340, 12(c) pub. 3–5–68. Cl. 28.
Pert Fashions, Inc., New York, N.Y. 845,499, pub. 12–19–67. Cl. 39.
Phelps Dodge Copper Products Corp., New York, N.Y. 435,960, 12(c) pub. 3–5–68. Cl. 21.
Phillips-Eckardt Electronic Corp.: *See*—
Oak Electro/Netics Corp.
Pindyck, Charles, Inc., New York, N.Y. 845,520, pub. 12–19–67. Cl. 39.
Pitman Mfg. Co., Grandview, Mo. 845,373, pub. 12–19–67. Cl. 23.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 845,405, pub. 12–19–67. Cl. 23.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 845,428, pub. 12–19–67. Cl. 26.
Pittsburgh Railways Co., Cary, Ill. 845,286, pub. 12–19–67. Cl. 13.
Plain, John, & Co., Chicago, Ill. 845,512, pub. 12–19–67. Cl. 39.
Plastichrome Greetings, Inc., d.b.a. Grand Award Division, Jamaica Plain, Mass. 845,477, pub. 12–19–67. Cl. 38.
Plee-Zing, Inc., Evanston, Ill. 823,869, cor. Cl. 9.
Plott, Gilbert B., Jr., d.b.a. Hav-A Squeeze Co., Tuscumbia, Ala. 845,348, pub. 12–19–67. Cl. 22.
Plough, Inc., Memphis, Tenn. 845,587, pub. 12–19–67. Cl. 51.
Poly Choke Co., Inc., The, Hartford, Conn. 436,169, ren. 3–5–68. Cl. 9.
Polyurethane Engineering Techniques Co., Inc., Lake Bluff, Ill. 845,401, pub. 12–19–67. Cl. 23.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 845,458, pub. 12–19–67. Cl. 35.
Positive Chemical Corp., Grand Rapids, Mich. 845,238, pub. 12–19–67. Cl. 5.
Power, Fredk. A., & Sons, Ltd., Birmingham, England. 845,287, pub. 12–19–67. Cl. 13.
Professional Instruments Co., Minneapolis, Minn. 845,389, pub. 12–19–67. Cl. 23.
Proudfoot Hosiery Corp., New York, N.Y. 845,489–90, pub. 12–19–67. Cl. 39.
Przedsiebiorstwo Handlu Zagranicznego "Agros," from Centrala Handlu Zagranicznego "Rolimpex," Warsaw, Poland. 845,575, pub. 12–19–67. Cl. 49.
Publicker Industries Inc., Philadelphia, Pa. 500,374, ren. 3–5–68. Cl. 49.
Pyramid Rubber Co., The, Ravenna, Ohio. 705,172, canc. Cl. 21.
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Radar Design Corp., Syracuse, N.Y. 845,329, pub. 12–19–67. Cl. 21.
Ralston Purina Co., St. Louis, Mo. 845,647–52. Cl. 46.
Ramada Inns, Inc., Phoenix, Ariz. 845,576, pub. 12–19–67. Cl. 49.
Ramada Inns, Inc., Phoenix, Ariz. 845,611, pub. 12–19–67. Cl. 100.
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Raymond Corp., The, Greene, N.Y. 845,363, pub. 12–19–67. Cl. 23.
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Riverside Laboratories, Geneva, Ill. 845,276, pub. 12–19–67. Cl. 12.
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Roper Research Associates, Inc., New York, N.Y. 845,484, pub. 10–3–67. Cl. 38.
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Rothmans of Pall Mall Ltd., Zurich, Switzerland. 845,635. Cl. 17.
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St. Regis Paper Co., New York, N.Y. 845,266, pub. 12–19–67. Cl. 7.
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Saturn Corp., The, Denver Colo. 845,639. Cl. 22.
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Scott Paper Co., Delaware County, Pa. 845,475–6, pub. 12–19–67. Cl. 37.
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Sea & Ski Corp., San Francisco, Calif. 845,518, pub. 12–19–67. Cl. 39.
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Sealright Co., Inc., Fulton, N.Y. 836,492, cor. Cl. 2.
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Semple, Janney, Hill & Co., Hopkins, Minn. 726,600, canc. Cl. 101.
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Sheetz, Elie, Washington, D.C., to Martha Washington Kitchens, Inc., Chicago, Ill. 63,564, ren. 3–5–68. Cl. 46.
Shelby Seamless Hosiery Mills, Inc., Shelby, N.C. 845,504, pub. 12–19–67. Cl. 39.
Shockley's Pancake House, Inc., Florence, Ala. 845,661. Cl. 100.
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Signode Corp., Chicago, Ill. 845,403, pub. 12–19–67. Cl. 23.
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Simoniz Co., Chicago, Ill. 845,660. Cl. 52.
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Simplot, J. R., Co., Boise, Idaho. 845,264, pub. 12–19–67. Cl. 6.
Simplot, J. R., Co., Boise, Idaho. 845,278, pub. 12–19–67. Cl. 10.
Sinigagliesi, Carlos & Cia. S.A. Ind. & Com., Buenos Aires, Argentina. 845,500, pub. 12–19–67. Cl. 39.
Sireno Signal Mfg. Corp., Kearny, N.J. 845,322, pub. 12–19–67. Cl. 21.
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Southern Fiber Glass Products, Inc., Sanford, Fla. 845,308, pub. 12–19–67. Cl. 19.
Southern Mills, Inc., Atlanta, Ga. 845,410, pub. 12–19–67. Cl. 24.
Southwest Forest Industries, Inc., Phoenix, Ariz. 845,469, pub. 12–19–67. Cl. 37.
Spee Dee Sales Co., Walnut Creek, Calif. 726,423, canc. Cl. 12.
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Sterling Merchandise Co., Akron, Ohio. 845,435, pub. 12–19–67. Cl. 28.
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Sun Oil Co., Philadelphia, Pa. 435,621, ren. 3–5–68. Cl. 21.
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T.M.C. Power Distribution, Inc., Alexandria, Va. 845,314, pub. 12–19–67. Cl. 21.
Tami Sportswear, San Francisco, Calif. 845,506, pub. 12–19–67. Cl. 39.
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Tectronics Mfg. Corp., Bremen, Ind. 845,426, pub. 12–19–67. Cl. 26.
Telan Corp., Denver, Colo. 845,540, pub. 12–19–67. Cl. 44.
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Tel-Go Mfg. Corp., Houston, Tex. 726,473, canc. Cl. 23.
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Terri-Cord Mills, Inc., to Advance Glove Mfg. Co., Detroit, Mich. 720,390, Am. 7(d). Cl. 39.
Tessaro, Santo, d.b.a. Calzaturificio di Santo Tesarro, and Calzaturificio di Sante Tessaro, Treviso, Italy. 845,338, pub. 12–19–67. Cl. 22.
Textron Inc., Rochester, N.Y. 845,419, pub. 12–19–67. Cl. 26.
Thames Industries Ltd., London, England. 845,658–9, Cl. 52.
Thexton Mfg. Co., Hopkins, Minn. 845,429, pub. 12–19–67. Cl. 26.
Tipp-Ex Vertrieb G.m.b.H., & Co. K.G., Frankfurt am Main, Germany. 845,261, pub. 12–19–67. Multiple Class (Classes 6 and 37).
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U.S. Plywood-Champion Papers Inc., New York, N.Y. 841,897, cor. Cl. 12.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 845,284–5, pub. 12–19–67. Cl. 12.
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Yardley of London, Inc., Totowa, N.J. 845,589, pub. 12–19–67. Cl. 51.
Yates, Donald N., Gibsonia, Pa. 845,581, pub. 12–19–67. Cl. 50.
Yazaki Corp., Tokyo, Japan. 845,303, pub. 12–19–67. Multiple Class (Classes 19, 21, 26, and 27).
Z & T Importing Co., Inc., City of Commerce, Calif. 845,333, pub. 12–19–67. Cl. 21.
Zevo, Inc., Los Angeles, Calif. 845,561, pub. 12–19–67. Cl. 46.
Zip Hosiery Co., Cincinnati, Ohio. 845,515, pub. 12–19–67. Cl. 39.
Ziv Steel & Wire Co., Chicago, Ill. 845,295, pub. 12–19–67. Cl. 14.
Zupp, Arlene, Mentor, Ohio. 845,626, pub. 12–19–67. Cl. 107.

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of January 1968

Examiner affirmed	203
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Examiner reversed	58
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Patents Available for Licensing or Sale

3,073,919. LAPSED TIMER. Mendel M. Brown, Star Mill Acres, Route 52, Hopewell Junction, N.Y., 12533.

3,195,125. TELEVISION AID TO AIRCRAFT INSTRUMENT LANDING. Henry Reitler, P.O. Box 785, Nashville, Tenn., 37209.

3,347,220. DETACHABLE AIR BLOWER FOR HOUSEHOLD BARBECUE. Salvatore Barbera, 28611 Venus St., Hayward, Calif., 94544.

3,350,866. AUTOMATIC LAWN TONGS. Thomas A. Spencer, 337 Manhattan Ave., Daytona Beach, Fla., 32018.

3,364,507. CRADLE. Nicholas Andersen, 2631 N. Roosevelt St., Arlington, Va., 22207.

3,364,775. VARIABLE RATIO TRANSMISSION. William G. Sack, 9410 S. Avers Ave., Evergreen Park, Ill., 60642.

The following 3 patents are offered by: James M. Hood, 331 W. 34th St., Houston, Tex., 77018.

2,757,062. RECORDING AND INDICATING APPARATUS.

2,757,364. METER AND APPARATUS FOR READING THE SAME.

3,106,895. MIXERS.

Eastman Kodak Company announces that, in accordance with its policy, nonexclusive licenses upon reasonable terms are available to responsible domestic applicants (under the circumstances prevailing at the time) under the following patent.

This offer is consistent with the present practice of Eastman Kodak Company to grant such nonexclusive licenses for any of its unexpired United States Patents on photographic inventions issued prior to 1963 and on inventions made in the course of research or development work for the U.S. Government.

Applications for license may be addressed to the Director, Patent Department, Eastman Kodak Company, 343 State St., Rochester, N.Y., 14650.

3,016,306. YELLOW FILTER LAYERS FOR MULTILAYER PHOTOGRAPHIC COLOR ELEMENTS.

General Electric Company is prepared to grant nonexclusive licenses under the following 94 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: Patent Counsel, Metallurgical Products Department, General Electric Company, Box 237 GPO, Detroit, Mich., 48232.

3,358,089. MAGNET ASSEMBLY.

Applications for license under the following patent may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,362,908. ELECTRICAL APPARATUS AND DIELECTEIC MATERIAL THEREFOR.

Applications for license under the following patent may be addressed to: Patent Counsel, Wire and Cable Department, Construction Materials Division, General Electric Company, 1285 Boston Ave., Bridgeport, Conn., 06602.

3,362,924. CURABLE COMPOSITIONS COMPRISING POLYETHYLENE, PEROXIDE AND PARTICULATE CALCIUM CARBONATE WITH CALCIUM STEARATE.

Applications for license under the following 6 patents may be addressed to: Patent Counsel, General Electric Company, Wiring Device Department, 95 Hathaway St., Providence, R.I., 02904.

D.175,007. ELECTRIC WALL LAMP.

D.176,835. COLOR SLIDE VIEWER.

D.186,074. FEED-THROUGH SWITCH.

D.204,303. PORTABLE AUTOMOBILE SPOTLIGHT.

D.208,917. INTEGRALLY HINGED WEATHERPROOF RECEPTACLE COVER.

3,360,766. STRAIN RELIEF CABLE CLAMP.

Applications for license under the following 85 patents may be addressed to: Patent Counsel, Electronic Components Division, General Electric Company, 316 E. 9th St., Owensboro, Ky., 42301.

2,961,569. ELECTRIC DISCHARGE DEVICE ELECTRODE CONNECTION.

2,997,583. SYSTEM FOR HETERODYNE MIXING.

3,013,328. METHOD OF FORMING A CONDUCTIVE FILM.

3,022,440. ELECTRIC DISCHARGE DEVICE AND METHODS OF MANUFACTURE.

3,041,126. ELECTRIC DISCHARGE DEVICE AND METHOD OF MAKING.

3,041,209. METHOD OF MAKING A THERMIONIC CATHODE.

3,045,289. METHODS FOR PREPARING THIN SHEETS FROM POWDER MATERIAL.

3,048,313. AUTOMATIC WIRE-BREAKING DEVICE.

3,048,726. ELECTRON DISCHARGE RECTIFIER.

3,049,214. ELECTRON TUBE ASSEMBLY APPARATUS.

3,067,911. ARTICLE HANDLING APPARATUS.

3,076,117. PARAMETRIC ENERGY CONVERTER.

3,080,498. ELECTRODE AND METHOD OF PREPARING THE SAME FOR ELECTRON DISCHARGE DEVICES.

3,082,339. ELECTRIC DISCHARGE DEVICE.

3,091,028. METHOD AND ALLOY FOR BONDING TO NON-METALLIC REFRACTORY MEMBERS.

3,092,749. ELECTRON DISCHARGE DEVICE.

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Plant Patents	5
Reissues	33
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Patents	1042	No. 3,372,401 to No.	3,373,442, incl.
Designs	67	No. 210,443 to No.	210,509, incl.
Plant Patents	2	No. 2,800 to No.	2,801, incl.
Reissues	5	No. 26,361 to No.	26,365, incl.
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3,095,324. METHOD FOR MAKING ELECTRICALLY CONDUCTING FILMS AND ARTICLE.

3,100,339. METHOD OF MAKING COMPOSITE BODIES.

3,113,846. TITANIUM CERAMIC COMPOSITE BODIES.

3,116,427. ELECTRON TUNNEL-EMISSION DEVICE UTILIZING AN INSULATOR BETWEEN TWO CONDUCTORS EITHER OR BOTH OF WHICH MAY BE SUPERCONDUCTIVE.

3,132,277. ELECTRON DISCHARGE DEVICE.

3,138,228. COMPOSITE BODIES AND METHOD OF MAKING.

3,141,225. METHOD OF SEALING A METAL TUBULATION.

3,151,265. ANODE ELECTRODE FOR ELECTRON DISCHARGE DEVICES AND METHOD OF MAKING THE SAME.

3,154,711. ELECTRON BEAM FOCUSING BY MEANS OF CONTACT DIFFERENCES OF POTENTIAL.

3,164,741. ELECTRON DISCHARGE DEVICE HAVING AN ANODE WITH IMPROVED THERMAL EXPANSION CHARACTERISTICS.

3,168,953. ELECTRON TUBE PACKAGE.

3,171,519. SEAL CONSTRUCTION.

3,173,014. ELECTROLUMINESCCENT QUENCHING OF A PHOTOCONDUCTOR THROUGH A SUBSTRATE.

3,173,779. SEALING AND COATING GLAZE.

3,192,610. METHOD OF MAKING AN ELECTRON TUBE TERMINAL.

3,193,716. CAGE CONSTRUCTION FOR ELECTRON DISCHARGE DEVICES.

3,194,475. CARTON.

3,196,306. EXHAUST TUBULATION SEAL HAVING A REDUCED WIDTH.

3,196,307. ELECTRON DISCHARGE DEVICE WITH GRID WIRE TENSIONING MEANS AND METHOD.

3,200,283. RUGGEDIZED CATHODE MOUNT.

3,202,860. ELECTRON DISCHARGE DEVICE.

3,202,867. HIGH FREQUENCY ENERGY APPARATUS WITH INTERLEAVED LADDER LINE SLOTS.

3,205,392. BRILLOUIN BEAM FORMING APPARATUS.

3,205,399. SLOW WAVE TRANSMISSION LINE.

3,205,462. LOW-LOSS WAVEGUIDE FOR PROPAGATION OF H WAVE.

3,206,329. INSULATION COATING FOR INDIRECTLY HEATED CATHODE HEATERS.

3,206,635. ELECTRON STREAM FOCUSING.

3,207,940. ELECTRON DISCHARGE DEVICE WITH PLANAR ELECTRODES.

3,210,592. FRAME GRIDS.

3,213,318. BIMETALLIC FILAMENT POSITIONING DEVICE.

3,214,629. SOLID-STATE ELECTRON SOURCE.

3,214,632. LOW NOISE ELECTRON GUN.

3,215,884. CATHODE SUPPORT.

3,217,203. BEAM PLATE STRUCTURE HAVING SUPPRESSOR GRID CHARACTERISTICS.

3,227,914. LADDER TYPE SLOW WAVE STRUCTURE HAVING SIDE PLATES AT AN ANGLE OTHER THAN 90°.

3,231,770. ELASTIC WAVE RESPONSIVE APPARATUS.

3,237,134. MICROWAVE FILTER.

3,238,405. MOUNT ASSEMBLY FOR ELECTRON DISCHARGE DEVICE.

3,239,322. PROCESS FOR SEALING VACUUM-TIGHT SPINEL BODIES.

3,252,039. ELECTRIC DISCHARGE DEVICE.

3,258,639. LADDER TYPE DELAY HAVING RUNGS OF DIFFERENT WIDTHS.

3,259,759. LAMINATED ELECTRONIC DEVICES IN WHICH A TUNNELING ELECTRON PERMEABLE FILM SEPARATES OPPOSED ELECTRODES.

3,259,786. UNDULATING BEAM ENERGY INTERCHANGE DEVICE.

3,263,299. ASSEMBLY METHOD FOR ELECTRON DISCHARGE DEVICES.

3,263,710. APPARATUS AND METHOD FOR FABRICATING FRAME GRIDS.

3,264,507. ELECTRIC DISCHARGE DEVICE STRUCTURE HAVING SEPARATE HEATER AND DISCHARGE COMPARTMENTS.

3,265,919. ELECTRIC DISCHARGE DEVICE WITH IMPROVED ELECTRODE SUPPORT.

3,265,200. PACKAGING DEVICE.

3,270,391. ELECTRON DISCHARGE DEVICE ASSEMBLY AND METHOD FOR MANUFACTURE THEREOF.

3,271,706. MICROWAVE FILTER.

3,285,687. GETTERING APPARATUS.

3,290,170. OXIDATION-RESISTANT COATING METHOD AND COATED ARTICLE.

3,292,112. TWO SIDED SLOW WAVE TRANSMISSION CIRCUIT HAVING A SELECTIVE MODE COUPLER.

3,293,478. TRAVELING WAVE TUBE WITH LONGITUDINAL RECESS.

3,295,937. TITANIUM CERAMIC COMPOSITION BODIES.

3,297,902. ELECTRON DISCHARGE DEVICE HAVING A LAMINATED AND FINELY RETICULATED GRID STRUCTURE THEREIN.

3,299,309. ANNULAR CATHODE ELECTRODE SUPPORT.

3,309,561. COAXIAL MULTIPACTOR SWITCH UTILIZING MAGNETIC FIELD TO CONTROL IMPEDANCE.

3,320,463. ELECTRON DISCHARGE TUBE HAVING AN IMPROVED ELECTRODE MOUNTING STRUCTURE.

3,323,072. BROAD BAND CIRCUITS.

3,323,073. BROAD BAND CIRCUITS.

3,328,619. AIDING MAGNETS FOR MINIMIZING LENGTH OF REVERSAL ZONE.

3,334,263. HIGH FREQUENCY ELECTRON DISCHARGE DEVICE HAVING A GROOVED CATHODE AND ELECTRODES THEREFOR.

3,334,264. BEAM FOCUSING MAGNET SYSTEM.

3,348,169. CONTROLLABLE MICROWAVE IMPEDANCE UTILIZING MULTIPACTION.

3,349,346. RECTANGULAR TO CIRCULAR WAVEGUIDE TRANSITION.

3,353,056. ELECTRON BEAM FOCUSING SYSTEM INCLUDING A MAGNETICALLY PERMEABLE SHIELD ENCLOSING THE ELECTRON GUN PERMANENT MAGNET.

3,353,123. MICROWAVE FILTER COMPRISING ABSORBING STRUCTURES FOR REMOVING SPURIOUS WAVE ENERGY.

3,358,177. ELECTRON DISCHARGE DEVICE AND METHOD.

Disclaimers and Dedications

2,946,283.—*John J. Udry*, Van Nuys, Calif. METHOD AND APPARATUS FOR PERFORATING WELLBORES AND CASINGS. Patent dated July 26, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,947,250.—*Henry H. Mohaupt*, Swampscott, Mass. SHAPED CHARGE ASSEMBLY AND GUN. Patent dated Aug. 2, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,947,251.—*Louis Frank Jilly*, Inglewood, Calif. SHAPED-CHARGE WELL PERFORATOR. Patent dated Aug. 2, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,947,252.—*Will H. Lindsay, Jr.*, Lawndale, Calif. SHAPED CHARGE UNIT FOR WELL PERFORATORS. Patent dated Aug. 2, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,947,253.—*Manuel Cirilo*, Puente, Calif. PERFORATOR. Patent dated Aug. 2, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,957,414.—*Glen Reid Hodgson*, Houston, Tex. EXPENDABLE SHAPED EXPLOSIVE CHARGE WELL CASING PERFORATING APPARATUS. Patent dated Oct. 25, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,960,930.—*Frederick H. Bell*, Arlington, Tex. WELL PERFORATING APPARATUS. Patent dated Nov. 22, 1960. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Jet Research Center, Inc.*

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,968,243.—*George F. Turechek*, Los Angeles, Calif. TUBING GUN. Patent dated Jan. 17, 1961. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,974,595.—*Henry Hans Mohaupt*, Fort Worth, Tex. PROJECTILE. Patent dated Mar. 14, 1961. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,980,018.—*George F. Turechek*, Los Angeles, Calif. WELL PERFORATOR SHAPED CHARGE. Patent dated Apr. 18, 1961. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,216,624.—*Douglas F. Corsette*, Los Angeles, Calif. DISPENSER WITH STROKE RESTRICTING OVERCAP. Patent dated Nov. 9, 1965. Disclaimer and dedication filed Dec. 21, 1967, by the assignee, *Diamond International Corporation*.

Hereby enters this disclaimer and dedication to the Public to claims 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 of said patent.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JANUARY 1, 1968

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7- 1-64	6-19-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	11-27-64	7-23-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—I. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	3-30-65	5-15-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching, Dyeing and Photography.	10-30-64	7-12-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	6- 1-64	9-25-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—J. F. COUCH, Acting Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	4- 1-65	9-12-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	2- 5-65	7-30-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	6- 2-64	12-18-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	9- 1-64	3-12-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	5-12-65	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	1- 9-67	11- 8-67

Total number of pending applications (excluding Designs)	175,115
Total number of Design applications pending	3,859
Total number of applications awaiting action (excluding Designs)	124,193
Total number of Design applications awaiting action	1,697
Date of oldest new application awaiting action	June 1, 1964
Date of oldest amended application awaiting action	March 12, 1962

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during March 1968, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents ..... Numbers 2,543,744 to 2,546,957, inclusive

Plant Patents ..... Numbers 1,007 to 1,009, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	10- 3-66	11-23-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks.	4- 1-66	3-27-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	10-14-65	5-12-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	8- 1-66	4-26-65
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	6-27-66	11- 4-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	10-23-65	4-19-63

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE HEINRICH RUSCHIG, WALTER AUMULLER, GERHARD KORGER, HANS WAGNER, JOSEF SCHOLZ, AND ALFRED BANDER

No. 8071. Decided June 22, 1967

[54 CCPA —; 379 F.2d 990; 154 USPQ 118]

1. REJECTION—CHANGE IN EXAMINER'S POSITION.

"We pass these ingenious and technical legal arguments since we prefer to say that we have considered the numerous cases relied on by appellants to support their proposition that the Patent Office cannot make this rejection [whether the claim in issue is supported by the disclosure] because many years ago an examiner ruled to the contrary and find the point lacking in merit and unsupported by authority."

2. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—JURISDICTION—35 U.S.C. 144.

"Appellants insinuate that in our former decision in this case we found all the claims, including claim 13, patentable. Their words are, 'Presently appealed claim 13 was also indicated as allowable by this court.' They also say that this application 'was returned by this court to the Patent Office for issuance * * *.' We did neither of these things. We passed on a rejection on prior art, affirmed by the Board, found it in error, and reversed the Board decision. Nothing more. Under 35 U.S.C. 144 the only effect of our decision was to govern further proceedings in the case."

3. REJECTION—PROSECUTION REOPENED AFTER COURT DECISION—RES JUDICATA INAPPLICABLE.

"Appellants concede that the Patent Office can reopen a case returned by this court after appeal and reject claims on newly found prior art and attempt to distinguish the present situation on the ground that the rejection now applied [insufficient support in the disclosure] is not based on the newly found art but on the specification which has been available since the application was filed. Further, they say the very question was adjudged in their favor long ago. We are unable to see that these differences have legal significance. See *In re Citron*, 51 CCPA 869, 326 F.2d 418, 140 USPQ 220. For related views on res judicata as applied to patent prosecution see our recent opinions in *In re Herr*, 54 CCPA —, — F.2d —, 153 USPQ 548. We hold the Patent Office had the jurisdiction and the authority to reopen prosecution and to reject claim 13 on a new ground, to the merits of which rejection we now pass."

4. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE—COMPOUND—IN RE PETERING DISTINGUISHED.

"The *Petering* case is used for its finding that a particular reference disclosure of a subgeneric class of compounds to the number of only 20, some of which were disclosed by name, was as good as *prior art* disclosure of all 20 as though they had all been named, for the purpose of anticipating an invention, not for the purpose of disclosing it to *support* a claim. As we said in our prior opinion in this case, '*Petering* involved a very special situation * * *.' We do not consider the facts here to be sufficiently similar to make it pertinent. It is not our view that a disclosure such as that to be found in the formula and words of claim 2, above, amounts to a disclosure, sufficient to support a specific claim, of every compound a skilled chemist can see is within the scope of that claim. Specific claims to single compounds require reasonably specific supporting disclosure and while we agree with the appellants, as the Board did, that *naming* is not essential, something more than the disclosure of a class of 1000, or 100, or even 48, compounds is required. Surely, given time, a chemist could name (especially with the aid of a computer) all of the half million compounds within the scope of the broadest claim, which claim is supported by the broad disclosure. This does not constitute support for each compound individually when separately claimed."

5. SAME—SAME—SAME—35 U.S.C. 112.

"Appellants refer to 35 U.S.C. 112 as the presumed basis for this rejection and emphasize language therein about *enabling* one skilled in the art to make the

invention, arguing therefrom that one skilled in the art would be enabled by the specification to make chlorpropamide. We find the argument unpersuasive for two reasons. First, it presumes some motivation for wanting to make the compound in preference to others. While we have no doubt a person so motivated would be enabled by the specification to make it, this is beside the point for the question is not whether he would be so enabled but whether the specification discloses the compound to him, specifically, as something appellants actually invented. We think it does not. Second, we doubt that the rejection is truly based on section 112, at least on the parts relied on by appellants. If based on section 112, it is on the requirement thereof that 'The specification shall contain a written description of the *invention* * * *.' [Emphasis ours.] We have a specification which describes appellants' invention. The issue here is in no wise a question of its compliance with section 112, it is a question of *fact: Is the compound of claim 13 described therein?* Does the specification convey clearly to those skilled in the art, to whom it is addressed, in any way, the information that appellants invented that specific compound? Having considered the specification in the light that has been shed on it by all the arguments pro and con, we conclude that it does not."

AFFIRMED.

Eugene O. Retter, *John Kekich* (*Sidney W. Russell*, of counsel) for appellants.

Joseph Schimmel for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

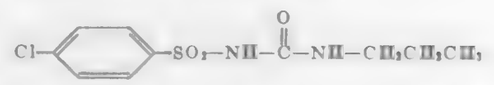
RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claim 13 of application Serial No. 601,107, filed July 31, 1956, for "New Benzene Sulfonyl Ureas and Process for Their Preparation." Apparently The Upjohn Company has been prosecuting the application.

This case is a sequel to our decision in *In re Ruschig*, 52 CCPA 1238, 343 F.2d 965, 145 USPQ 274, decided April 22, 1965. There we reversed a rejection of twelve claims of this same application based on prior art. The claim on appeal is one of those claims. It reads:

13. N-(p-chlorobenzenesulfonyl)-N'-propylurea.

That compound is structurally identified as



It is known by the generic name chlorpropamide and is sold under the trademark Diabinese by Chas. Pfizer & Co., Inc., as an oral medication for the control of diabetes mellitus, as more fully explained in our previous opinion, wherein we also had occasion to discuss the claim 13 compound which is again before us. We refer to that opinion for a more complete exposition of the chemical nomenclature and further background.

The sole issue on this appeal is whether claim 13 is supported by the disclosure of appellants' application, a question which had not been raised in this case at the time of the prior appeal. The following events gave rise to the issue.

About a year after the present application was filed, the Examiner suggested claim 13 to applicants for purposes of interference with a Pfizer application filed by McLamore, Serial No. 660,064 of May 20, 1957, and September 25, 1957, the claim was added. Interference 89,091

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

was declared and in it McLamore moved to dissolve on the ground, inter alia, that the claim was not supported in the application at bar. The Examiner held the claim was supported and denied the motion. On reconsideration, he adhered to his decision. (The suggestion of the claim and these two decision on motions are referred to by appellants as three rulings in their favor by the Patent Office, nearly ten years ago, on the present issue.) Later the Examiner dissolved the interference on his own motion on the ground claim 13 was unpatentable to the interference parties over prior art. Meanwhile both appellants and McLamore had filed divisional applications claiming methods of treating diabetes and compositions therefor, appellants' application being Serial No. 185,865, filed April 9, 1962. It had two sets of claims, 1–4 for tablets and 5–8 for method of treatment. Claims 3 and 7 specified the same compound as that of claim 13. These claims were under rejection by reason of one-year statutory bars which could be overcome only by reliance on the filing date of the present parent application which gave rise to the question whether the application contained support for the claims. In an appeal to the board in application 185,865, by an opinion of March 4, 1965, the Board, having gone into the application and interference history, held that claims 3 and 7 in that application did not have support in the present application because the claim 13 compound is not disclosed therein and issued a new rejection under Rule 196(b) on that ground.[2]

After our decision on the prior appeal, in which we reversed the rejection on prior art, the application was returned to the Examiner. Since he knew of the Board's action in the other application holding that the disclosure does not support the compound of claim 13, he requested and obtained from the First Assistant Commissioner authorization to reopen the case to reject claim 13 on the new ground of lack of support, which he did on June 15, 1965, as follows:

> In view of the decision of the Board of Appeals of March 4, 1965 in Serial No. 185,865, holding that claims 3 and 7 therein were not supported by the disclosure of the instant case and hence not entitled to the benefit of the date thereof, claim 13 herein which is specific to a compound, the use of which is recited in claims 3 and 7, supra, is rejected as having no specific support in this disclosure for reasons fully detailed in said decision (Appeal No. 283—74), Paper No. 25, at pages 4–7. The compound of claim 13 is not named or identified by formula and it can find support only as choices made between the several variables involved. This is not regarded as adequate support for a specific compound never named or otherwise exemplified in the specification as filed. See *In re Fried* 1963 C.D. 248 (page 257, first paragraph [50 CCPA 954, 312 F.2d 930, 136 USPQ 729]).

Appellants then argued this rejection before the Examiner who adhered to it and made it final. Reconsideration was requested and given, the Examiner adhering to his view. Appellants then took the question to the Board where the Examiner filed an extensive answer to their lengthy brief. The Board affirmed for very much the same reasons as those stated in its opinion in deciding the same issue in application Serial No. 185,865. Thus the question before us has been twice decided adversely to appellants by the Board of Appeals, the same panel hearing both appeals.[3]

[2] The Board opinion is reported at 147 USPQ 46. After receiving it, appellants cancelled claims 3 and 7 from application 185,865 and Patent No. 3,198,706 was issued thereon, Aug. 3, 1965, to the assignee Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning.

[3] Federico and Rosa, Examiners-in-Chief, and Stone, Acting Examiner-in-Chief; opinions by Federico.

In coming here, appellants raise a question in addition to the issue of support which requires preliminary consideration. They say that in this second appeal "involving the *same* and already adjudicated claim, the United States Patent Office was without authority, or lacked jurisdiction, to reopen these proceedings (after the court's decision) to resurrect a ground of rejection which had already been considered by the Patent Office, this lack of authority being based upon principles of, or akin to, res judicata, estoppel or laches."

In answer, the Solicitor says there is no such issue before us since it was not raised before the Board, is raised for the first time in this court, and was not properly raised by any reason of appeal. Appellants counter with the argument that Reason of Appeal 9, reading, "The Board of Appeals erred in matters of law," will suffice. They also say that, being a matter of "jurisdiction over subject matter," it can be raised at any time.

[1] We pass these ingenious and technical legal arguments since we prefer to say that we have considered the numerous cases relied on by appellants to support their proposition that the Patent Office cannot make this rejection because many years ago an Examiner ruled to the contrary and find the point lacking in merit and unsupported by authority. We appreciate the extensive memorandum of law supplied in the appendix to appellants' brief, containing cases pro and con, and note the heavy reliance on what was said in two concurring opinions. We surmise appellants would have to agree that what precedents they have found are not, as a whole, very strong support for their theory. The words of Judge Garrett in *In re Ellis*, 24 CCPA 759, 86 F.2d 412, 31 USPQ 380, which appellants found quoted in *In re Becker*, 26 CCPA 922, 101 F.2d 557, 40 USPQ 624, fairly depict the present situation, which is not much different from that prevailing in 1936,

> There is nothing unusual, certainly, about an examiner changing his viewpoint as to the patentability of claims as the prosecution of a case progresses, and, so long as the rules of Patent Office practice are duly complied with, an applicant has no legal ground for complaint because of such change in view.

The life of a patent solicitor has always been a hard one.

[2] Appellants insinuate that in our former decision in this case we found all the claims, including claim 13, patentable. Their words are, "Presently appealed claim 13 was also indicated as allowable by this court." They also say that this application "was returned by this court to the Patent Office for issuance * * *." We did neither of these things. We passed on a rejection on prior art, affirmed by the Board, found it in error, and reversed the Board decision. Nothing more. Under 35 U.S.C. 144 the only effect of our decision was to govern further proceedings in the case.

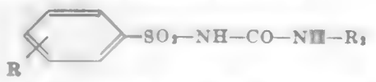
[3] Appellants concede that the Patent Office can reopen a case returned by this court after appeal and reject claims on newly found prior art and attempt to distinguish the present situation on the ground that the rejection now applied is not based on newly found art but on the specification which has been available since the application was filed. Further, they say the very question was adjudged in their favor long ago. We are unable to see that these differences have legal significance. See *In re Citron*, 51 CCPA 869, 326 F.2d 418, 140 USPQ 220. For related views on res judicata as applied to patent prosecution see our recent opinions in *In re Herr*, 54 CCPA —, — F.2d —,

153 USPQ 548. We hold the Patent Office had the jurisdiction and the authority to reopen prosecution and to reject claim 13 on a new ground, to the merits of which rejection we now pass.

We have quoted the Examiner's rejection above. His first point was that the compound of claim 13 "was not named or identified by formula" in the specification. Appellants admit this. His next point was that it "can find support only as choices made between the several variables involved." These words are the words of Judge Smith in *In re Fried*, supra, a case in which we found lack of support in general disclosures. Their purport in the factual context of this case is that the reagents for the preparation of chlorpropamide are listed, with many others, in the disclosure and, as the Board said, "If the proper choices of the three variables in the above formula are made, the compound in question is produced," the formula referred to being that of the family of benzene sulphonyl-ureas in which the variables are R, R_1 and R_2, to be seen in claim 1 reproduced in our former opinion. The Board continued its statement, saying, "but nowhere in the specification is the particular selection indicated."

It does not seem to be contested that the general disclosure of the application encompasses something like half a million possible compounds.[4] It also disclosed a number of specific compounds. Appellants' argument is that one skilled in the art would find certain "guides" in the specification which would lead him to the compound of claim 13 and that the compound is therefore disclosed. Further reliance is placed on our opinion in *In re Petering*, 49 CCPA 993, 301 F.2d 676, 133 USPQ 275, taken in connection with original claim 2, legally deemed a part of the disclosure, which appellants say encompasses only 48 compounds, "excluding isomers," this being in effect one of the "guides." Original claim 2 reads:

2. Benzenesulphonylureas of the general formula



wherein R is a member selected from the group consisting of chlorine and bromine and R_2 is a member selected from the group of alkyl-, alkenyl-, cycloalkyl- and cycloalkylalkyl radicals containing 2 to 7 carbon atoms.

Appellants refer to this formula as narrowing the field of selection, so to speak, and say that "excluding isomers," there are "approximately" 48 compounds within the scope of that claim all of which are "readily determinable by skilled chemists." What this amounts to is saying that skilled chemists can see that R is either Cl or Br and that R_2 is any one of the radicals above recited. The Examiner computes that the number of possible compounds is not approximately 48 but a minimum of 1,010, "excluding stereoisomerides." He shows his calculations and we do not find a refutation of them by appellants to justify their contention the number is 48, nor any explanation of how the number 48 is arrived at. [4] The *Petering* case is used for its finding that a particular reference disclosure of a subgeneric class of compounds to the number of only 20, some of which were disclosed by name, was as good as *prior art* disclosure of all 20 as though they had all been

[4] In the companion case of *In re McLamore* (Patent Appeal 7829), concurrently decided, a Ph. D. chemist who heads the Pfizer Patent Department has made an affidavit of record in which he shows how he has calculated, on a conservative basis, including sodium and potassium salts, the number of compounds within the broad disclosure of this application to be 1,237,464. We express no view on this mathematical question. The number is very large in any event.

named, for the purpose of anticipating an invention, not for the purpose of disclosing it to *support* a claim. As we said in our prior opinion in this case, "*Petering* involved a very special situation * * *." We do not consider the facts here to be sufficiently similar to make it pertinent. It is not our view that a disclosure such as that to be found in the formula and words of claim 2, above, amounts to a disclosure, sufficient to support a specific claim, of every compound a skilled chemist can see is within the scope of that claim. Specific claims to single compounds require reasonably specific supporting disclosure and while we agree with the appellants, as the Board did, that *naming* is not essential, something more than the disclosure of a class of 1000 or 100, or even 48, compounds is required. Surely, given time, a chemist could name (especially with the aid of a computer) all of the half million compounds within the scope of the broadest claim, which claim is supported by the broad disclosure. This does not constitute support for each compound individually when separately claimed.

Other "guides" allegedly *leading to* chlorpropamide argued by appellants will now be discussed. It is said eleven processes for making the many componds of the invention are disclosed, five of which employ an "alkylamine." This is R_2 in the general formula. But in that formula there is also the variable R which may be hydrogen, chlorine, bromine, methyl, or methoxy and R_1 which may be either chlorine or bromine and, furthermore, R and R_1 may be located anywhere on the benzene ring, that is, ortho, meta, or para to the SO_2 group and adjacent or non-adjacent one another. This makes for more than a few unidentified possibilities not determined by the use alkylamine alone. To lead to claim 13, R must be hydrogen and R_1 must be chlorine and the alkylamine, R_2, must be propylamine.

Next, it is argued in connection with these processes that in the discussion of Process (1) it is taught that the primary amine could be "*a primary butylamine or another primary alkylamine* or an alkenylamine, cyclo-alkylamine or cycloalkylalkyl-amine containing 2 to 7 or 8 carbon atoms" and that one skilled in the art could *see* that "if n-butylamine is a reactant, then ethylamine, n-propylamine, etc., are also possible reactants." We do not see that this guides one *to* the use of n-propylamine. The important words in the quotation from our point of view are "etc." and "possible." It is an old custom in the woods to mark trails by making blaze marks on the trees. It is no help in finding a trail or in finding one's way through the woods where the trails have disappeared—or have not yet been made, which is more like the case here—to be confronted simply by a large number of unmarked trees. Appellants are pointing to trees. We are looking for blaze marks which single out particular trees. We see none.

Appellants say next that the "guide" becomes more crystallized by the recitation of the alkylamines which can be employed in the four or five reactions described as using them. This list contains at least 19 primary amines which the specification says may be used. Appellants emphasize two, n-butylamine, which is elsewhere specifically disclosed as having been used, and n-propylamine. We do not see that listing the latter with the 18 others adds anything to the initial statement that one may use an alkyl amine containing from 2 to 6 carbon atoms. Propylamine is such an amine but one is not led to it in preference to the others merely by listing them all and identifying it, with the others, by name.

Finally appellants refer to two tables listing, respectively, ten and twelve specific compounds, the first being the list of specific compounds whose blood sugar lowering activity is shown in the specification, the other, which duplicates the first and adds two compounds, being the specific examples of the specification. There is no N′-n-propyl compound among them. Perhaps one of appellants' best points is that the activity table "stresses" compounds in which R_2 is a primary alkyl radical, i.e., ethyl, butyl, isobutyl and hexyl. The stress resides in the fact that eight of the ten are such compounds. And one of them, N-(4-chlorobenzenesulphonyl)-N′-n-butyl urea, is a homolog of the compound of claim 13. It must be admitted that this is getting close. *If* n-propylamine had been used in making the compound instead of n-butylamine, the compound of claim 13 would have resulted. Appellants submit to us, as they did to the Board, an imaginary specific example patterned on specific Example 6 by which the above butyl compound is made so that we can see what a simple change would have resulted in a specific supporting disclosure being present in the specification. The trouble is that there is no such disclosure, easy though it is to imagine it. It is equally easy to imagine that the compound of claim 13 might have been named in the specification. Working backward from a knowledge of chlorpropamide, that is by hindsight, it is all very clear what route one would travel through the forest of the specification to arrive at it. But looking at the problem, as we must, from the standpoint of one with no foreknowledge of the specific compound, it is our considered opinion that the Board was correct in saying:

> Not having been specifically named or mentioned in any manner, one is left to selection from the myriads of possibilities encompassed by the broad disclosure, with no guide indicating or directing that this particular selection should be made rather than any of the many others which could also be made.

[5] Appellants refer to 35 U.S.C. 112 as the presumed basis for this rejection and emphasize language therein about *enabling* one skilled in the art to *make* the invention, arguing therefrom that one skilled in the artwould be enabled by the specification to make chlorpropamide. We find the argument unpersuasive for two reasons. First, it presumes some motivation for wanting to make the compound in preference to others. While we have no doubt a person so motivated would be enabled by the specification to make it, this is beside the point for the question is not whether he would be so enabled but whether the specification discloses the compound to him, specifically, as something appellants actually invented. We think it does not. Second, we doubt that the rejection is truly based on section 112, at least on the parts relied on by appellants. If based on section 112, it is on the requirement thereof that "The specification shall contain a written description *of the invention* * * *." [Emphasis ours.] We have a specification which describes appellants' invention. The issue here is in no wise a question of its compliance with section 112, it is a question of *fact: Is the compound of claim 13 described therein?* Does the specification convey clearly to those skilled in the art, to whom it is addressed, in any way, the information that appellants invented that specific compound? Having considered the specification in the light that has been shed on it by all the arguments pro and con, we conclude that it does not.

The decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,690,277, Shea and Streb, MATERIAL HANDLING EQUIPMENT, **filed** Nov. 8, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1943, *The Union Metal Manufacturing Company* v. *Streator Dependable Manufacturing Company.*

2,813,341. (See 3,085,340.)

2,848,334, E. Jones, STABILIZED EGG AND MILK PRODUCT AND METHOD OF PREPARING SAME; **3,093,487,** Jones, Tracy and Deffenbaugh, EGG PRODUCTS AND PROCESSES FOR PREPARING SAME; **3,113,872,** Jones and Johnson, METHOD OF TREATING SHELLED EGGS, **filed** Nov. 8, 1967, D.C. Minn. (Minneapolis), Doc. 4/67/341, *Roberts Dairy Corporation et al.* v. *Marshall Produce Company.*

2,848,703, Foote and Fisher, TERMINAL BLOCK WITH SHIFTABLE MARKER STRIP, **filed** Nov. 3, 1967, D.C., W.D. Pa. (Pittsburgh), Doc. 91–67, *Erie Marathon Electric Manufacturing Corporation* v. *Emanuel J. Kressel and Kressel Mfg. Company.*

2,870,037, S. Converse, PROCESS FOR TREATING GRASS, **filed** Nov. 10, 1967, D.C., N.D. Tex. (Dallas), Doc. CA–3–1874, *Graniteville Company* v. *National Chemsearch Corporation.* First cause, dismissed without prejudice; Second cause, dismissed with prejudice, Nov. 10, 1967.

2,972,188. (See 3,085,340.)

2,991,398, C. W. Strong, METER BOX; **3,123,744,** J. T. Fisher, METER BOX WITH A MOISTURE BARRIER ASSEMBLY; **filed** July 19, 1967, D.C., N.D. Ga. (Atlanta), Doc. 11076, *Helen Wills Strong and B & C Metal Stamping Company* v. *Duncan Electric Company.* Dismissed on stipulation without prejudice, Oct. 31, 1967.

2,998,611, W. E. Schuessler, CUFFED CAP AND FACE HOOD AND METHOD OF FORMING, **filed** Nov. 2, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1907, *Schuessler Knitting Foundation* v. *American Needle and Novelty Co.*

3,085,340, A. Rashbaum, GRADING MACHINE; **2,813,341,** A. Di Mino, MULTIPLE PATTERN GRADER; **2,972,188,** W. Kaufman, MAKING GRADED PATTERNS FOR GARMENTS; **filed** Nov. 1, 1967, D.C., S.D.N.Y., Doc. 67–C–4262, *William Kaufman, doing business as Precision Pattern* v. *Chevette Lingerie, Inc. et al.*

3,085,650, J. A. Larcen, ROCK DRILLING MECHANISMS, **filed** Mar. 19, 1964, D.C.N.J. (Newark), Doc. C–234–64, *Atlas Copco Aktienbolag* v. *Ingersoll-Rand Company.* Judgment declaring patent invalid and dismissing complaint, Nov. 3, 1967.

3,093,487. (See 2,848,334.)

3,104,121, Nordin and Hall, HIGH PRESSURE SEAL ASSEMBLY, **filed** Nov. 3, 1967, D.C., S.D. Tex. (Houston), Doc. 67–H–842, *Thornhill-Craver Company* v. *Industrial Ceramics, Inc. et al.*

3,113,872. (See 2,848,334.)

3,123,744. (See 2,991,398.)

3,150,165, B. B. Greenble, COLLAPSIBLE BUILDING STRUCTURE WITH CENTER POST ERECTING STRUCTURE, **filed** Sept. 29, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1612, *Rob-Ric Co.* v. *Ideal Industries, Inc.* Dismissed on stipulation, Nov. 8, 1967, with prejudice.

3,198,508, Melton and Wilkinson, SPACER FOR INSERTION BETWEEN ADJACENT CONVOLUTIONS OF A COIL SPRING, **filed** Nov. 13, 1967, D.C. Kans. (Wichita), Doc. W–3916, *Jamco, Inc.* v. *Wheel Aligning Supply, Inc. and Paul L. Enegren.*

3,242,509, G. P. Nissen, GYMNASTIC FLOOR COVERING, **filed** Oct. 30, 1967, D.C.N.J., Doc. C–1117–67, *Nissen Corporation* v. *Premier Athletic Products Corp.*

3,250,088, P. N. Hanebuth, TIP ASSEMBLY FOR A FLEXIBLE SHAFT ASSEMBLY, **filed** Nov. 1, 1967, D.C., E.D. Pa. (Philadelphia), Doc. 43957, *Stewart-Warner Corporation* v. *Teleflex Inc.*

3,329,842, H. W. Brown, SPEED CONTROLLERS FOR PORTABLE DEVICES, **filed** Aug. 31, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1513, *Cutler-Hammer, Inc.* v. *Skil Corp.* Dismissed pursuant to Rule 41(a)(I) of the FRCP, Nov. 3, 1967.

REISSUES

MARCH 12, 1968

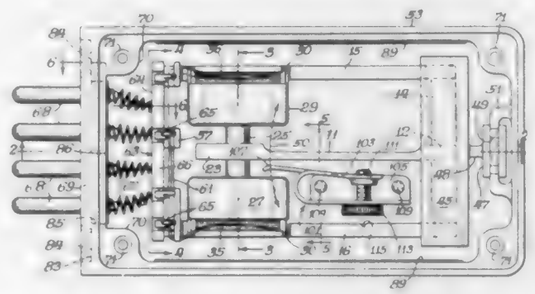
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,361
ELECTROMECHANICAL FREQUENCY RESPONSIVE TRANSLATING DEVICE

Charles W. Mooney, Mount Prospect, and Alfred S. Holzinger, Chicago, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Original No. 3,221,120, dated Nov. 30, 1965, Ser. No. 341,508, Jan. 31, 1964. Application for reissue Nov. 29, 1966, Ser. No. 606,494

18 Claims. (Cl. 335—90)



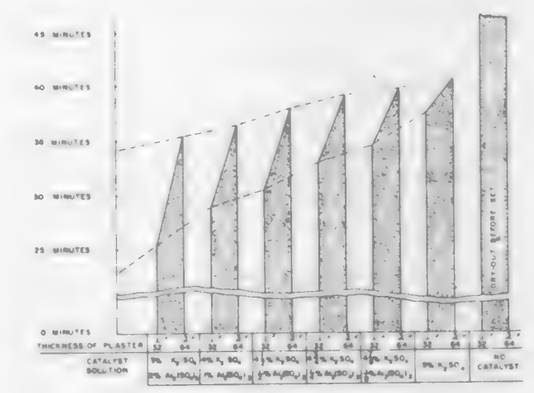
Electromechanical frequency responsive device including rectangular chassis with vibratory reed therein having one end supported on chassis and elongated permanent magnet extending transversely at the opposite end. A drive coil surrounds one end of the magnet and a pick-up coil surrounds the other end. Conductive shields are provided about the coils and conductive sleeves may be provided therein. The chassis is mounted in a frame with one end supported by conducting coil springs which provide electrical connections and the other end supported by a resilient boot which provides damping.

26,362
CATALYZED GYPSUM WALLBOARD AND METHOD OF PRODUCTION THEREOF

Mark E. Gerton, Pleasanton, Calif., assignor to Fibreboard Corporation, a corporation of Delaware

Original No. 3,284,227, dated Nov. 8, 1966, Ser. No. 242,806, Dec. 6, 1962. Application for reissue June 22, 1967, Ser. No. 653,589

5 Claims. (Cl. 117—60)



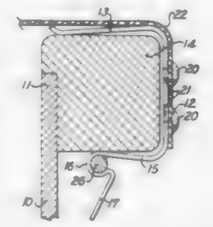
1. A method of wall construction comprising impregnating the surface of a wallboard backing with an aqueous solution of a gypsum setting catalytic agent selected from the group consisting of potassium sulphate and mixtures of potassium sulphate and aluminum sulphate, and plastering a single thin coat of gypsum plaster comprising about 15 to 30 percent inert filler, about 2 to 10 percent plasticizer clay, about 0.5 to 2% of a mixture of polyvinyl acetate and polyvinyl alcohol, and the remainder consisting essentially of gypsum, upon the catalyzed surface of said backing, and final-finishing the thin plaster coat to form a continuous plaster exterior surface.

26,363
FABRIC COVER FOR BOATS

William J. Mills II, 125 Main St., Greenport, N.Y. 11944

Original No. 3,192,542, dated July 6, 1965, Ser. No. 228,982, Oct. 8, 1962. Application for reissue Jan. 13, 1967, Ser. No. 612,754

14 Claims. (Cl. 9—1)



A cover construction with securing means therefor is provided to effectively cover the opening in a lifeboat, tender or other small boat, when the boat is not in actual use, wherein a series of resilient fastener-clips, attached to the cover, serve to hold the cover in place on the boat. It is a feature of this construction that the cover can be quickly applied or removed, as required, and that the fastener-clips on the cover require no engaging hardware or fixtures on the boat, and that the fastener-clips will not mar or damage the finish of the boat surface.

26,364
METALLURGICAL MELTING AND REFINING PROCESS

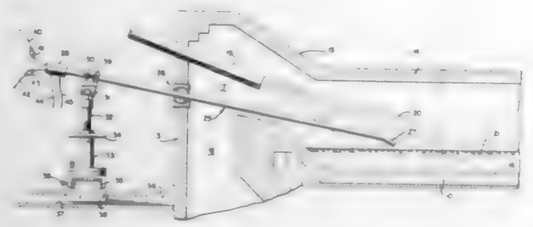
Edward F. Kurzinski, Doylestown, Pa., assignor, by mesne assignments, to Air Products and Chemicals, Inc., Trexlertown, Pa., a corporation of Delaware

Original No. 3,194,650, dated July 13, 1965, Ser. No. 101,022, Apr. 5, 1961, which is a continuation-in-part of Ser. No. 7,457, Feb. 8, 1960. Application for reissue June 21, 1966, Ser. No. 562,976

27 Claims. (Cl. 75—43)

1. The method of operating a metallurgical furnace of the open hearth type having a bottom, a roof and side walls defining a zone and having end wall burners, comprising the steps of operating the end wall burners and introducing fluid including fuel and oxygen along at least one confined path downwardly to within the zone, burning the fuel and oxygen in admixture to form a short flame beyond the end of the confined path, charging solid material including metal into the zone, operating the end wall burners and separately burning the admixture to form a short flame while charging the solid material while moving the end of the confined path to direct the short flame onto solid material beneath the confined path, adding hot molten metal to the zone upon the completion of the charging of solid material, and thereafter continuing the introduction of at least oxygen through the confined

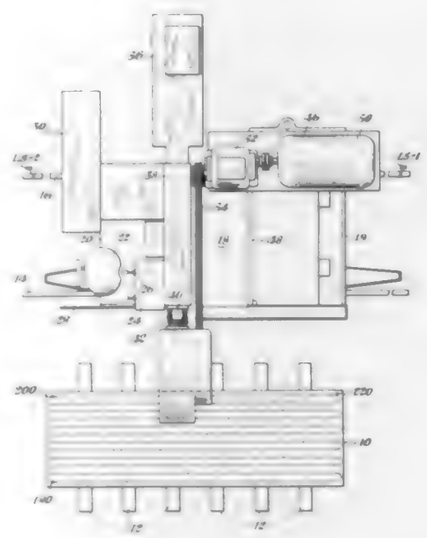
path and directing the resulting stream onto the molten metal to refine the metal of the charge.



20. A method of operating a metallurgical furnace comprising the steps of charging the furnace, introducing fluid including fuel and oxygen within the furnace along at least one confined path, the discharge end of said path being between two and four feet above the charge in the furnace, burning the fuel and oxygen in admixture to form a short, relatively high temperature flame beyond the confined path which impinges on the charged material and thereafter lowering the confined path and increasing the oxygen to fuel ratio of the mixture.

26,365
CONTROL SYSTEM FOR SURFACE APPARATUS
Clifford G. Beattie, Natrona Heights, and Victor D. Gumbert, Springdale, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Original No. 3,149,439, dated Sept. 22, 1964, Ser. No. 295,425, July 16, 1963, which is a continuation-in-part of Ser. No. 191,997, May 2, 1962. Application for reissue May 9, 1966, Ser. No. 552,673
11 Claims. (Cl. 51—34)

Workpiece surface apparatus for grinding the entire surface of the slab wherein the grinding means is adapted for movement in two directions, the movement thereof being controlled by a first and a second motor means, the first motor means controlling the grinding means along one dimension of the workpiece and the second motor means controlling the grinding means in a direction transverse to the first direction in increments until the



entire surface is ground. Switch means are provided to be actuated at the desired limits of movement of the grinding means for controlling the distance of travel of the grinding means and additionally providing the incremental advances of the grinding means. Additional switch means are also provided for disabling the grinding apparatus where the entire surface has been ground.

PLANT PATENTS

GRANTED MARCH 12, 1968

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,800
APPLE TREE
Lewis Arends, Sparta, Mich., assignor to Hill Top Orchards and Nurseries, Inc., Hartford, Mich., a corporation of Michigan
Filed Nov. 14, 1966, Ser. No. 594,283
1 Claim. (Cl. Plt.—34)

1. A new and distinct variety of apple tree, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a fruit ripening habit of from 2 to 3 weeks earlier than "McIntosh" (unpatented), the ability of the fruit to hang exceptionally well on the tree while having a long color rotention period with a consequent long period of suitable picking maturity, an exceptionally attractive bright red skin color of the fruit on the exposed side, combined with an attractive greenish-yellow ground color, with some streaking at the stem end or more streaking on the lesser colored fruit, an early and quite white color of the fruit flesh in the picking season, changing to a yellowish-creamy white color as the fruit fully ripens on the tree, long storage and shelf life of the fruit and excellent resistance of the foliage and fruit to apple scab fungus even without chemical treatment.

2,801
CRAB APPLE TREE
William Flemer III, Princeton, N.J., assignor to Treesearch, Kingston, N.J., a partnership
Filed Dec. 22, 1966, Ser. No. 604,076
1 Claim. (Cl. Plt.—34)

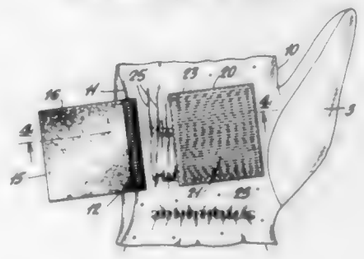
1. A new and distinct variety of flowering crab apple tree, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of good winter hardiness, with no winter dieback at terminals of twigs of young plants even when extended growing seasons produce late growth of such twigs, there being die back of such growth in other varieties and a distinctive, attractive and unusually sharp, clear Crimson Red color of the flowers, with a Scarlet overlay free from unattractive Magenta or muddy tints characteristic of other so-called red flowered crab apple varieties.

PATENTS

GRANTED MARCH 12, 1968

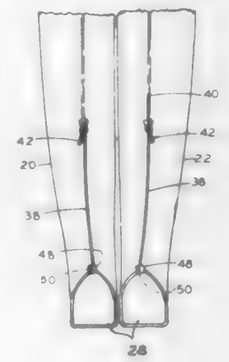
GENERAL AND MECHANICAL

3,372,401
ADJUSTABLE GOLF GLOVE
Ellis M. Woodward, 501 Surrey Road, Timonium, Md. 21093
Filed Feb. 20, 1967, Ser. No. 617,202
5 Claims. (Cl. 2—159)



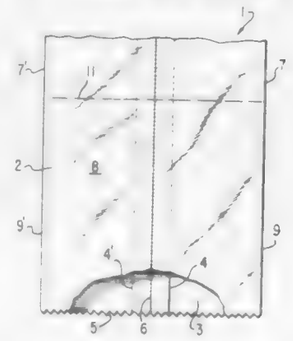
The invention contemplates a golf glove provided with an adjustable flexible and separable tightening band which extends diagonally across the back portion of the glove, and the outer ends of which are connected between the back portion adjacent to the thumb portion and the palm portion closely adjacent to the seam remote from the thumb portion. A tightening of the band throws any excess material arising from the stretching of the glove into the back portion, so that no wrinkling can take place in the palm portion, thereby leaving the latter free and smooth for an effective grasping of the golf club shaft. The readily separable tightening band includes an elastic insert to permit freedom of muscular movement in the grasping of the shaft. Velcro tape fasteners are used preferably to effect the ready engagement and disengagement of the components of the tightening bands, although other types of fasteners may be used without sacrificing all of the many advantages of the invention.

3,372,402
SKI PANTS
Adam K. Kaufmann, Camillus, N.Y.
(% Little Europe Ski Shop, Oran, N.Y. 13125)
Filed Nov. 23, 1965, Ser. No. 509,397
1 Claim. (Cl. 2—232)



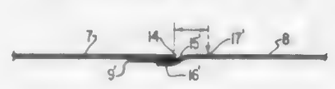
Ski pants, comprised of lengthwise stretch fabric substantially non-resilient circumferentially, the leg portions being adapted to fit the contour of a wearer's leg and ankle and having a closed heel and a frontal opening through which the wearer's foot forward of the arch may project, the leg portion at its lower end, and front center having a slide fastener extending from the opening upwardly along the front center of the leg portion to a level where the circumference of the leg portion is sufficient to permit the passage of a wearer's heel and ankle, the slide fastener being separable at its lower end and closed by movement of a connector slide upwardly from the lower end.

3,372,403
DURABLE PRESS GARMENTS AND METHOD FOR ALTERING HEMS AND CUFFS
Nelson F. Getchell, Great Falls, Va., assignor to Cotton Producers Institute, Memphis, Tenn., a corporation of Tennessee
Filed Apr. 23, 1965, Ser. No. 450,382
10 Claims. (Cl. 2—269)



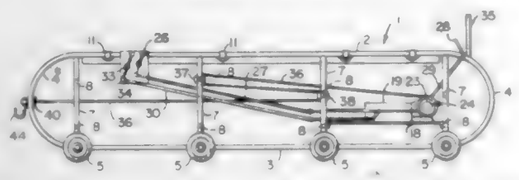
A method of making a garment which may subsequently be altered, such as a pair of trousers, from a cellulose fiber-containing fabric having a latent creaseproofing agent therein. The agent is cured on the finished garment except for a selected portion of the garment, such as the terminal portion of trouser legs. By maintaining the creaseproofing agent in a latent condition on the selected portion, such as by shielding that portion while the rest of the agent on the garment is cured, one or more pleats, folds, creases, or the like can be subsequently formed in the selected portion, such as cuffs on trouser legs, and the creaseproofing agent therein cured to impart a durable crease to all folds.

3,372,404
DURABLE PRESS GARMENTS AND METHOD FOR ALTERING SEAMS
Nelson F. Getchell, Great Falls, Va., and William R. Thomas III, Bethlehem, Pa., assignors to Cotton Producers Institute, Memphis, Tenn., a corporation of Tennessee
Filed Apr. 23, 1965, Ser. No. 450,396
10 Claims. (Cl. 2—275)



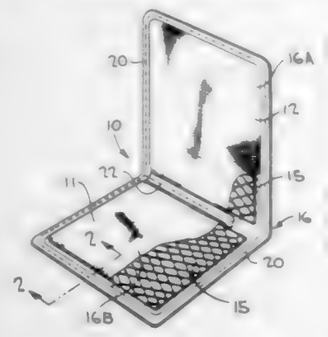
A method of making garments, such as trousers, jackets, and the like from a cellulose fiber-containing fabric, which garments have a stitched seam formed therein. After a creaseproofing agent has been cured on the garment fabric so as to impart thereto creaseproof and wrinkle-resistant properties, the garments may be subsequently altered by being let out at the seam without any durable crease or creases showing in the altered area.

3,372,405
RESCUE CARRIAGE
Emil S. Doering, Rte. 2, Box 2093, Oroville, Calif. 95965
Filed Oct. 21, 1966, Ser. No. 588,489
5 Claims. (Cl. 5—81)



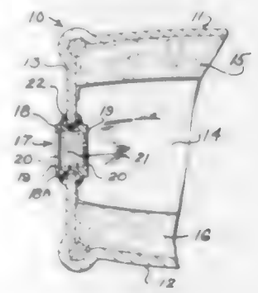
An elongated rescue carriage having a support thereon on which a prone injured person is adapted to be supported and secured, and which carriage includes ground-engaging wheels for movement over the ground or against a side of a cliff, in a direction longitudinally of the carriage. A rope connected at one end with power actuated means on the carriage is adapted to extend to a remote stationary point and power means on the carriage actuates said power actuated means for moving the carriage along the rope to said remote point.

3,372,406
VENTILATED CUSHION STRUCTURE
John E. Heckethorn, Dyersburg, Tenn., assignor to Heckethorn Manufacturing Co., Dyersburg, Tenn., a corporation of Colorado
Continuation-in-part of application Ser. No. 391,961, Aug. 25, 1964. This application Aug. 3, 1965, Ser. No. 476,866
7 Claims. (Cl. 5—347)



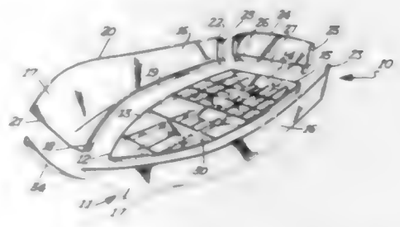
The seat spring pad or insert constituting the subject of the present invention comprises a circumferential frame of preferably rectangular configuration, made of wire of a suitably heavy gauge and of rounded cross section, together with an areal mesh fabric composed of intermeshed coils of wire of lesser gauge. The convolutions of the individual coils present, when viewed longitudinally of the coil, a substantially rectangular aspect, with the upper and lower horizontal reaches disposed approximately in flat almost uninterrupted contact with the inward surfaces of the covering fabric employed. The vertical reaches are in fact almost truly vertical so far as the longitudinal aspect of the coils is concerned and stand only at a quite limited angle to the adjacent vertical reaches of the interlocked adjoining coil. The crossed end portions of the individual wires of adjacent coils are twisted together a number of full turns to provide a tightly twisted double strand, with no flared ends, and the number of turns being adequate to provide sufficient length of the terminal strand to surround the major portion of the adjacent cross section of the large gauge frame wire, preferably with the blunt end of the strand abutting the root portion thereof. Certain novel treatment of the coil ends results in a metallic hook structure to provide a close, strong permanent bonding encirclement of the frame wire. To provide a certain degree of relative vertical movement between the coils in use in order to enhance the comfort of the cushion, the vertical reaches of the coil configurations are of substantial height, being many times greater than the diameter of the individual wires concerned, and not mere looped or radiused intersections as in the case of conventional fence or partition structures.

3,372,407
MATTRESS AND CUSHION VENTILATING AND AIR TREATMENT MEANS
Robert L. Weber III, 49 Clapboard Hill Road, New Canaan, Conn. 06840
Filed Feb. 16, 1966, Ser. No. 527,910
1 Claim. (Cl. 5—347)



A mattress having side panels with apertures arranged therein for the insertion of a cylindrical container which is treated with a deodorizing substance. As the mattress is depressed and released the deodorizing container will emit a treated scent of air to the interior of the mattress to deodorize the same.

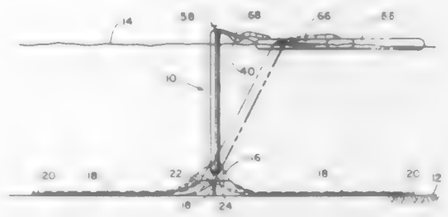
3,372,408
SECTIONAL BOAT STRUCTURE
Ormond L. Luger and Reinold J. Luger, Jr., Edina, Minn., assignors to Luger Industries, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 11, 1966, Ser. No. 533,500
3 Claims. (Cl. 9—6)



A sectional plastic boat kit including a lower section defining the bottom portion of the boat hull. A pair of side sections secured to the lower section and defining the sides of the boat. A transom section extending between and secured to the side sections and secured to the lower sections. A pair of deck sections secured to the side sections, and a channel shaped joint member overlapping and secured to the side sections. A frame structure secured to the interior surfaces of the lower and side sections to maintain a proper contour of the boat.

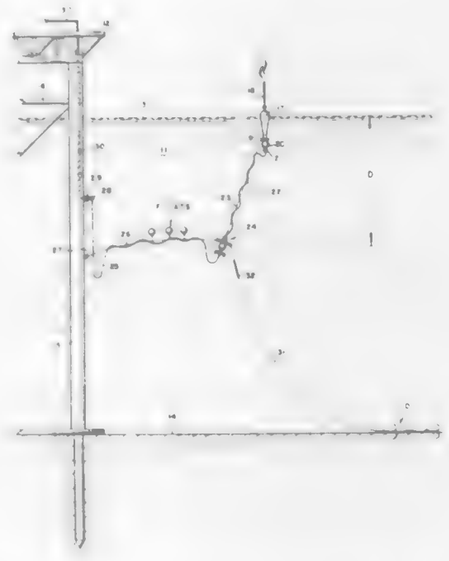
3,372,409
APPARATUS FOR TRANSPORTING FLUIDS FROM A MARINE BOTTOM TO A FLOATING VESSEL
William F. Manning, Springdale, Conn., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 9, 1965, Ser. No. 462,481
4 Claims. (Cl. 9—8)

This specification discloses apparatus for transporting fluids from a flow line on the bottom of a body of water to a floating vessel on the surface and for mooring the vessel at the offshore location. Illustrated are several designs of buoyant, double-walled pipes, each anchored at the lower end thereof with its longitudinal axis substantially vertical. The annular space between the walls of the pipe is sealed



and evacuated to provide buoyancy while a central passageway within the inner wall serves as a fluid path, either to directly conduct fluid therethrough or as a support for flow lines extending therethrough so that the fluids can be transported to the vessel moored to the upper end of the buoyant pipe.

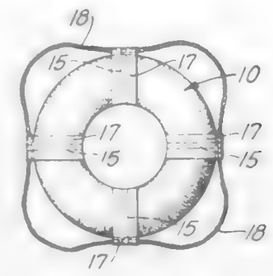
3,372,410
FLARE FOR USE IN A BODY OF WATER
Robert G. Hindman, New Orleans, and William J. Ruez III, Metairie, La., assignors to Esso Production Research Company
Filed July 11, 1966, Ser. No. 564,173
10 Claims. (Cl. 9—8.3)



A floating flare is flexibly interconnected with a platform in a body of water such that the flare is maintained a selected distance from the platform by means of several swivel or ball joints providing universal relative motion.

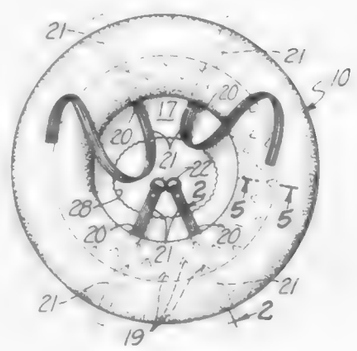
3,372,411
RING BUOY AND METHOD OF MAKING THE SAME
James H. Robertson, 5238 Vineland Ave., North Hollywood, Calif. 91601
Filed Nov. 21, 1966, Ser. No. 595,705
5 Claims. (Cl. 9—311)

A ring buoy and method of making the same in which the buoy comprises a ring formed of lightweight rigid material such as molded styrofoam, around the periphery of which a grabline is held by a plurality of spaced straps. To prevent undesirable displacement of the straps and to provide manufacturing economies and structural benefits, a plurality of holding members have one end thereof securely held in place by being molded into the ring itself



at the time the ring is formed. The other ends of the holding members project outwardly from the outer periphery of the ring and the straps and/or grabline are secured to the projecting ends of the holding members.

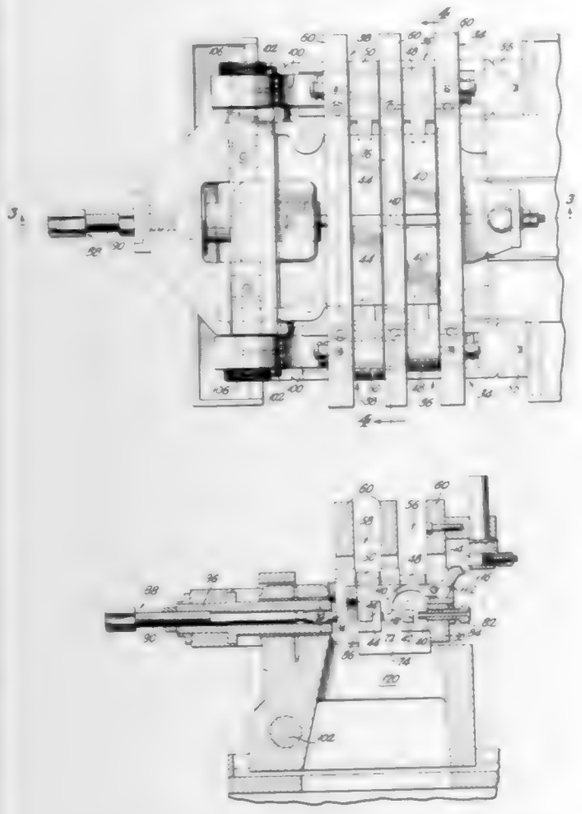
3,372,412
RING-SHAPED SWIMMING AID FOR CHILDREN AND METHOD OF MAKING THE SAME
James H. Robertson, 5238 Vineland Ave., North Hollywood, Calif. 91601
Filed Nov. 21, 1966, Ser. No. 595,708
6 Claims. (Cl. 9—311)



A swimming aid for children and method of making such swimming aids of the type comprising a ring formed of molded lightweight material such as polystyrene foam. Disposed within the center of the ring is a relatively thin resilient diaphragm with an opening which fits around the body of the child adjacent to the armpits. A plurality of straps are connected between the ring and the body of the child, extending over the shoulders of the child and being connected to the ring.

In order to prevent displacement of the straps and provide manufacturing economies and structural benefits, the straps are securely held to the ring by being molded into the ring at the time the ring is formed. The diaphragm in the center of the ring may also have its outer edges molded into and held by the ring. The diaphragm preferably has openings through which the straps pass. The inner edge of the body receiving opening of the diaphragm is preferably serrated, to provide a more flexible and more secure grip upon the body of the child. The portion of the diaphragm which is molded into the ring may have a plurality of cuts forming triangular portions which are displaced transversely when the ring is molded, to increase the engagement between the diaphragm and the ring.

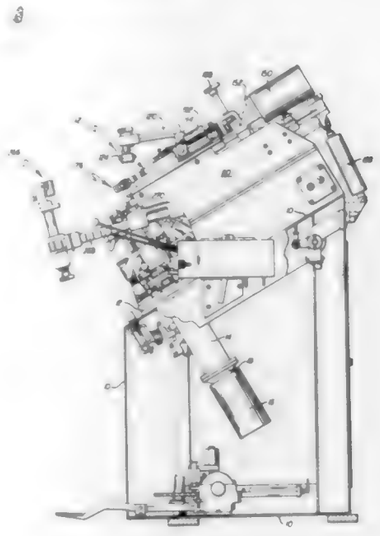
3,372,413
NAIL-MAKING MECHANISM AND TECHNIQUE
Douglas Stewart Faulkner, Warrington, England, assignor to The Dore Development Company, Inc., Elmhurst, N.Y., a corporation of New York
Filed Aug. 6, 1965, Ser. No. 477,920
Claims priority, application Great Britain, Aug. 15, 1964, 33,427/64
8 Claims. (Cl. 10—54)



An apparatus and method for manufacturing nails, rivets and the like, wherein a length of wire nail stock is pointed and cut by a cutting tool and then gripped by a gripping tool while a head is formed on the cut length.

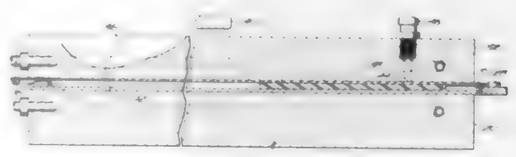
3,372,414
APPARATUS FOR LASTING SHOES
James H. Arsenault, Whitinsville, Mass., assignor to Jacob S. Kamborian, West Newton, Mass.
Filed Sept. 22, 1966, Ser. No. 581,218
8 Claims. (Cl. 12—8.2)

1. A shoe machine comprising:
means for supporting a shoe assembly in a bottom-down position, said shoe assembly including a last having a shoe upper draped thereabout;
a flexible, resilient, upwiping member having a surface thereof of a contour substantially paralleling that of a selected portion of said shoe assembly;
means mounting said upwiping member to said machine for movement between a first position wherein said upwiping member is in an out-of-the-way, remote position and a second, forward position wherein said upwiping member is in a working position that is above and in paralleling, overlapping relationship to said selected position of said shoe assembly;
means for effecting relative heightwise movement between said shoe assembly support means and said upwiping member so as to cause engagement of said selected portion of said shoe assembly with said paralleling surface of said upwiping member when said upwiping member is in said second position,
said means for effecting said relative heightwise movement being of such construction as to continue said relative heightwise movement subsequent to engagement of said shoe assembly with said paralleling surface of said upwiping member, said upwiping member effecting a pressing of said upper to said last while said relative heightwise movement of said shoe assembly and said upwiping member is being effected to thereby stretch said upper about and into conformity with said last;
a force applying instrumentality operatively connected to said upwiping member;



control means for said force applying means so constructed and arranged as to enable said force applying instrumentality to cause said upwiping member to be either in said first position or to be urged into said second, forward, working position under a first relatively low force during said relative heightwise movement of said upwiping member and said shoe assembly supporting means; and
means, operative subsequently to the completion of said relative heightwise movement, to cause said force applying instrumentality to urge said upwiping member forwardly under a second force that is greater than said first force.

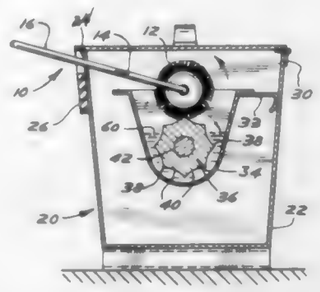
3,372,415
SHOE FORMING METHOD AND APPARATUS
Robert E. King, 104 Elm St., Georgetown, Mass. 01830
Filed Jan. 23, 1964, Ser. No. 339,745
3 Claims. (Cl. 12—142)



1. The method of fabricating a shoe comprising the steps of:
(a) forming a flat upper blank,
(b) perforating said blank in the toe and heel portions thereof,
(c) placing said blank over a die cavity,
(d) injecting a liquid elastomeric material through one of said perforations while said blank is maintained in a generally flat condition and venting said cavity through the other perforation,

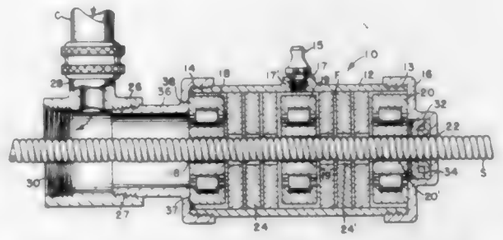
(e) heating said material sufficiently to cure it, and,
(f) folding and sewing the portions of said blank not molded to the sole into a contoured shoe upper having a foot-receiving configuration.

3,372,416
PAINT ROLLER CLEANER AND DRYER
William Katzell, 1612 102nd St., North Battleford, Saskatchewan, Canada
Filed Dec. 30, 1964, Ser. No. 422,172
2 Claims. (Cl. 15—4)



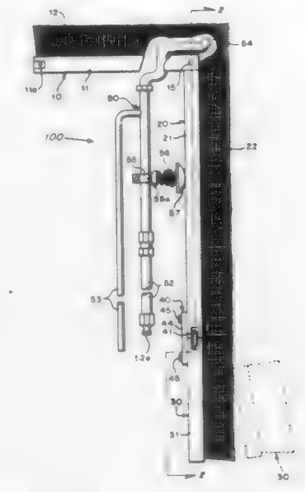
A fluted roller is journaled for rotation within a trough formed with an arcuate bottom so as to contain a limited amount of cleaning fluid. When the roller to be cleaned is placed on the top of the fluted roller, rotation of the fluted roller will cause the paint roller to spin with the consequence that a limited amount of cleaning fluid is carried upwardly by the flutes of the fluted roller and then flung over the top of the trough by the paint roller. Continued spinning of the paint roller by the fluted roller will then cause the paint roller to be rapidly dried.

3,372,417
SNAKE ATTACHMENT
James J. Devine, 209 Clifton Ave., Kingston, N.Y. 12401
Filed Dec. 15, 1965, Ser. No. 514,152
10 Claims. (Cl. 15—104.3)



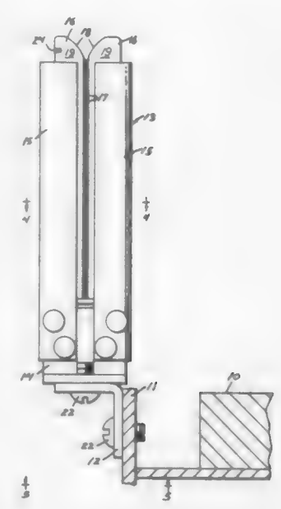
1. A snake attachment adapted to be mounted to waste lines comprising a housing and an end plate mounted at one end thereof and having a central opening disposed therein, a plurality of washers and ball bearing assemblies slidably mounted in spaced relationship within said housing and having central openings formed therein so as to form a longitudinally extending passage communicating with said opening in said end plate, means mounted on said housing for providing a sealing fluid to fill said housing and said longitudinal passage, said openings in said ball bearing assemblies being substantially equal to the diameter of the snake so as to support the external surfaces thereof at random points through said housing and said openings in said washers being at least greater than the diameter of said snake so as to form recesses for the sealing fluid whereby water is prevented from passing through said attachment and a coupling mounted to the other end of said housing having mounting means to connect the coupling to the waste line and for attaching a flexible conduit to a water source.

3,372,418
PIVOTING BRUSH
Rocco F. Di Ilio, 708 Worthington Drive, Warminster, Pa. 18974
Filed July 18, 1967, Ser. No. 654,271
6 Claims. (Cl. 15—165)



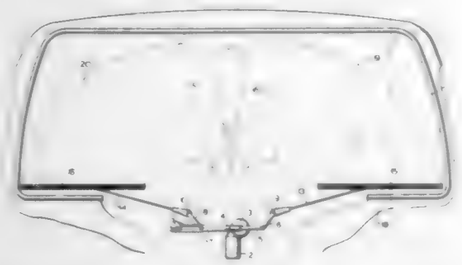
A brush having a pivoted spring-loaded arm and a water supply. The brush is provided with specific mounting and water supply connecting means. The pivoted structure permits the brush to accommodate the inside of containers of different tapers and it is intended to be a part of a can cleaning apparatus.

3,372,419
SPATULA SCRAPER
Jesse Q. Howey, P.O. Box 722, Missoula, Mont. 59801
Filed Sept. 7, 1965, Ser. No. 485,375
6 Claims. (Cl. 15—236)



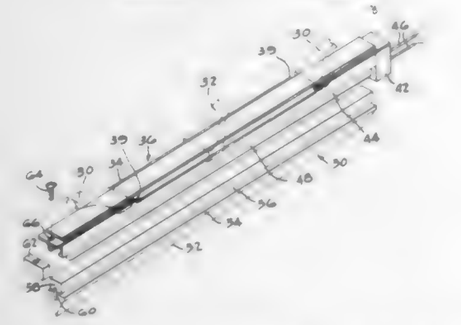
A spatula cleaner to be mounted on a cooking grill. It includes a mounting bracket, a supporting rigid housing with an open elongated slot within which the spatula blade can be inserted, and two elongated rigid scraping blades which abut one another transversely. A compression spring is located between the housing and the blades to maintain them in yieldable abutment.

3,372,420
WINDSHIELD WIPER ASSEMBLY FOR AUTOMOTIVE VEHICLES
Otto Barthruff, Stuttgart, Germany, assignor to Robert Bosch, Stuttgart, Germany
Filed Oct. 21, 1965, Ser. No. 500,003
Claims priority, application Germany, Nov. 20, 1964, B 79,417
12 Claims. (Cl. 15—250.17)



A windshield wiper assembly wherein the blade is rigid with a crank arm which is rockable about a fixed axis. An electric motor reciprocates a pusher which has a slot for a pin of the crank arm. A pawl is mounted on the pusher and can be moved into or from engagement with the pin so that the latter rocks the crank arm when it is engaged by the pawl.

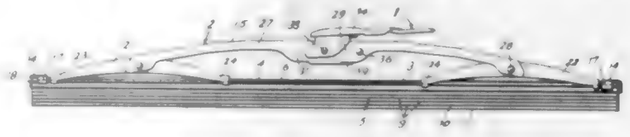
3,372,421
HEATED WINDSHIELD WIPER
Elliott A. Meltzer, 8015 Cobden Road, Laverock, Pa.
Filed Dec. 21, 1965, Ser. No. 515,376
7 Claims. (Cl. 15—250.06)



1. A windshield wiper assembly comprising a backer, means for connecting said backer to a movable support arm, a heater support means operatively connected to said backer, a heating element secured to said heater support means and extending parallel with but in spaced relation to said backer, a resilient wiper blade having a longitudinal bore therein, said blade having a longitudinally slidable connection with said backer, and said heating element being slidably encompassed by said bore when said blade is slidably connected and disconnected from said backer.

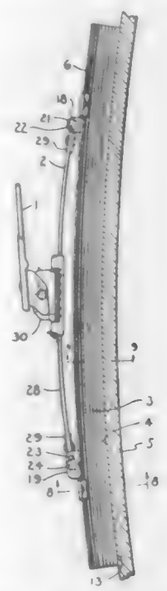
3,372,422
WINDSHIELD WIPER BLADE AND CARRIAGE ASSEMBLY
John W. Anderson, Gary, Ind., assignor, by mesne assignments, to The Anderson Company, a corporation of Indiana
Filed Aug. 7, 1947, Ser. No. 766,956
10 Claims. (Cl. 15—250.42)

1. A windshield wiper unit comprising an elongated resilient flexible body having a back portion and a wiping edge conformable to a surface to be wiped, a pair of spaced transversely aligned grooves formed in the body extending substantially throughout the length thereof and positioned between said back portion and said wiping edge, elongated backing means flexible in a plane substantially perpendicular to the surface to be wiped and substantially inflexible in a plane at right angles to said first-mentioned plane, said backing means having a pair of spaced longitudinally extending marginal edges positioned in said transversely aligned grooves, said backing means in its entirety being positioned below said back portion and being normally generally flat and lying in a plane generally parallel to the surface to be wiped and normally generally at right angles to said wiping edge, in combination with a superstructure for said unit for applying pressure thereto to cause the wiping edge of the flexible body to conform to the surface being wiped, said superstructure including longitudinally spaced apart holder means and a yoke extending lengthwise of the medial portion of said yoke and each extending inwardly and outwardly in the direction of the length of said unit from



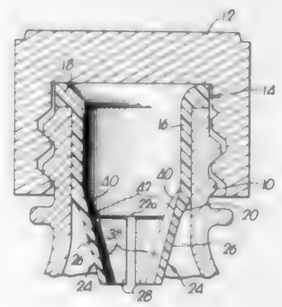
its medial pivotal connection with said yoke, each end portion of each of the holder means including oppositely laterally projecting side portions rigidly related to each other positioned to overlie portions of said backing means inwardly and outwardly of said pivotal connections for exerting downward pressure on the outer portions of said backing means, inwardly and outwardly of the pivotal connections, said laterally projecting side portions having extremities extending downwardly and inwardly below the opposite outer portions of said backing means to straddle the same inwardly and outwardly of said pivotal connections for retaining said marginal edges of said backing means in said grooves, the inner ends of each of said holder means being spaced apart a substantial distance to provide a freely flexible medial span of said backing means.

3,372,423
WINDSHIELD CLEANER
John W. Anderson, Gary, Ind., assignor, by mesne assignments, to The Anderson Company, a corporation of Indiana
Filed Dec. 13, 1945, Ser. No. 634,729
19 Claims. (Cl. 15—250.42)



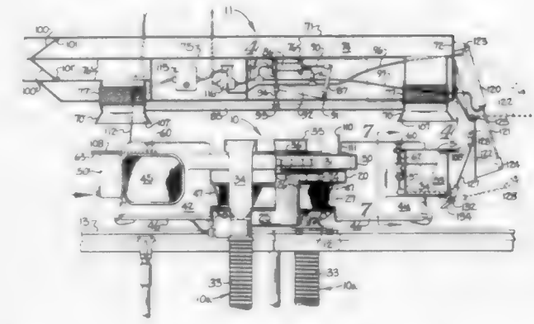
13. A windshield wiper device comprising a wiper unit, said unit including an elongated resilient flexible body having a back portion and a wiping edge conformable to a surface to be wiped, a pair of transversely aligned grooves formed in the body extending substantially throughout the length thereof and positioned between said back portion and said wiping edge, elongated backing means flexible in a plane substantially perpendicular to the surface to be wiped and substantially inflexible in a plane at right angles to said first mentioned plane, said backing means having a pair of uninterrupted longitudinally extending edges positioned in said pair of transversely aligned grooves, longitudinally spaced apart clamp means connected to said unit, and means for applying pressure to said clamp means to cause the wiping edge of the flexible body to conform to the surface being wiped.

3,372,424
SEALING INSERT FOR CONTAINERS
Leo L. Kellett, 1605 W. 76th, Kansas City, Mo. 64114
Filed Dec. 12, 1966, Ser. No. 601,024
7 Claims. (Cl. 15—257.05)



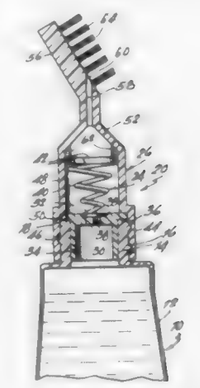
1. An insert of flexible material for a container neck, said insert comprising:
- a cylindrical body adapted to be complementally received within said neck;
- a continuous, outturned flange at the normally uppermost end of the body overlying the neck when the body is received therein,
- said body having an externally bevelled band thereabout at the opposite end thereof,
- said band having a lowermost extremity disposed in radially inwardly spaced relationship to the circumferential periphery of said body, and a pair of diametrically opposed, arcuate featheredges at said extremity; and
- a pair of spaced, elongated, diametrically opposed, transversely U-shaped lips each provided with a transversely arcuate bight and a pair of spaced, flat wings integral with the bight,
- said lips extending downwardly from said band between said featheredges,
- said bights being integral with the band at said extremity, thereby defining a line of flexure for each bight respectively at the union of the bight and the band whereby, by virtue of the bevelled band, the lines clear the neck when the body is received therewithin to permit free flexure of the lips without interference from the neck when positioned for normal use therein,
- said wings extending inwardly from the innermost, concave surfaces of corresponding bights and having uppermost ends spaced from said featheredges therebeneath,
- each wing having an upright edge extending downwardly from said end thereof,
- the upright edges of the wings of one of the lips being spaced from the upright edges of the corresponding wings of the other of said lips.

3,372,425
APPARATUS FOR CLEANING FLOORS AND DISPOSING OF FIBER WASTE IN TEXTILE MILLS
Robert L. Black, Jr., Charlotte, N.C., assignor to Parks-Cramer Company, Fitchburg, Mass., a corporation of Massachusetts
Filed Sept. 1, 1965, Ser. No. 484,381
13 Claims. (Cl. 15—312)



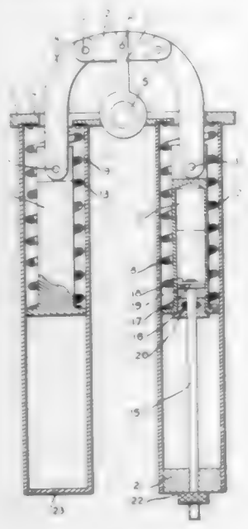
A fiber waste disposal system in which fiber waste sucked from a textile mill floor into one or more collection chambers of a traveling suction cleaner is periodically transferred therefrom by establishing communication between the chambers and a suction mouth or mouths of a stationary receiving station, during which the cleaner may be stopped at the station, and thereafter, the cleaner may resume travel past the station in the same direction as before. Such communication may be established by extending and then retracting the suction mouths relative to the station and the traveling cleaner.

3,372,426
APPLICATOR WITH BRUSH
Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583
Filed Feb. 16, 1966, Ser. No. 527,974
7 Claims. (Cl. 401—183)



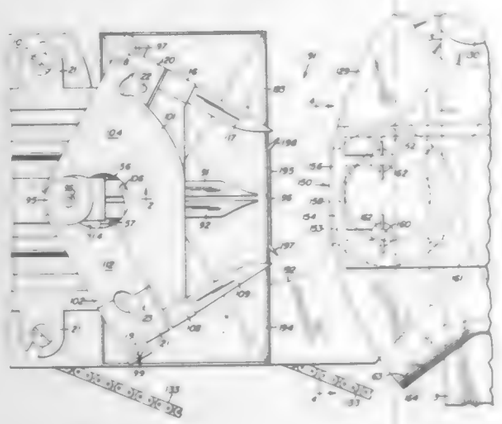
1. An applicator for a squeezable container having a threaded neck portion comprising a retaining ring having a projection portion receivable in the neck, said retaining ring being of a diameter too large to fit in said neck, said retaining ring having an opening therein forming a valve seat, an applicator body having a cylindrical threaded portion adapted to be threadedly secured on the neck, a hollow shank integral with and communicating with said cylindrical portion, said shank having a head provided with a bore therethrough communicating the outer surface of said head with said cylindrical portion, a body of compressible material disposed between said ring and said bore, and a valve assembly mounted in said body and cooperating with said valve seat to control fluid flow through said opening.

3,372,427
DOOR CLOSER MECHANISM
Mauno Kalevi Koivusalo, Yliopistonkatu 24C 50, Turku, Finland
Filed May 14, 1965, Ser. No. 455,691
2 Claims. (Cl. 16—68)



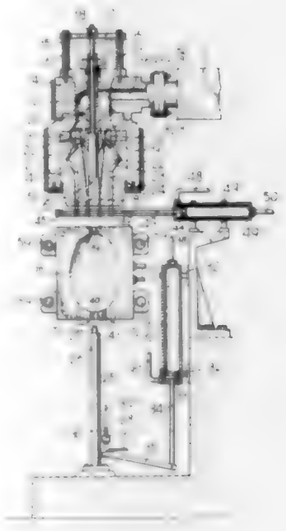
A door closer provided with two cylinders and a piston within one cylinder containing a hollow closed space full of hydraulic liquid or other fluid medium. Hence the length of that piston can be utilized for two different purposes and the main pistons of the cylinders may be made shorter with less weakening of the door structure.

3,372,428
SHELLFISH MEAT PICKING MACHINE FOR A CRAB PROCESSING APPARATUS
Daniel E. Houghton and Emmett F. Deady, Arlington, Va., assignors to the United States of America as represented by the Secretary of the Interior
Filed Mar. 29, 1966, Ser. No. 538,930
8 Claims. (Cl. 17—2)



A machine cyclically synchronized to operate together with a mechanism clamping a crab core in position to be entered by converging gouge-like blades of dual sets which in a continuing movement sever, grip, and withdraw lump meat from the core for disposal thereof by release down a chute upon the blades separating when completing their retraction from the core. A crank driven carriage cooperates with a control slide operating therein which coordinates the disposition of camming elements thereon to direct the blades into the cutting, gripping, withdrawing and releasing actions.

3,372,429
MANUFACTURE OF DOUBLE-WALLED HOLLOW PLASTIC PRODUCT
Takeo Kato, Ota-ku, Tokyo, Japan, assignor to Kabushiki Kaisha Kato Seisakujo, Tokyo, Japan
Filed Feb. 28, 1964, Ser. No. 348,187
Claims priority, application Japan, Mar. 4, 1963, 38/11,223
7 Claims. (Cl. 18—5)



2. In apparatus for manufacturing double-wall hollow plastic products, the combination of an extruding die comprising an inner die member, an annular intermediate die member and an annular outer die member concentric with one another and radially spaced apart to provide an annular inner extrusion orifice between said inner die member and intermediate die member and an annular outer extrusion orifice between said intermediate die member and said outer die member; means for periodically supplying fluidized plastic material under pressure to said extruding die to extrude simultaneously a tubular inner parison from said inner orifice and a tubular outer parison from said outer orifice; a split mold comprising mold elements movable toward one another in a direction perpendicular to said parisons to embrace said parisons and adapted to register with one another to form a complete mold; a core mold concentric with said die members and movable axially relative to said inner die member; means for moving said core mold axially into said inner parison, said core mold having a cross section less than that of said inner die member whereby said core mold is freely insertable in said inner parison, and a blow pin insertable between said parisons to blow a pressure medium therebetween to conform said outer parison to said split mold and to conform said inner parison to said core mold.

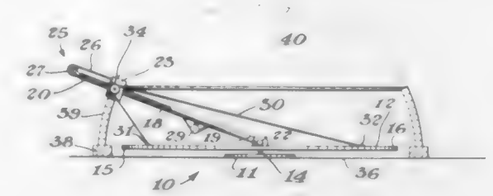
3,372,430
DEVICE FOR THE GENERATION OF SURFACES OF REVOLUTION
Fred J. Lowes, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 29, 1965, Ser. No. 505,671
6 Claims. (Cl. 18—5)

1. An apparatus for the preparation of structures of circular cross section which comprises in cooperative combination

a means for guiding the deposition of building material in a generally dome-like configuration, the apparatus having

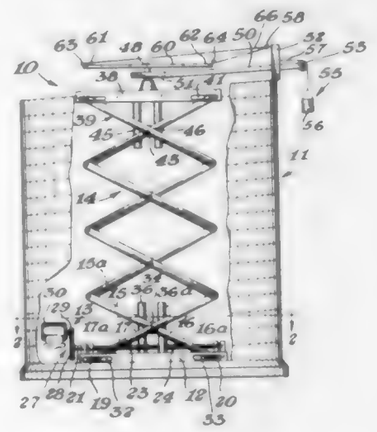
a centrally pivoted arm which is adapted to be pivoted within a solid angle generally commensurate with the surface of the desired structure, the improvement which comprises

a material dispensing head slidably mounted upon the arm,



a cable secured to a base supporting the arm, the base being rotatable about the axis of generation of the structure, the cable being secured to the base at at least two places and being movably secured to the material dispensing head.

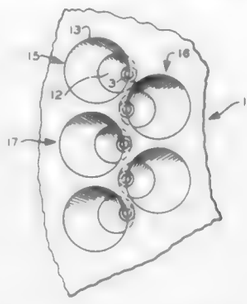
3,372,431
APPARATUS FOR PREPARATION OF STRUCTURES
Fred J. Lowes, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,450
6 Claims. (Cl. 18—5)



1. In an apparatus for the generation of structures by the incremental positioning of the building material utilizing a positionable building material depositing head the improvement which comprises means to rotate the head about a fixed axis, means to continuously position the head on a generally elliptical path as the head rotates about the axis.

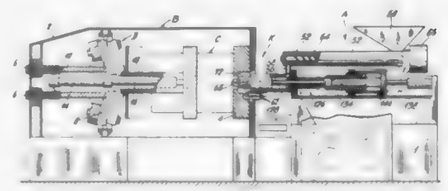
3,372,432
EXTRUSION DIE
Warren R. Howard, Beverly, N.J., assignor to Wall Industries, Inc., a corporation of De'aware
Filed June 21, 1966, Ser. No. 559,176
7 Claims. (Cl. 18—8)

1. In an extrusion die having a plurality of adjacent but spaced apart, individual, extrusion orifices, each of said orifices comprising a main passageway terminated by an inlet end on one side of the die and an outlet end on a different side of said die, the improvement comprising said inlet end of each orifice having a diameter at least about equal to the distance between the midpoints of adjacent outlet ends of the orifices, the main passageway of each orifice being tilted away from its outlet end in a manner



such that each main passageway tilts in a direction opposite from the main passageway of the orifices that are disposed adjacent to and on opposite sides of said each main passageway.

3,372,433
MOLD CLAMPING APPARATUS
Robert Nouel, Villejuif, Seine, France, assignor to Inventions Finance Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 173,103, Feb. 13, 1962. This application Apr. 15, 1963, Ser. No. 273,145
Claims priority, application France, Dec. 22, 1962, 1,313/62
12 Claims. (Cl. 18—30)

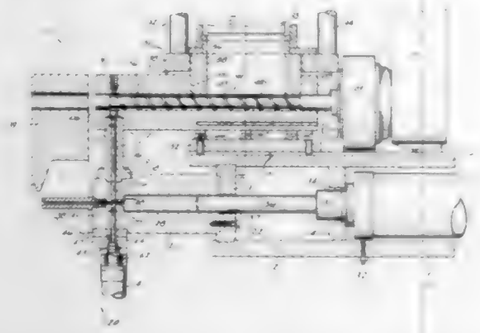


4. In a molding machine of the class described, comprising mold sections, a fluid pressure actuated jack means for moving one of said mold sections to open and closed positions relative to a complementary mold section, a thrust member engaging said one mold section and movable with the latter, fluid pressure actuated force-multiplying thrust means movable into the path of travel of said thrust member to clamp said mold sections and out of the path of travel of said thrust member to allow said jack means to move said one mold section between open and closed positions, and means for positioning said fluid pressure actuated force-multiplying thrust means axially of the path of the mold sections to provide for accommodation of mold sections of varying characteristics and dimensions.

3,372,434
MOUNTING OF EXTRUDER-FEEDER ONTO INJECTION CYLINDER WITH RELIEF FOR HEAT EXPANSION
James W. Hendry, Scottsburg, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 27, 1965, Ser. No. 459,222
7 Claims. (Cl. 18—30)

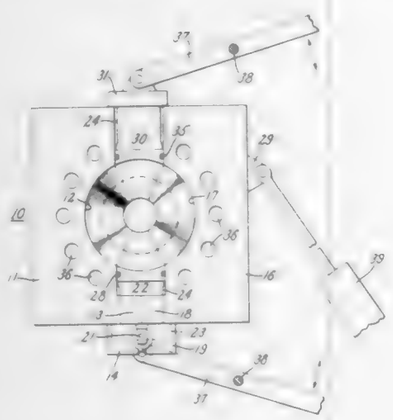
A plasticizing machine including an elongated screw housing and guide means for axially slideably mounting one end of the housing on a fixed base. The housing is provided with a longitudinal chamber. One end of a plasticizing screw is fixed for rotation with respect to the base, the screw being rotatably and slideably received in the chamber. Inlet and outlet openings communicate

with the chamber adjacent the opposite ends of the screw, the openings supplying material to be plasticized and removing plasticized material from the chamber, respectively. A conduit connects with the outlet opening and



is provided with a slip joint to allow axial expansion of the conduit. The other end of the conduit is fixed with respect to the base and communicates with a suitable consuming device.

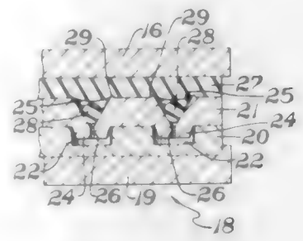
3,372,435
APPARATUS FOR FORMING PLASTIC MEMBERS
Robert J. Ford, Broomall, Pa., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Feb. 18, 1966, Ser. No. 528,445
14 Claims. (Cl. 18—35)



1. An apparatus for molding comprising:
a pair of mold halves having complementary cavities therein,
a hinge pivotally connecting said mold halves on one edge thereof in spaced aligned relationship,
a contoured insert slidably mounted in the space between said mold halves so as to be capable of movement toward and away from said complementary cavities, and
means for reciprocating said insert towards and away from said cavities, whereby when at the innermost position said insert and mold halves form a continuous complementary mold.

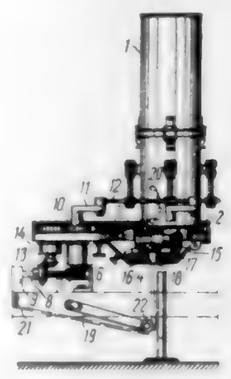
3,372,436
TRANSFER MOLDING APPARATUS
Edward A. Davis, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Apr. 12, 1966, Ser. No. 542,036
5 Claims. (Cl. 18—42)

1. A molding apparatus comprising a first and second section which are disposed one against the other, one of said sections having a plurality of cavities cooperative with the other of said sections to define a plurality of mold cavities, said other section having a plurality of downwardly extending tapered sprues communicating with said mold cavities for feeding moldable material into corresponding ones of said mold cavities, a ram located above said sections and movable downwardly toward and away



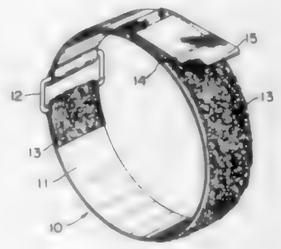
from said sections, means operatively connected to said ram for moving said ram toward and away from said sections, and means located between said ram and said other section for engagement by said ram for distortion into said sprues effecting the flow of moldable material located in said sprues from said sprues into said mold cavities.

3,372,437
COILER FOR CARDS USED IN TEXTILE INDUSTRY
Igor Nikolaevich Iliin and Pavel Ivanovich Aristov, Ivanovo, U.S.S.R., assignors to Ivanovsky Nauchno-Issledovatelsky Institut Khlopchatobumazhnoi promyshlennosti, Ivanovo, U.S.S.R.
Filed June 15, 1965, Ser. No. 464,012
1 Claim. (Cl. 19—159)



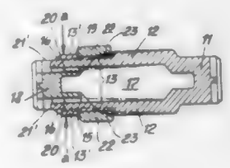
1. A coiler for cards and sliver machines employed in the textile industry, comprising a can adapted to execute a reciprocating movement along a circumference, said can having a sliver inlet opening in the lower portion thereof, means operably related to the can for preventing displacement of sliver coils relative to the can, a turntable beneath the can with the can being disposed eccentrically respecting the turntable, means for coiling the sliver in the can mounted on the turntable in close proximity to the sliver inlet opening, means mounted in said coiling means for positively feeding the sliver in an upward direction into the can through the sliver inlet, a driven shaft, a first drive connection between the driven shaft and the turntable for imparting rotary movement to the turntable, a crank mechanism operably connected to the can, and a second drive connection between the driven shaft and the crank mechanism, for imparting a reciprocating movement to the can.

3,372,438
PEEL RESISTANT TAPE ASSEMBLY
Franz G. Rinecker, Wayne, N.J., assignor to American Velcro, Inc., a corporation of New Hampshire
Filed Nov. 23, 1966, Ser. No. 596,671
5 Claims. (Cl. 24—16)



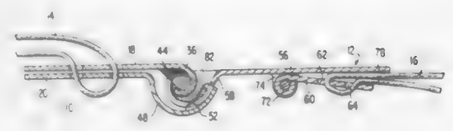
1. In a tape assembly of the type having complementary overlapping gripper type fasteners on individual portions thereof, one of said complementary fasteners being a plurality of hooks and the other a plurality of pile elements which when placed in overlapping face-to-face contact interengage and resist separation by forces substantially parallel to the interfacial plane of engagement between the portions and are readily separable by peeling forces applied substantially normal to said interfacial plane along an end of one of the engaged portions, the improvement in combination therewith in means for resisting a peeling force applied to an endmost portion of the overlapping of said portions comprising a separate tab member secured to a side of said overlapping tape portion opposite the side faced with one of said complementary fasteners but free from engagement with a marginal endmost portion thereof so that a peeling force applied to said tab is converted into shearing forces along the engaged marginal end portion of the overlapping portion thereby resisting separation.

3,372,439
PIPE HANGER
Arthur Schmid, Kreuzlingerstrasse/Grundweg 2, Romanshorn, Switzerland
Filed Oct. 21, 1965, Ser. No. 499,339
4 Claims. (Cl. 24—21)



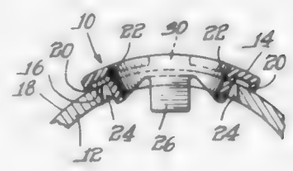
A pipe hanger including an embossed suspender band having recesses formed on one side thereof and corresponding projections on the other side thereof, the projections being shaped to engage in the recesses when the recessed side of the band is placed adjacent to the side thereof containing the projections, and a two-part connecting sleeve for securing two widths of the band together with the projections of one width of the band engaged in the recesses of the other width of the band, the two parts of the connecting sleeve forming a disengageable and detachable slider which in the disengaged state can be individually mounted on opposite sides of the two widths of the band and which can then be interlocked to hold the two widths of the band together.

3,372,440
GUARDIAN SAFETY BELT BUCKLE
Bernard Burson, Jr., Austin, Tex., assignor of sixty-six and two-thirds percent to Perry S. Brown, Austin, Tex.
Filed Dec. 23, 1965, Ser. No. 515,831
12 Claims. (Cl. 24—75)



There is disclosed herein a safety apparatus for use in automobiles, aircraft, or the like, having a pair of safety belt portions and a belt buckle arrangement having dissimilar buckle sections attached to the safety belts. A first buckle section is formed of a pair of opposed curved members arranged to define a cavity and to receive a complementary curved portion of the second buckle section. The apparatus is assembled by pivoting the second buckle section around one of the curved portions of the first buckle section to insert it into the cavity. Metal-to-metal contact of the buckle sections provides positive locking and prevents accidental disassembly. Retaining means in the form of side plates and/or a keyway and rib arrangement prevents lateral movement of the parts during use.

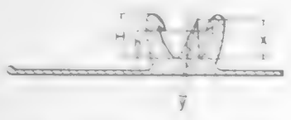
3,372,441
SNAP-IN TYPE GROMMET
Julian V. Fisher, Carpentersville, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,759
9 Claims. (Cl. 24—141)



1. A resilient grommet for application to a peripheral aperture in a workpiece of arcuate cross section including a circuitous body for superimposing the external surface of a workpiece along the margin of an aperture therein, the under side of said circuitous body normally defining a surface of transverse arcuate shape conforming substantially with the transverse arcuate shape of a work surface to which it may be applied, flange means along the inner margin of said body extending laterally thereof for engaging the edge of a workpiece which defines a work aperture, a substantial circuitous portion of the peripheral surface of said flange means extending laterally of said body in substantial parallelism with radii of the arc defined by the under side of said body, and diverging means extending laterally of the plane of said body and having means extending substantially parallel to the plane of the body for snappingly interlocking with the edge of a workpiece surrounding a work aperture to secure the grommet against unauthorized de-

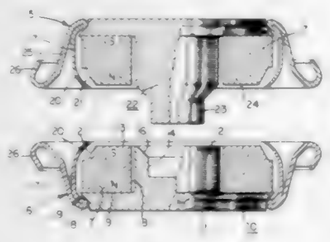
tachment when the grommet is flattened so that the diverging means snugly engages adjacent edges defining the aperture in the workpiece.

3,372,442
SYNTHETIC RESIN FASTENER
Heihachi Ishimatsu, Neyagawa-shi, Osaka-fu, Japan, assignor to High Polymer Chemical Industries, Ltd., Osaka, Japan
Filed July 18, 1966, Ser. No. 565,921
Claims priority, application Japan, Sept. 18, 1965, 40/76,090
2 Claims. (Cl. 24—201)



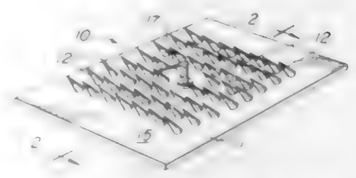
A synthetic resin fastener comprising, in combination, a female talon having a pair of facing, base ridges whose distal ends are provided, respectively, with an obliquely, inwardly and downwardly facing long-pointed projection and a similarly constituted short-pointed projection, and in the space between said facing ridges a peaked ridge having a triangular section which inclines towards said long-pointed projection at an angle up to 10 degrees with respect to a perpendicular to the base plane of the female talon; and a male talon having respectively at its two sides an obliquely, outwardly and upwardly facing deep hook groove and a similarly constituted shallow hook groove, and in its central part a valley like groove of triangular section corresponding with the peaked ridge of said female talon, the configurations of said deep and shallow hook grooves being such that they are capable of fittingly engaging with the respective long and short pointed projections of said female talon.

3,372,443
MAGNETIC FASTENING MEANS
Domenic J. Daddona, Jr., Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 16, 1967, Ser. No. 616,559
5 Claims. (Cl. 24—201)



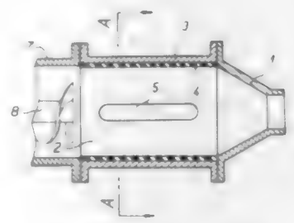
Improvements are provided in magnetic fasteners of the type used in the place of buttons on garments. The stud pin has a reduced diameter end which fits into a recess in the pin of the socket element, thus providing metal to metal lead-in surfaces and avoiding the inside beveled corner on the ceramic ferrite magnet. The socket pin extends through its magnet resulting in greater resistance to lateral stress and a more nearly continuous metal core for increased magnetic attraction of the fastener parts. The holder shells engage loosely around the magnets to eliminate breakage during assembly.

3,372,444
FASTENER WITH ROTATABLE LOCK PIN
Robert V. Mathison, 5 Woodcrest Road, Asheville, N.C. 28804
Filed Sept. 19, 1966, Ser. No. 580,294
5 Claims. (Cl. 24—204)



1. A fastening device comprising a base member, at least one relatively sharp projection emanating from a face of said base member and sloping in a given direction therefrom, a lock pin having a shank extending transversely through said base member and being rotatably journalled therein, and a relatively sharp tip portion on one end portion of said shank, said tip portion being on the same side of said face as said projection, being contiguous to said face and sloping relative to said face at an acute angle, said lock pin being rotatable to a position wherein said tip portion slopes relative to said face in the same direction as the direction of slope of said projection and to a position wherein said tip portion slopes in a direction substantially opposite to the direction of slope of said projection.

3,372,445
PRESS FOR DRAWING CERAMIC AND OTHER MATERIALS IN THE PLASTIC STATE
Karel Maurer, Jindrich Hirsl, and Ladislav Benda, Hradec Kralove, and Juda Sternküker, Prague, Czechoslovakia, assignors to Tesla, narodni podnik, Prague, Czechoslovakia
Filed Sept. 16, 1965, Ser. No. 487,725
Claims priority, application Czechoslovakia, Oct. 1, 1964, 5,445/64
3 Claims. (Cl. 25—11)



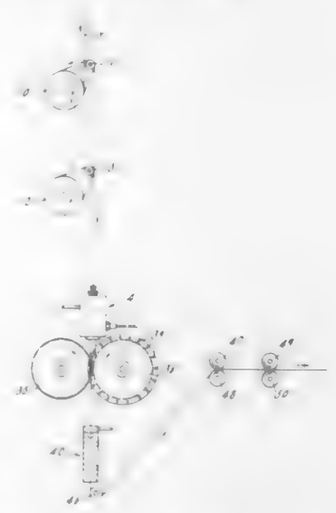
1. In a press for extruding ceramic material in the plastic state and for predrying the material before it is separated from the press, in combination:
- (a) tubular means defining a heating space therein, said space having an axis;
- (b) a tube of insulating material in said space about said axis: and
- (c) at least three electrodes having respective faces elongated in an axially extending direction and arranged on said tube in angularly offset relationship symmetrically relative to said axis, the direction of elongation of each face being inclined relative to said axis at an angle of 0 to30 degrees;
- (d) nozzle means defining an extrusion orifice;
- (e) conveyor means, said tubular means being interposed between said conveyor means and said nozzle means for conveying of a material from said conveyor means in a path extending axially through said tube in said heating space and outward of said orifice of said nozzle means, said faces being exposed to the conveyed material in said space;

- (f) a source of polyphase electric current; and
- (g) means connecting each of said electrodes to one phase of said source.

ERRATUM

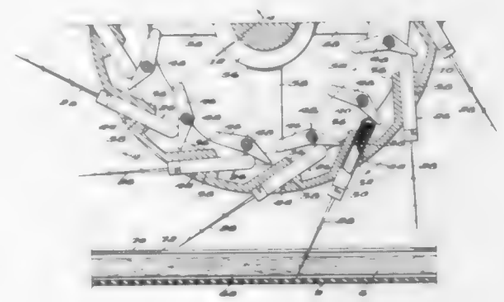
For Class 25—118 see:
Patent No. 3,372,448

3,372,446
JET CRIMPING AND TEXTURIZING APPARATUS
Daniel Shichman, Cedar Grove, and Arthur D. Siegel, Upper Montclair, N.J., assignors to Uniroyal, Inc., a corporation of New Jersey
Original application June 9, 1964, Ser. No. 373,686. Divided and this application June 2, 1967, Ser. No. 643,265
10 Claims. (Cl. 28—1)



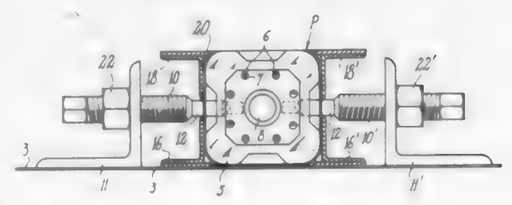
Apparatus for texturing yarn in which the yarn is steam jetted through a hypodermic needle into the nip of arcuate converging surfaces where it is compressed longitudinally and packed into the nip. One of the surfaces is rotated to pass the pack through the nip after which the yarn is taken up.

3,372,447
PROCESS AND APPARATUS FOR NEEDLE FELTING NON-WOVEN FABRICS
James A. Williams, Pearisburg, Va., and Ralph H. Balch, Charlotte, N.C., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 530,446
16 Claims. (Cl. 28—4)



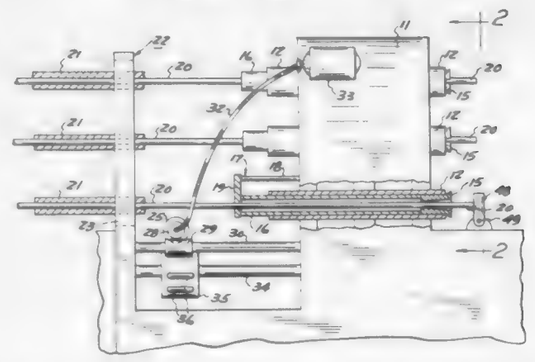
Non-woven fabrics are needle punched in a continuous manner by a plurality of needles mounted on a revolving drum. The needles enter the moving non-woven fabric at an angle less than 90° with respect to the fabric and are withdrawn from the fabric in a substantially longitudinal motion.

3,372,448
APPARATUS FOR PRESTRESSED CONCRETE MEMBERS OF NON-RECTILINEAR SHAPE
Georges Neys, Neuilly-sur-Seine, France, assignor to Societe pour la Fabrication de Produits en Beton Arme ou Precontraint Bepre, Neuilly-sur-Seine, France
Filed Nov. 18, 1964, Ser. No. 412,144
5 Claims. (Cl. 25—118)



1. In an apparatus for casting a prestressed concrete member which is of elongated non-rectilinear shape comprising:
- means defining an elongated non-rectilinear concrete form;
- means for positioning reinforcing wires within the cavity of the form longitudinally thereof including means for tensioning said wires the improvements which consist in the provision of;
- at least one perforate wire-supporting and spacing plate disposed in the cavity of said form transversely thereof and receiving said tensioned wires through the perforations therein, whereby to support the pretensioned wires in properly spaced relation across the cavity during the pouring of concrete into the form around the pre-tensioned wires and during the setting of said concrete; and
- means projecting into the cavity through opposite side walls of said form and engaging opposite sides of said plate for adjusting the transverse positions of and supporting said plate in position the pouring and setting of the concrete.

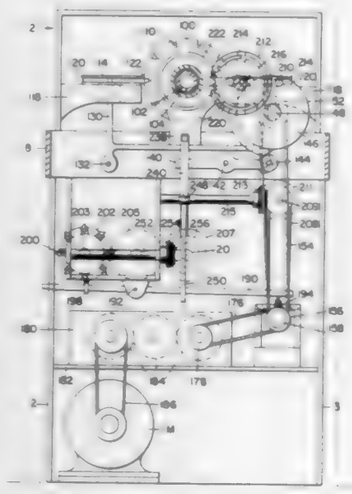
3,372,449
AUTOMATIC FEED FOR MULTIPLE SPINDLE BAR MACHINES
Eugene M. Jamison, 5669 Harvey, Detroit, Mich. 48209
Filed June 15, 1966, Ser. No. 557,712
1 Claim. (Cl. 29—37)



An automatic bar feed, for a multiple spindle bar machine, having a constantly rotating, vertically movable feed roller located beneath and in the plane of the bar to be fed and means for momentarily elevating the roller into contact with the bar for axially driving it in timed relationship to the release of the bar from its gripping collet; said means including a shaft having one end connected to the roller and its opposite end connected

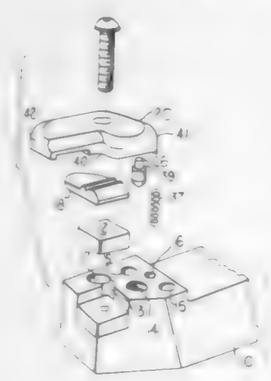
through a flexible coupling to a drive motor, with the shaft extending through a sleeve pivotally mounted upon a support shaft of the machine and rocked vertically upwardly by a timing cam, for thereby rocking the sleeve vertically upwardly and momentarily contacting the roller to the bar.

3,372,450
MACHINE TOOL
Guy C. Worrell, 10 Woodland Road, Westfield, Mass. 01085
Filed Feb. 24, 1966, Ser. No. 529,541
5 Claims. (Cl. 29—43)



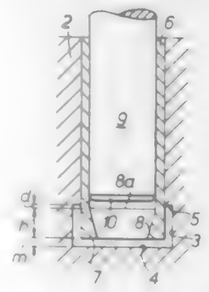
In an automatic screw machine turret indexing and locking and sliding means aimed (1) to control turret operation by means actuated synchronously with or from a slide mechanism and by which control the turret indexing movement may be initiated; (2) to lock the turret in its indexed position including fixed coacting members on the slide mechanism and on the turret, the turret and slide mechanism being separated so that the locking members will not coact during indexing; and (3) to provide, cooperant wtih a reversible slide mechanism, a turret indexing means which is rendered inoperable when the slide operating means is reversed while the machine is under hand control.

3,372,451
CUTTING TOOLS FOR MACHINES
Harold William Pinder, Stanley Beal, and Derrick Merrill, Sheffield, England, assignors to Cintride Limited, a corporation of Great Britain
Filed July 20, 1965, Ser. No. 473,340
Claims priority, application Great Britain, July 22, 1964, 29,861/64
4 Claims. (Cl. 29—96)



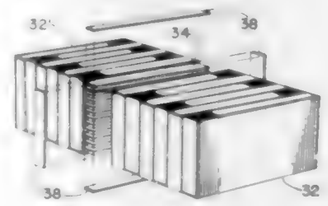
The present disclosure is drawn to a cutting tool combination wherein a clamp member holds a cutting insert in a rebate by a clamp fixing means and the clamp is resiliently acted upon by a spring member between the fixing means and one end of the clamp to maintain the clamp in engagement with the insert after partial release of the clamp fixing means.

3,372,452
SECURING OF SLEEVES IN CYLINDER BORES
Donald Firth, Roger Harvey Yorke Hancock, and William Balfour, East Kilbride, Glasgow, Scotland, assignors to Minister of Technology, London, England, a corporation
Filed Sept. 15, 1965, Ser. No. 487,543
Claims priority, application Great Britain, Sept. 25, 1964, 39,065/64
9 Claims. (Cl. 29—156.4)



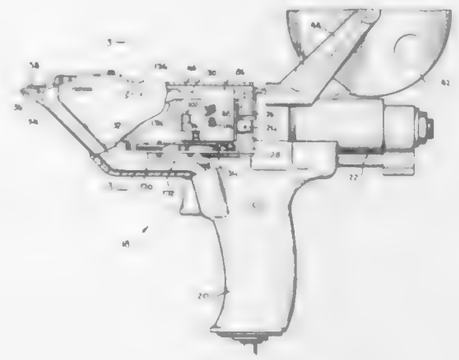
9. The method of shrink fitting a sleeve into a cylinder bore wherein the said bore is first relieved at its inner end by an annular recess and the sleeve is initially formed of a length to overlap the recess with slight positive clearance from the inner end wall of the bore, the method further comprising the steps of inwardly deforming the recess-overlapping end of the sleeve, shrink fitting the sleeve into the bore, and passing through the shrunk-in sleeve a cylindrical punch which is a close sliding fit in the mouth of the sleeve so as to expand the deformed portion into the annular recess.

3,372,453
PLATE TYPE HEAT EXCHANGER AND METHOD OF CONSTRUCTION AND REPAIR
Alan G. Butt, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Mar. 22, 1965, Ser. No. 441,466
12 Claims. (Cl. 29—157.3)



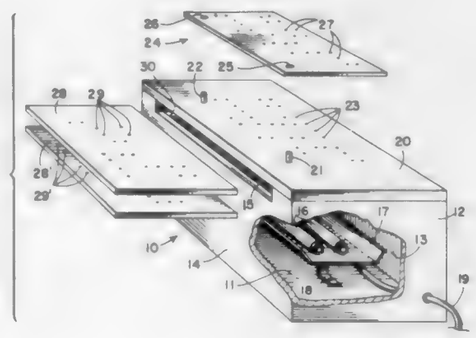
A method of assembling two plate type heat exchanger core sections for heat transfer therebetween wherein the core sections had been formed by furnace or bath brazing and the side plate surfaces between which heat is to be transferred are irregular or nonplanar due to warpage when the core sections were brazed. The method includes the placement of a corrugated metallic heat conductive sheet between the side plates of the two core sections to conduct heat from one side plate to the other side plate. The corrugated sheet is of sufficiently thin material that when pressed between the irregular plate surfaces, the convolutions thereof yield and conform to the surface irregularities thereby forming an efficient heat conductive link between the side plates. Because an efficient thermal connection is thus made, it is unnecessary to braze the corrugated metallic heat conductive sheet to both core sections which would require the reheating of the core sections to braze fusion temperatures with the attendant risk that previously brazed bonds within the core sections would be broken.

3,372,454
TOOL FOR MAKING ELECTRICAL CONNECTIONS
Howard Elroy Stine, Jr., Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 29, 1965, Ser. No. 491,357
3 Claims. (Cl. 29—203)



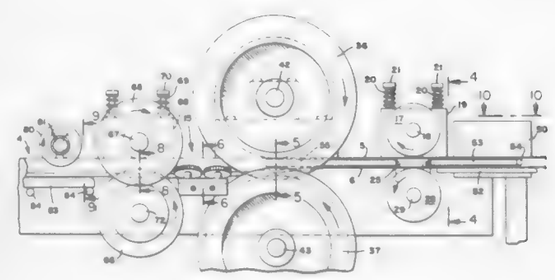
Tool for making clip-type electrical connections comprises reciprocable clip pusher and piston rod. Piston rod is coupled to clip pusher by overload release coupling and by disengageable rigid coupling. Overload release coupling comprises parallel arms mounted on coupling block on end of piston rod; arms are resiliently maintained in engagement with the yoke on the end of the clip pusher. Disengageable rigid coupling comprises detent lever on coupling block having ends which are disposed in recesses in the yoke. During movement of the piston rod, this detent arm is lowered thereby to break the disengageable rigid coupling. Overload release coupling is broken when clip pusher pushes clip against previously applied clip on the terminal post.

3,372,455
COMMON MULTIPLE PARTS LOCATING SYSTEM
James R. Howie, 20445 Roscoe Blvd., Canoga Park, Calif. 91306
Filed Oct. 6, 1965, Ser. No. 493,358
2 Claims. (Cl. 29—203)



This disclosure relates to an apparatus for facilitating the insertion of electrical components in a printed circuit board. The apparatus comprises a light box having an upper portion with openings for registration with the openings in the circuit board into which electrical components are to be inserted. Several templates are provided corresponding in number to the number of different types of multiple components to be inserted. Thus a template for all resistances of the same type is provided with openings positioned to register only with the particular openings in the circuit board for receiving resistances of like value. Insertion of the template between the light source and the openings in the enclosure and positioning the printed circuit board over the openings in the enclosure in registration therewith will result in light only being permitted to shine through certain openings in the circuit board. These openings are thus conspicuously designated and an operator may take a handful of resistances and simply insert them into the lighted openings until no light is visible. The template may then be removed and a template for another group of multiple components such as like condensers inserted in the enclosure so that light will only be permitted to shine through the openings in the circuit board for receiving condensers. The process is repeated with the other templates until the circuit board is properly filled with all of the components for the particular circuit in question.

3,372,456
MACHINE FOR FORMING DOUBLE VANES
Laffie Harper, 1192 Montgomery Ave., San Bruno, Calif. 94066
Original application Mar. 25, 1965, Ser. No. 442,689. Divided and this application June 15, 1967, Ser. No. 646,226
9 Claims. (Cl. 29—208)

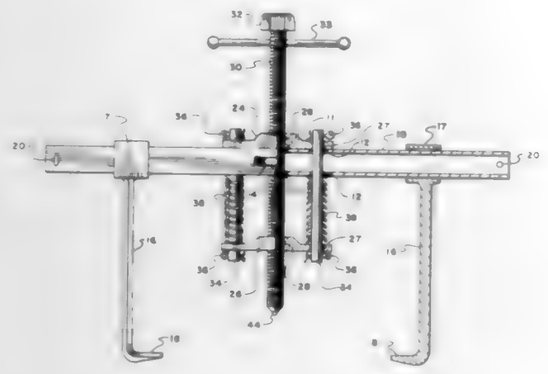


A machine into which a pair of planar sheet metal strips of corresponding width are fed in opposedly facing relation, and means in the machine bows the strips transversely thereof to the same side to different degrees to provide a space between their central portions, and thereafter means is provided in said machine for securing the strips together along their edges, in said bowed condition to provide a hollow or double vane.

3,372,457
SPRING ACTION DRAWING DEVICE
Richard L. Selby and Robert D. Selby, Flint, Mich., assignors of thirty-three and one-third percent to Harold Selby, Flint, Mich.
Filed Oct. 4, 1965, Ser. No. 492,602
3 Claims. (Cl. 29—259)

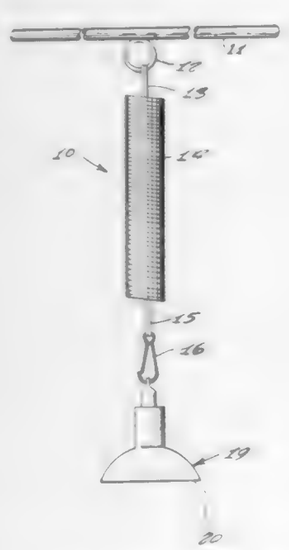
A drawing device including at least two arms adjustably supported upon a frame member and bearing feet adapted to embrace a workpiece which is to be removed from a shaft. A handle extends from the frame member to assist in engaging the device with the workpiece, and a drivescrew extends freely through the frame member parallel to said arms and is arranged to contact axially the end of the shaft from which the workpiece is to be removed. A pair of guide pins extend slidingly through

bores in the frame member, and are arranged to retain the pressure plates, and they support thereon, respectively, a pair of compression springs intermediate the frame



member and the lower pressure plate, to yieldingly urge the frame member and arms in a direction opposite to the forward end of the drivescrew.

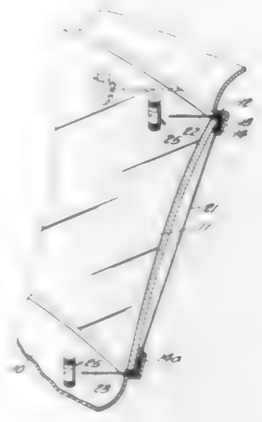
3,372,458
BEARING ALIGNING TOOL
Raymond C. Bradford, Rte. 1, Fayetteville, Tenn. 37334
Filed July 28, 1967, Ser. No. 656,941
4 Claims. (Cl. 29—271)



A tool adapted for heavy equipment vehicles wherein a wheel dolly is used to pull a wheel off. The tool includes principally a steel tube, a coil spring, a snap and aligning cone.

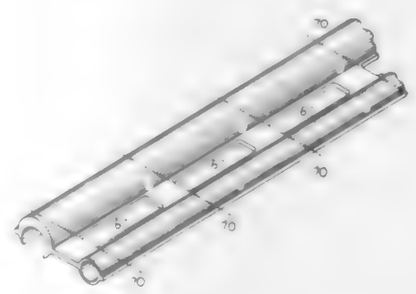
3,372,459
WINDSHIELD BOND CUTTING
Enos C. Lambright, 2359 Main St., Riverside, Calif. 92501
Filed Oct. 20, 1965, Ser. No. 498,890
2 Claims. (Cl. 29—401)

A process of salvaging windshields from automobiles wherein the glass is secured to the vehicle by adhesives characterized by punching holes through the adhesive bond at opposite sides of the windshield after removing the trim, passing a strong wire through the holes and across the pane so that on see-saw manipulation of the



wire as a cutting instrument by appropriate hand grips the pane is removed intact from the vehicle.

3,372,460
METHOD OF MAKING TAP OFF CONNECTORS
Leroy H. Burns, Cleveland, and Herbert J. Mayer, Seven Hills, Ohio, assignors to The National Telephone Supply Company, a corporation of Ohio
Original application Jan. 21, 1965, Ser. No. 427,005, now Patent No. 3,338,608, dated Aug. 29, 1967. Divided and this application Sept. 20, 1965, Ser. No. 488,576
4 Claims. (Cl. 29—417)



3. The process of making a tap off connector for connecting a straight run conductor to a take off conductor, comprising the steps of extruding a continuous length of metal which includes a web connected at either side to first and second generally parallel annular side members with the first annular side member being hollow and open along one side and the second annular side member being hollow and closed on all sides, producing a series of spaced openings in the web, and cutting said continuous length of metal into pieces in a direction transverse to the length thereof and through the openings.

4. The process of making a tap off connector for connecting a straight run conductor to a take off conductor, comprising the steps of extruding a continuous length of metal which includes a flat web connected at either side to first and second generally parallel annular side members both open on each end with the first annular side member being hollow and open along one side and the second annular side member being hollow and closed on all sides, producing a series of spaced openings in the flat web, cutting said continuous length of metal into pieces in a direction transverse to the length thereof and through the openings, closing one end of said second annular side member of the pieces, and twisting the first and second side members of the pieces relative to each other about the web to distort the web and locate the first and second side members at various angular positions relative to each other.

3,372,461
METHOD OF LAYING PIPE LINE
Prosper A. Tesson, Metairie, La., assignor to Gurtler, Herbert & Co., Inc., New Orleans, La., a corporation of Louisiana
Original application July 25, 1962, Ser. No. 212,368, now Patent No. 3,237,438, dated Mar. 1, 1966. Divided and this application Aug. 12, 1965, Ser. No. 536,245
2 Claims. (Cl. 29—429)

1. The method of laying long lines of relatively inflexible metal pipe including the steps of

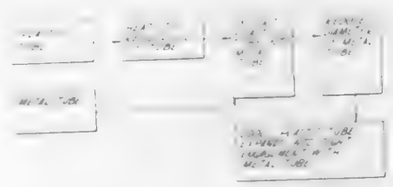
progressively joining together lengths of pipe to form a long line therefrom,

winding the pipe line onto a cylindrical reel as the lengths of pipe are joined thereto,

bending the pipe to approximately the curvature of the reel before winding it thereon,

later moving the reel along the path in which the line is to be laid, while unwinding the line from the reel and simultaneously reverse bending the pipe to substantially rectilinear configuration.

3,372,462
METHOD OF MAKING PLASTIC LINED METAL PIPE
William Bradley Reid, Kalamazoo Township, Kalamazoo County, and Walter Robert Graham, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,523
4 Claims. (Cl. 29—447)



1. A method of forming a composite tubular product comprising an inner plastic tube and an outer metal tube, which comprises the steps of:

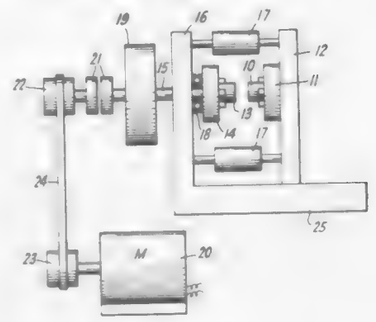
heating an elongated plastic tube to reduce the external diameter thereof;

placing the heated plastic tube inside of a metal tube which is of such an internal diameter that the heated plastic tube fits somewhat loosely therewithin;

deforming the metal tube to reduce the inside diameter of the metal tube while the plastic tube is still heated so that the internal wall of said metal tube mates with the external wall of said plastic tube; and

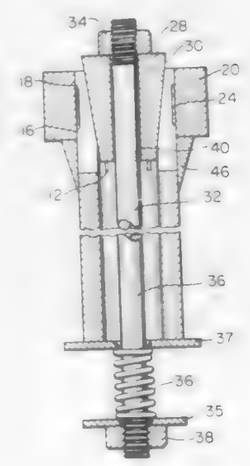
cooling the assembly to permit the plastic tube to expand so that its external wall tightly engages the internal wall of said metal tube.

3,372,463
FRICTION WELDING ZIRCONIUM ALLOYS TO NICKEL ALLOYS
Chin Jung Cheng, Norwalk, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed July 10, 1963, Ser. No. 293,935
3 Claims. (Cl. 29—470.3)



1. The method of friction welding zirconium and Zircaloy 2 workpieces to Inconel workpieces comprising the steps of rotating the workpieces relative to each other, and forcing the rotating workpieces with a force of over 10,000 pounds per square inch of weld area together so that more than 2,000 foot pounds of energy are released in the weld area for each square inch of weld area and so that the weld is completed within ten seconds.

3,372,464
METHOD OF BONDING CARBIDE TO STEEL
Renic P. Vincent and Lawrence B. Wilder, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 502,018
12 Claims. (Cl. 29—473.1)



1. A method of fastening a carbide ring having a longitudinal length L to a hollow steel shaft which comprises:

(a) cutting longitudinal slots in the wall of said steel shaft, said slots extending longitudinally a distance in excess of L;

(b) placing said carbide ring over the slotted portion of said shaft;

(c) providing a clearance between said shaft and said carbide ring, said clearance being for a lesser length than the length of said carbide ring;

(d) placing a brazing compound within said clearance;

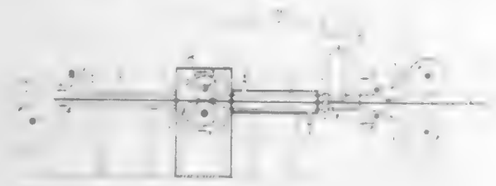
(e) placing a plug within said shaft adjacent said slotted portion, said plug having essentially the same thermal coefficient of expansion as said carbide-ring, and maintaining said plug in forceable contact with the interior wall of said steel shaft while heating the

assembly to a brazing temperature, and during the subsequent cooling of the assembly after the brazed joint is made.

3,372,465
METHOD OF BONDING LAYERS TO AN AUSTENITIC CHROMIUM STEEL CORE

Gerald H. Frieling, Jr., Barrington, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed May 3, 1965, Ser. No. 452,767
3 Claims. (Cl. 29—474.1)

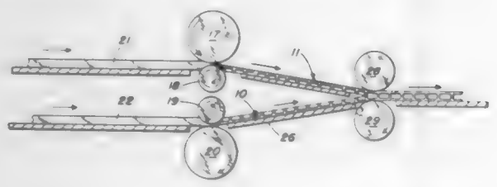


An austenitic chromium steel core, from the surface of which chromium oxide has been removed, in a cleaning solution back-plated in the solution with a solid-phase bondable chromium-free metal, such as copper or a precious metal such as, for example, silver, gold or the like. Clean strips of a cupronickel alloy or titanium are positioned on opposite sides of the plated core and moved through a reducing atmosphere, and thence directly into the bite between squeezing rolls. The core and strips are rapidly heated in their passage through the reducing atmosphere. The rolls squeeze the strips around the plated core to effect solid-phase bonding between the strips and the plating. The margins of the strips are also squeezed together and become solid-phase bonded to one another. Upon emergence of the clad material from the rolls, it is at once quickly cooled in a nitrogen atmosphere. Waste beyond the pinch lines is removed. By means of quick heating and quick cooling, excessive precipitation in the steel of detrimental carbides is avoided and the strength of the steel preserved. The plating shields the steel core against the inherently instantaneous oxidation of the steel surface to chromium oxide when exposed to air and substitutes the more slowly oxidizing surface of the copper or precious metal for effective solid-phase bonding under pressure. The resulting cupronickel or titanium surface of the resulting clad strand is corrosion resistant and in the case of the cupronickel is antifouling because of the cupric ions provided thereby when used for making submarine cables or the like.

3,372,466
METHOD OF MANUFACTURING LANDING MATS

James E. Scholl, Fairfax, Va., assignor to the United States of America as represented by the Secretary of the Navy

Filed May 6, 1965, Ser. No. 453,847
1 Claim. (Cl. 29—475)



A process of forming a metallic mat by simultaneously passing hot slabs of metal through opposed pattern forming rollers to form a pair of half mats, each having one flat and one corrugated side; feeding the half mats, with their corrugated sides in contacting relationship through pressurized rollers to weld the half mats together at all points of contact.

3,372,467
METHOD AND APPARATUS FOR PLASMA WELDING AND MAGNETICALLY CORRUGATING METAL TUBING

George J. Crowdes, West Dennis, Mass., assignor to Simplex Wire and Cable Company, Cambridge, Mass., a corporation of Massachusetts

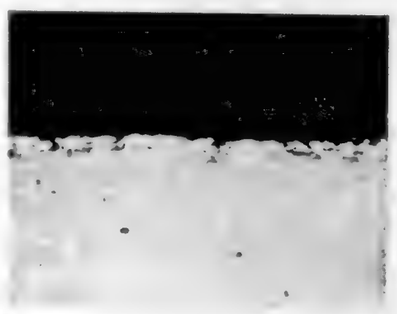
Filed Apr. 19, 1965, Ser. No. 448,981
4 Claims. (Cl. 29—480)

A method for producing shaped tubular metal products from a metal tape is shown. The tape is passed continuously through a tube forming position and a tube swaging position. In the former position, the longitudinal edges of the tape are brought into abutting relationship and a plasma of hot ionized gas is directed at the abutting edges to form a welded seam. The tube then passes through a magnetic swaging position where periodic surges of magnetic flux deform it in a desired configuration. In a preferred embodiment, a tube is first formed and then transversely corrugated.

3,372,468
METHOD OF COATING A COPPER SILVER ALLOY WITH A SILVER COAT

Michael J. Pryor, Hamden, and Joseph Winter, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed June 24, 1965, Ser. No. 466,647
12 Claims. (Cl. 29—528)

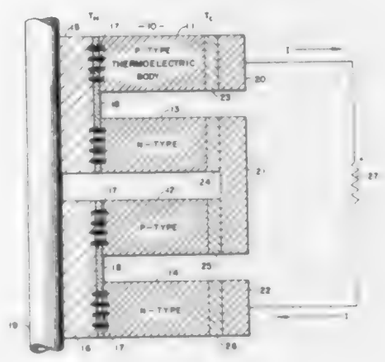


A process which comprises heating an alloy consisting essentially of 10 percent to 70 percent silver and the balance essentially of copper for at least 30 minutes in an oxidizing environment and at a temperature between the decomposition temperature of silver oxide and 780° C. thereby oxidizing surface copper to copper oxide to a depth of at least 0.1 ml.; and removing copper oxide from said surface.

3,372,469
METHOD AND MATERIALS FOR OBTAINING LOW-RESISTANCE BONDS TO THERMOELECTRIC BODIES

Kasimir Langrod, Sherman Oaks, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Oct. 28, 1963, Ser. No. 319,300
9 Claims. (Cl. 29—573)

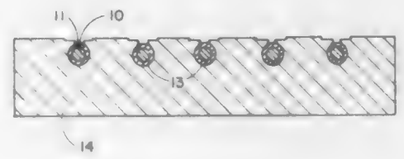


1. The method of bonding a thermoelectric body to a conductive body to provide low resistance electrical contacts between said bodies comprising the steps of disposing a barrier layer and conductive granules between facing surfaces of the bodies to be joined, and contacting said surfaces while applying pressure thereto to bond said bodies and penetrate said barrier layer by said conductive granules, thereby forming low-resistance conductive paths between said bodies through said barrier layer.

3,372,470
PROCESS FOR MAKING COMPOSITE CONDUCTORS

Ahmed El Bindari, Cambridge, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed July 17, 1964, Ser. No. 383,392
18 Claims. (Cl. 29—599)



1. The method of forming an electrically and thermally-conductive connection between an electrically-conductive normal first metal and a superconductive material having a melting point in excess of about 800° C., comprising the steps of:

(a) depositing in uniform, adhering and continuous intimate contact on said superconductive material an electrically-conductive normal metal substantially incapable of forming a metallic compound having a high electrical and thermal resistivity with said first metal;

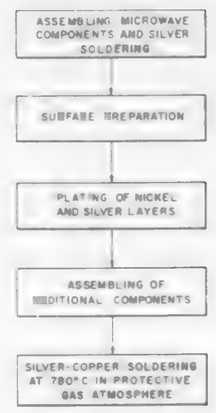
(b) continuously maintaining said first metal and said deposited metal under pressure in uniform and continuous intimate contact; and

(c) heat treating said first metal, deposited metal, and superconductive material at a temperature lower than the melting point of any of the said metals or material and for a period of time sufficient to produce interdiffusion of the deposited metal and said first metal and insufficient to produce diffusion of said deposited metal into said superconductive material.

3,372,471
METHOD OF MANUFACTURING MICROWAVE COMPONENTS

Hans Kuhn, Pforzheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 20, 1964, Ser. No. 405,229
Claims priority, application Germany, Oct. 26, 1963, St 21,250
5 Claims. (Cl. 29—600)


ASSEMBLING MICROWAVE COMPONENTS AND SILVER SOLDERING
SURFACE PREPARATION
PLATING OF NICKEL AND SILVER LAYERS
ASSEMBLING OF ADDITIONAL COMPONENTS
SILVER-COPPER SOLDERING AT 780°C IN PROTECTIVE GAS ATMOSPHERE

1. A method of producing microwave components by electroplating and thereafter soldering within a protective gas atmosphere, and where said components are formed of a base material of steel having relatively constant length when subjected to heating, and are assembled into several subassemblies which are accessible for performing the plating comprising the steps of plating a layer of nickel on the steel base material of the assembled components, said nickel layer having a thickness of several microns for corrosion protection, plating a layer of silver having a thickness of several microns over the nickel layer to increase conductivity, soldering together within a protective gas atmosphere the several subassemblies with a solder of good electrical conductivity at a temperature which fuses the plated layers into the base material.

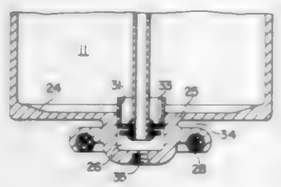
3,372,472
METHOD FOR FORMING A THERMOELECTRIC MODULE

Gerald K. Gable, North Syracuse, and George D. Hudelson, Fayetteville, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed May 22, 1962, Ser. No. 196,732
1 Claim. (Cl. 29—611)

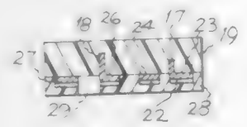
1. A method for forming a thermoelectric module, said method comprising the steps of: encasing an elongate rod of thermoelectric material in an insulating material; bonding the insulating material to the surface of the rod of thermoelectric material; forming the exterior surface of the insulating material with flat surfaces; and severing desired lengths of the encased rod to provide thermoelectric modules of desired dimensions for assembly into a thermoelectric device.

3,372,473
METHOD OF FABRICATING PERCOLATOR VESSEL AND PUMP CONSTRUCTIONS
David B. Price, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 326,832, Nov. 29, 1963. This application Mar. 31, 1965, Ser. No. 447,597
3 Claims. (Cl. 29—611)



1. Method of fabricating percolator vessel and pump constructions comprising the step of: simultaneously forming a cylindrical vessel having a closed bottom end, a wall in said bottom end, an annular groove in one end of said wall and a pump well chamber in the end of said wall opposite the end having said groove cutting away wall material between the annular groove and the bottom of said vessel to form a channel whereby the heat will necessarily be directed to the pump chamber and placing a heating element in said annular groove and bending one of the walls forming said groove over said heating element.

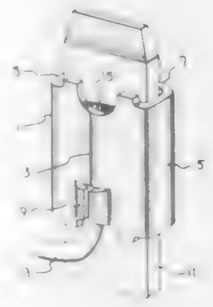
3,372,474
SYSTEM FOR WELDABLE CIRCUITS
Robert W. Polley and Robert W. Tabor, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Nov. 8, 1963, Ser. No. 322,461
7 Claims. (Cl. 29—626)



1. A method of making an electrical circuit article with a clean electrically connectable protruding terminal tab portion comprising the steps of:
(a) forming a protruding tab in a metal sheet, which tab is formed so as to be angularly disposed with respect to the plane of said sheet,
(b) bonding a removable protective insulating matrix layer of material to said metal sheet to embed said protruding tab portion in said matrix material,
(c) selectively removing portions of said metal sheet to establish a circuit configuration which includes said protruding tab portion as part of said circuit configuration,
(d) bonding said circuit configuration and said matrix layer to an insulating base lamina so that said circuit configuration is intermediate said matrix layer and said base lamina, and
(e) removing said protective insulating matrix layer to expose said tab portion which may then be interconnected to an electronic component.

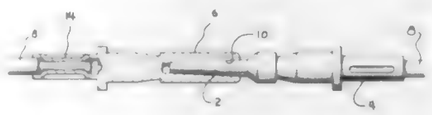
7. A storable electrical circuit article comprised of:
(a) a metal circuit configuration bonded to an insulating base lamina having a protruding tab portion integral with said circuit configuration and angularly disposed at an angle of less than 180° with respect to the plane thereof for subsequent electrical connection to a component, and
(b) a removable protective host sheet material surrounding said tab portion and completely covering said circuit configuration to thereby protect said tab portion and related circuit configuration during subsequent handling and storage.

3,372,475
METHOD FOR WIRING
John Roy Vickery, Jr., York, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Original application July 9, 1963, Ser. No. 293,602, now Patent No. 3,186,077, dated June 1, 1965. Divided and this application Feb. 2, 1965, Ser. No. 429,734
3 Claims. (Cl. 29—628)



Method of making clip-type electrical connections comprises steps of feeding wire from endless source and locating the end of the wire above, and in alignment with, the terminal post. Clip is thereafter moved onto post to make first clip-type connection. Wire is therefore fed from source to the second post and wire is located with its axis extending above the top of the second post and to endless source. Second clip is thereafter moved onto second post so that the wire extends from second connection to the source. Third and subsequent connections can be made in similar manner without severing the wire to provide a continuous conductor between several posts.

3,372,476
METHOD OF MAKING PERMANENT CONNECTIONS BETWEEN INTERFITTING PARTS
Howard Richard Peiffer, New Cumberland, and Thomas James Schuetz, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Continuation of application Ser. No. 521,337, Jan. 18, 1966. This application Apr. 5, 1967, Ser. No. 628,781
1 Claim. (Cl. 29—628)

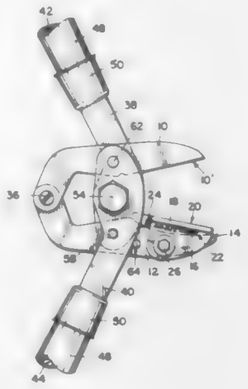


Invention discloses method of forming permanent connection between interfitting parts, the parts having a surface of material selected from the group consisting of copper, copper alloys, gold, and silver. In accordance with the method, one of the parts is coated with indium to a thickness in the range of 20 microinches to 150 microinches. The parts are engaged with each other and allowed to stand at room temperature. Permanent connection is achieved within a short time by keying mechanism resulting from the growth of an intermetallic compound which is formed at room temperature and which is stable at room temperature.

3,372,477
SURGICAL SUTURE EXTRACTOR
Clemens B. Hoppe, P.O. Box 590, Palm Beach, Fla. 33480
Continuation-in-part of application Ser. No. 406,861, Oct. 27, 1964. This application Dec. 15, 1966, Ser. No. 601,966
5 Claims. (Cl. 30—124)

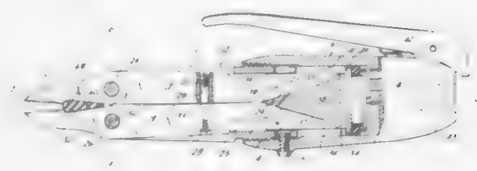
An instrument for severing sutures and substantially simultaneously gripping the cut-off thread or stitch so that it can be cut off and removed in a single motion of the surgeon's hand.

3,372,478
LOPPING SHEARS WITH A COMPOUND ACTION
Edward M. Wallace, Longmeadow, and Wallace M. Preston, West Springfield, Mass., assignors to Wallace Mfg. Corp., West Springfield, Mass., a corporation
Filed Sept. 20, 1965, Ser. No. 488,329
1 Claim. (Cl. 30—193)



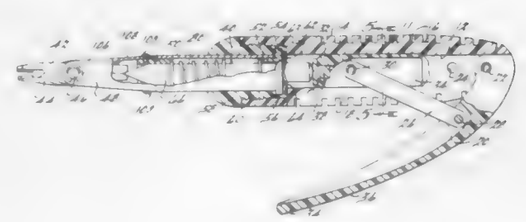
Lopping shears incorporating a compound mechanism for maintaining a cutting jaw and an anvil jaw in the same plane comprising, a cutting jaw, an anvil jaw and an anvil on the anvil jaw having a bearing surface in line contact with the cutting edge of the cutting jaw in shear-closed position, wherein the cutting an anvil jaws are disposed predominantly in the same plane, and wherein a floating jaw pivot pivotally interconnects the cutting jaw and anvil jaw at their respective rearward portions, there being additionally a pair of handle levers having forwardly-projecting portions and a handle pivot pivotally interconnecting the handle levers in a scissor-like formation independent of and forwardly of the jaw pivot, with the forwardly projecting portion of each handle lever being located in juxtaposition to one of the jaws and a pair of pintle means each interconnecting one of the jaws and the forwardly-projecting portion of the respective juxtaposed one of the handle levers.

3,372,479
CUTTING JAW HEAD UNIT FOR A NIPPING TOOL
Howard R. Fischer, New Hartford, N.Y., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 29, 1966, Ser. No. 546,306
7 Claims. (Cl. 30—180)



1. A cutting jaw head unit for a nipping tool, comprising a forked member, a pair of cutting levers arranged in the fork in substantially parallel relation to the longitudinal axis of the fork, each lever having a cutting jaw at one end in opposed relation to a cutting jaw of the other and having at its opposite end a tail finger provided with a cam surface in opposed relation to a cam surface of the other tail finger, a separate pin pivotally supporting each lever near its jaw end in the fork, spring means between the levers biasing the tail fingers toward one another so as to urge the jaw ends of the levers apart, each pin having an eccentric surface upon which the related lever bears as it pivots, each pin being angularly adjustable independently of the other so as to adjust the angle at which the lever is pivotable about the eccentric surface relative to the other lever, and reciprocable camming means cooperable with the opposed cam surfaces to pivot the levers about the eccentric surfaces.

3,372,480
CAM ACTUATED PIVOTED JAW TOOL
Walter J. Rozmus, Hubbardsville, N.Y., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed June 15, 1966, Ser. No. 557,686
13 Claims. (Cl. 30—193)



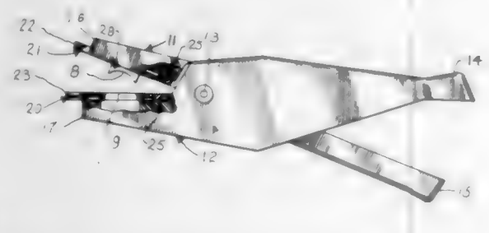
A pivoting jaw tool which is especially suited for use as a wire nipper. The jaws are formed separately from the remaining portion of the tool and are fitted together in such a manner as to insure their proper alignment. Accordingly, the jaws may be installed on the tool by a removable pivot pin without having to carefully fit them to the tool. The jaws are wedge-actuated and the actuating

wedge, together with the jaws and the jaw holder, form a separable subassembly which can be readily interchanged on the tool. The wedge is actuated through operation of a handle pivoted to the tool body.

3,372,481
ELECTRIC HAIR CUTTING SHEAR
Quillard R. Skinner, Cape Girardeau, Mo., assignor of twenty percent to Marshall H. Chatfield, Cape Girardeau, Mo.
Filed Oct. 14, 1965, Ser. No. 495,821
11 Claims. (Cl. 30—210)

A power operated hair cutter having an elongated housing on which a finger grip and finger rests are formed intermediate the ends. The housing encloses an electric drive for a movable blade in sliding contact with a fixed, tapered blade projecting from one end of the housing. A removable blade shield secured to the fixed blade outside of the housing yieldably holds the movable blade in sliding contact with the fixed blade.

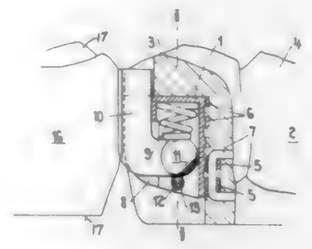
3,372,482
CUTTER FOR EXCISING SHAPES FROM SHEET MATERIAL
Pasquale A. Mercorelli, 441 Summer Ave., Newark, N.J. 07112
Filed May 13, 1966, Ser. No. 550,044
3 Claims. (Cl. 30—229)



A cutter for excising shapes from sheet material wherein the parts of the male die engaging the female die are sharp, generally arcuate, and have at least one sharp point for initial penetration of the material to be cut.

3,372,483
DENTAL PROSTHESIS
Hans Dalla Bona, 419 Hohenweg, 2563 Ipsach, Switzerland
Filed Mar. 12, 1965, Ser. No. 439,231
Claims priority, application Switzerland, Apr. 22, 1964, 5,243/64
5 Claims. (Cl. 32—5)

A dental prothesis having a first joint portion comprising a sleeve and pressure spring assembled with a second joint portion comprising a ball, held in the sleeve by a removable pin, and having a shank attached to a natural

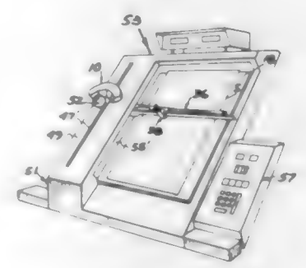


tooth, such joint portions being adapted for limited relative translatory and angular displacement.

3,372,484
ORTHODONTIC METHOD
Everett D. Mumaw, 2717 Edgehill Road, Cleveland Heights, Ohio 44106
No Drawing. Filed Aug. 28, 1964, Ser. No. 392,923
8 Claims. (Cl. 32—14)

A method of applying a flowable medical grade siloxane rubber, which is curable at body temperature, to the teeth and to appliances on said teeth and allowing the rubber to cure to form a protective non-toxic coating for providing temporary cosmetic effects to protect oral tissues of the user against injury.

3,372,485
SCANNING INSTRUMENT
George Mangus and Charles R. Sandlin, Miami, Fla., assignors to The Miami Herald Publishing Co., Inc., Miami, Fla., a corporation of Florida
Filed May 10, 1965, Ser. No. 454,495
15 Claims. (Cl. 33—1)



1. A scanning instrument for measuring and recording the locations of selected points in a copy layout in terms of their rectangular coordinate distances from an assumed origin, said instrument comprising

a layout board having an origin of rectangular coordinates thereon and mutually perpendicular X and Y coordinate axis directions thereon intersecting at and proceeding from said origin,

a supporting structure disposed adjacent said layout board and having an elongated rectilinear guideway at one side of the board disposed parallel to said Y-axis direction,

a carriage mounted on said supporting structure and movable along said guideway parallel to said Y-axis direction,

said carriage having an elongated guide member secured at one end to said carriage and projecting from said carriage over said layout board,

said guide member having thereon an elongated rectilinear guideway disposed longitudinally thereof and parallel to said X-axis direction,

a cross-slide mounted on said guide member in guided sliding engagement with said longitudinal guideway,

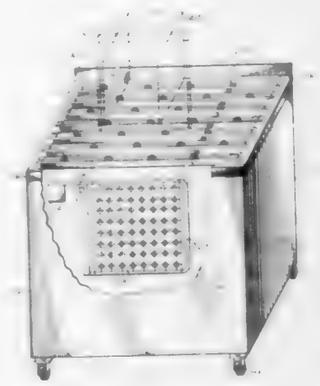
an indicating pointer mounted on said cross-slide with its axis directed downwardly therefrom toward said layout board,

an operating handle rotatably mounted on said carriage and adapted when pushed and pulled to move said carriage and guide member bodily back and forth respectively along the first-named guideway,

mechanism operatively connecting said handle to said cross-slide and responsive to the rotation of said handle for moving said cross slide and pointer to and fro along said longitudinal guideway,

an encoder means responsive to the movements of said carriage and cross slide along their respective guideways for measuring and recording the distances along said X and Y axes from said origin to said pointer when moved into registry with selected points on said layout board brought into registry with said pointer by said movements of said carriage and cross slide respectively.

3,372,486
VOLUME MEASURING DEVICES
Wei Teh Chow, 605 Water St., New York, N.Y. 10002
Continuation-in-part of application Ser. No. 493,642, Oct. 7, 1965. This application May 15, 1967, Ser. No. 650,559
10 Claims. (Cl. 33—1)



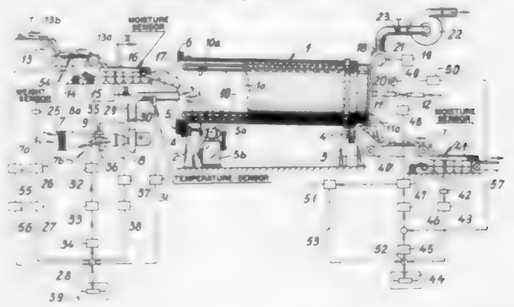
A volume-measuring device for orthogonal objects comprising linear-measurement means and area-measurement means. Both are arranged to be operable from a single, substantially flat, working surface. Utilization of one means leads to the selection of the proper one of a set of the other measurement means to measure the second component and to provide a direct reading of the volume of the measured object in a single operation after the object to be measured is properly aligned with respect to the measurement means.

3,372,487
METHOD OF DRYING BY ELECTICAL MEANS
Paul Eisler, 57 Exeter Road, London NW. 2, England
Continuation-in-part of application Ser. No. 783,609, Dec. 29, 1958. This application July 10, 1963, Ser. No. 293,953
Claims priority, application Great Britain, Jan. 7, 1958, 582/58
1 Claim. (Cl. 34—1)

1. A method of accelerating by heat solidification of a porous material produced by chemical reaction in a layer of liquid material comprising incorporating in the liquid material a substance which when heated below the temperature of sudden transition under the ambient conditions of the liquid into the solid state evolves a gas, bringing into good heat conductive contact with the liquid layer a heating film the major part of which is occupied by an electrically conductive surface pattern uniformly distributed, passing an electric current through the surface pattern of an intensity which is controlled so that by the time

the temperature is reached at which gas is evolved, the liquid layer has attained a viscosity which allows the evolved gas to form pores in it without substantial escape, and continuing the heating at an appropriate temperature below that of sudden transition under ambient conditions of the liquid into the solid state until the solid state is attained.

3,372,488
APPARATUS FOR CONDITIONING TOBACCO
Hans Koch, Hamburg-Rahlstedt, and Waldemar Wochnowski, Hamburg, Germany, assignors to Hauni-Werke Korber & Co. K.G., Hamburg-Bergedorf, Germany
Filed Nov. 17, 1964, Ser. No. 411,788
Claims priority, application Great Britain, Nov. 18, 1963, 45,434/63
10 Claims. (Cl. 34—46)

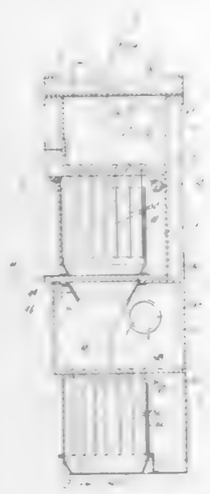


Moist tobacco is advanced through a conditioning chamber receiving two heated fluids one of which expels some and the other of which expels the remainder of surplus moisture from tobacco. A detector measures the moisture content upstream of the conditioning chamber and regulates the operation of an adjuster which controls the admission of the one heated fluid. A weighing device measures the weight of tobacco ahead of the conditioning chamber and regulates the operation of a second adjuster which also controls admission of the one heated fluid.

3,372,489
HEAT TRANSFER APPARATUS USING FLUIDIZATION IN BOTH SINGLE BED AND PLURAL BED FORMS
Ernest Charles Brown, 19 Ledgewood Drive, Danvers, Mass. 01923
Continuation of application Ser. No. 450,428, Apr. 23, 1965. This application Dec. 29, 1966, Ser. No. 613,701
10 Claims. (Cl. 34—57)

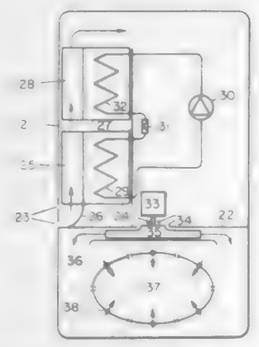
Heat transfer apparatus using fluidization comprising top and side walls defining an enclosure and a series of

spaced horizontal partitions forming with the side and top walls, in vertically upward succession, a lower chamber, an upper treating chamber, and a superposed plenum. The partition forming the floor of the upper treating chamber



is movable to form an opening leading downwardly into the lower chamber. A plurality of parallel tubes are provided for introducing air at high velocity from the plenum in a downward direction into the upper chamber.

3,372,490
APPLIANCE FOR DRYING HANDS BY MEANS OF HOT AIR
Hugo Ledermann, Eichstrasse, Uerikon, Zurich, Switzerland
Filed June 27, 1966, Ser. No. 560,749
3 Claims. (Cl. 34—76)



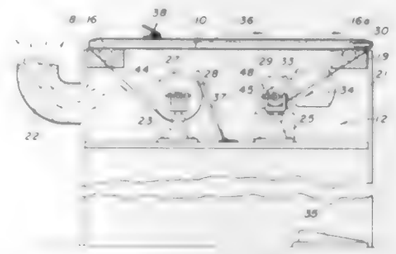
An appliance for drying hands by means of hot air in which an airflow for ultimate introduction into an outwardly open space for the hands is subjected to an initial dehumidification for reducing the water vapor pressure to less than that existing on the hands to be dried and thereafter heated and directed into the outwardly open space. The storage of the cold energy and heat energy permits the appliance to become directly effective without loss of time for the preliminary cooling or heating of the exchange surfaces in use.

3,372,491
NAP BAND ATTACHMENT FOR HAIR DRYERS
Willa C. Morrison, 65 Santa Maria St., Palm Springs, Calif. 92262
Filed Aug. 11, 1965, Ser. No. 478,808
2 Claims. (Cl. 34—99)

A head rest attachment for a hair dryer, consisting of a strap extending chordwise across the circular opening in the bottom of the dryer hood, and positioned to lie across the forehead of the person using the dryer so as to provide support for the head while the person naps. One end of the strap is connected to a spring-powered re-

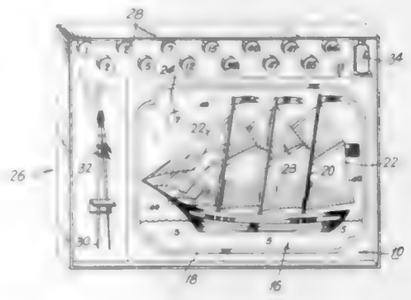
tractor mounted on one side of the hood, and the other end thereof is provided with an elongated loop ring that is engageable over a hook on the other side of the hood.

3,372,492
WORK TABLE FOR HAND PRINTING
William Walter Cousins, 26 Thatcher Ave., Scarborough, Ontario, Canada
Filed Sept. 23, 1965, Ser. No. 489,541
Claims priority, application Canada, Apr. 13, 1965, 928,103
9 Claims. (Cl. 34—151)



This specification discloses a work table comprising a flat rectangular, padded working surface with spaces on the sides thereof and a chamber therebelow. An exhaust fan in the chamber draws air and fumes from the space above the working surface and delivers it to an exhaust conduit. A roll of paper is mounted in the chamber and the strip therefrom is passed over the working surface and back to a motor driven take up roll. Clamps are provided for securing stock in position on the working surface.

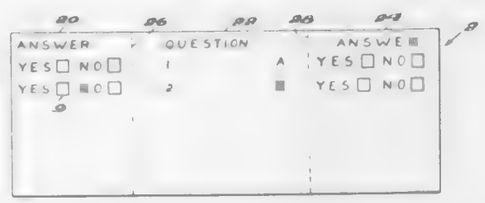
3,372,493
ANTIQUED PAINTING ON WOOD AND BY-THE-NUMBER SYSTEM OF MAKING THE SAME
Lawrence Birch, Rego Park, N.Y., assignor to Avalon Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York
Filed Sept. 15, 1967, Ser. No. 667,933
7 Claims. (Cl. 35—26)



A system of making an antique painting by smoothing a broad face of a wood panel, applying an impermeable clear sizing coat to said face, forming a paint-by-number

design with a dark oleophobic material on the face, supplying the panel to a user along with matched number-identified oil paints and a transparent tinted antiquing lacquer, scoring and punching the face of the panel according to artistic taste to simulate an old piece of wood with cracks and wormholes, filling in the paint-by-number areas with the oil paints while leaving unpainted the paint-by-number lines that form the design, allowing the paints to dry, and finally applying the antiquing lacquer over the painted face of the panel.

3,372,494
METHOD AND ARTICLE FOR OBTAINING INFORMATION
Alan S. Marcus, Allston, Mass. (611 W. 111th St., Apt. 6, New York, N.Y. 10025)
Filed Mar. 31, 1965, Ser. No. 444,295
4 Claims. (Cl. 35—48)

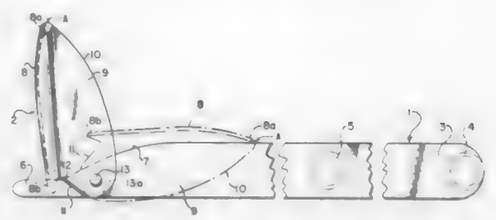


1. A poll questionnaire form for taking a plurality of of polls simultaneously comprising a body portion, at least one pair of perforations dividing the body portion into a question portion and a pair of answer portions, selected questions being printed on the question portion adjacent the perforations and being pertinent to answers on the answer portion adjacent thereto, and means designating the places on the answer portions for recording the answers on the answer portion.

3,372,495
BOOT WITH FIT ADJUSTMENT MEANS
John J. Finn, 60 E. 32nd St., Chicago, Ill. 60616
Filed June 27, 1966, Ser. No. 560,615
3 Claims. (Cl. 36—2.5)

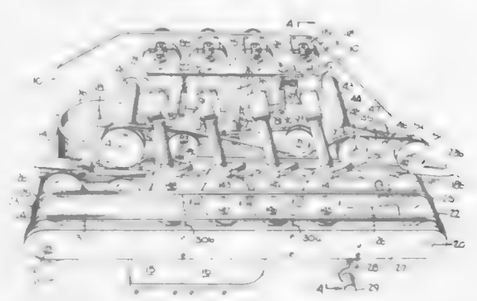
1. In a boot having a sole and an upper, means for preventing the wearer's heel from rising from the sole of said boot comprising an inflatable bladder disposed between the instep of said upper and the instep of said wearer's foot, said bladder covering completely all space under the vent area and being an integral part of said upper and wherein the instep of said boot includes a laced closure and a tongue under said lacing and wherein said bladder is secured to the underside of said tongue and is substantially coextensive therewith, said bladder including a valve means for inflation and deflation.

3,372,496
CLAM GUN
Donald E. Lawlis, Buckley, Wash., assignor to Del-Guy Dispensers Inc., Buckley, Wash., a corporation of Washington
Filed Nov. 23, 1964, Ser. No. 413,139
2 Claims. (Cl. 37—119)



A clam digging shovel having two parallel handles or shafts with a blade pivotally mounted between the handles on an axis spaced a short distance from adjacent ends of the handles. The blade has a longitudinally and transversely curved surface with parallel side plates which are pivoted to the respective handes so as to limit the pivotal movement of the blade between position generally parallel to the handles and extending upwardly when the handles are inserted into the ground. The forces acting on the blade when the shovel is retracted cause the blade to pivot to a position generally at right angles to the handles thereby lifting a quantity of sand or dirt by merely inserting the handles into the ground and then retracting them in the reverse direction.

3,372,497
SEAM IRONING MECHANISM
Victor J. Sigoda, Great Neck, N.Y., assignor to Man-Sew Corporation, New York, N.Y., a corporation of New York
Filed Aug. 23, 1965, Ser. No. 481,522
23 Claims. (Cl. 38—2)

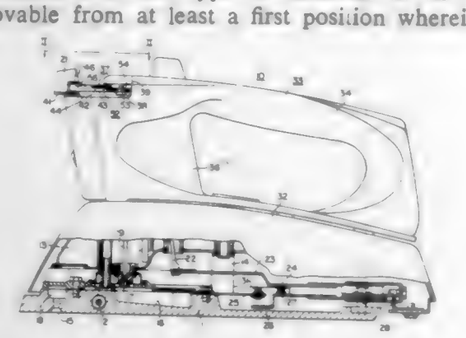


Ironing mechanism has drive arrangement with variable speed transmission for conveying garment section through ironing elements; transmission may be driven from sewing machine to actuate conveying members only during sewing; ironing members consist of floating buck, thin heat transfer belt, and transversely retractable heat pod(s) to apply heat to belt.

3,372,498
IRON
Earl W. McCluerey, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1966, Ser. No. 590,317
5 Claims. (Cl. 38—77)

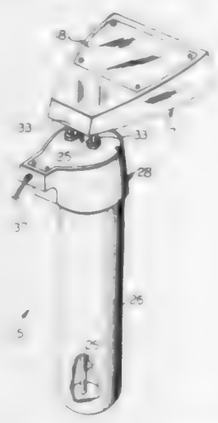
1. An iron comprising, housing structure including a handle, a soleplate, means for heating said soleplate, means for automatically controlling the energization of said heating means to thereby control the operating temperature of said soleplate, said automatic control means being adjustable to various settings, means for varying the setting of said control means, indicia bearing struc-

ture adjacent the path of movement of said means for varying the setting of said control means, said indicia bearing structure including a member provided with indicia indicative of the type of material to be ironed and movable from at least a first position wherein said



varying means and said member cooperate to calibrate said iron for operation through a first range of temperatures, and a second position wherein said varying means and said member cooperate to calibrate said iron for operation through a second range of temperatures.

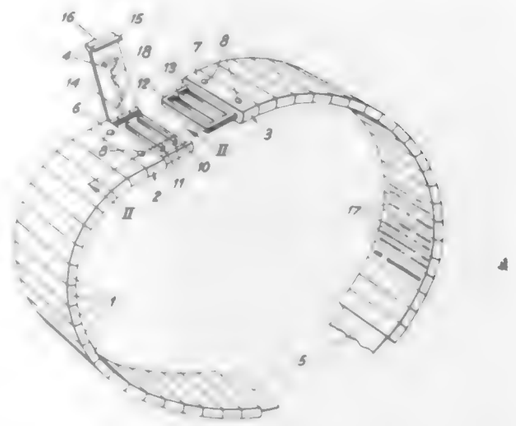
3,372,499
PRESSING IRONS
Jack J. Gilbert, Spring Valley, N.Y., assignor to Bernard Frank, Shamokin, Pa.
Filed Dec. 15, 1966, Ser. No. 601,928
9 Claims. (Cl. 38—77)



1. In an ironing device of the character described, a casing having a metal front wall whose outer surface serves as the ironing surface, an electric heater element behind said front wall and carried by the casing, a resilient squeeze bottle behind said front wall, serving as a water tank and as the handle of said device, a cap closing said bottle and carrying said casing, a water-delivery tube extending from within the lower part of said bottle, then outwardly thereof in water-tight relation therewith, and terminating within said casing wherein it is adapted to discharge, whereupon squeezing said bottle, water therefrom will be forced through said tube and into the casing; the heat generated by the heater element when actuated, being for heating said casing and for vaporizing the water entered into said casing; said front wall having perforations through which the steam made will pass out of the casing.

3,372,500
IDENTIFICATION PIECE
Georges Bernard Claude, Rue du Progres 59, La Chaux-de-Fonds, Neuchatel, Switzerland
Filed Oct. 21, 1965, Ser. No. 499,679
Claims priority, application Switzerland, Apr. 8, 1965, 4,918/65, 4,919/65
3 Claims. (Cl. 40—21)

The disclosure relates to a wrist-band comprising a thin flexible support having a plurality of flat links slidably mounted thereon. The flat links carry suitable indicia. End



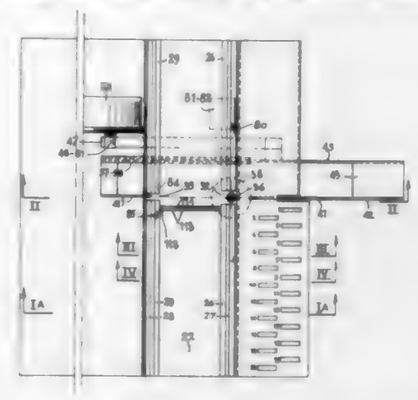
links retain the flat links and provide for coupling to form a closed band.

3,372,501
PNEUMATIC DISPLAY SIGN
George B. Greene, Lafayette, Calif. (2501 Anniversary Lane, Newport Beach Calif. 92660)
Filed Feb. 23, 1966, Ser. No. 529,417
6 Claims. (Cl. 40—28)

1. A display comprising:
a casing having a translucent window;
a diaphragm mounted to divide said casing into opposed chambers and so arranged as to be movable to lie adjacent said window or remote therefrom;
an indicia carried by said diaphragm; and
means for applying a fluid pressure to said diaphragm to move the same, said means for applying a fluid pressure comprising first and second fluid conduits each of which communicates with one of said opposed chambers.

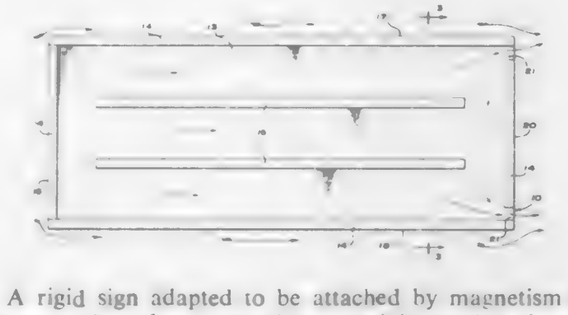
3,372,502
SYSTEM FOR MOVING THE TRANSPARENCY MAGAZINE IN TRANSPARENCY PROJECTORS
Marcel Jules Helene Staar, Rhode-Saint-Genese, Belgium, assignor to Usines Gustave Staar S.A., Brussels, Belgium
Filed July 12, 1965, Ser. No. 471,217
Claims priority, application Belgium, July 13, 1964, 650,463
25 Claims. (Cl. 40—36)

Transparency projection apparatus including separate motors for indexing a magazine which houses the transparencies and for driving a slide which moves the transparencies from the magazine to a projection position and



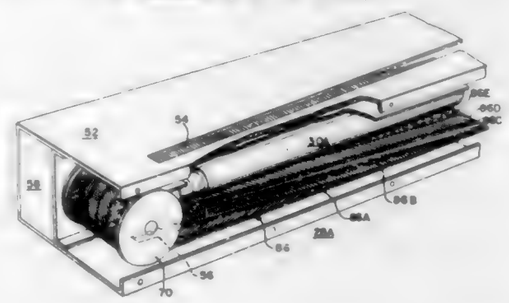
back again, the magazine being provided elements cooperating with a circuit to control the operation of the magazine and slide.

3,372,503
MAGNETIC SIGN
Murnie E. Weeks, 16660 NE. 12th St., Bellevue, Wash. 98004
Filed May 24, 1965, Ser. No. 458,090
3 Claims. (Cl. 40—125)



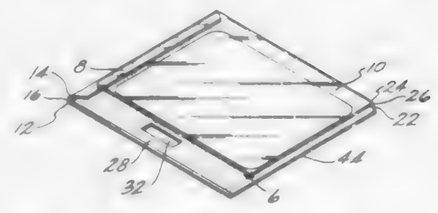
A rigid sign adapted to be attached by magnetism to any smooth surface exposed to a rapidly moving air current and supplementing the magnetism by creating a low-pressure condition upon the underside of the sign, the magnetism being obtained from strips of a magnetic material extending continuously along the peripheral margin of the sign excepting for a break which is provided in said strip along the rear edge.

3,372,504
ILLUMINATING APPARATUS
George K. C. Hardesty, P.O. Box 155, Mayo, Md. 21106
Continuation-in-part of application Ser. No. 245,720, Dec. 19, 1962. This application July 12, 1965, Ser. No. 471,019
15 Claims. (Cl. 40—130)



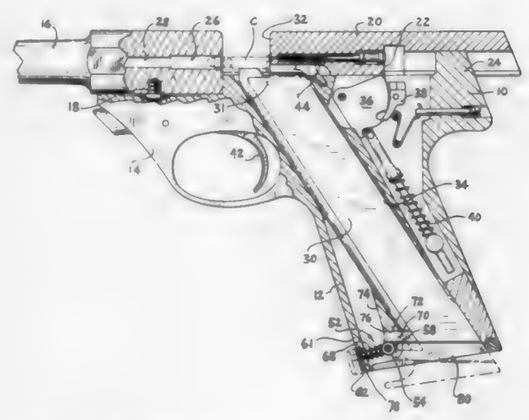
An illuminated display device is provided in which the obverse surface comprises a light conducting panel overlying the obverse side of a first reflector plate; and in which there is included a second reflector plate in spaced opposition with the first reflector plate; third reflector plates overlying either one edge or opposing edges of the light conducting panel and bridging the space between the first and second reflector plates; a light source between the first and second reflector elements, light from the source being injected into the light conducting panel by the third reflector plates; and radiant means such as indicia at the obverse side of the first reflector plate, receiving the light transmitted through the light conducting panel from the edge or edges thereof and directing the light outwardly through the obverse surface of the display device; and in which the light source is completely enclosed between the reflector plates to provide complete concealment of the light source. A changeable transmittance band light source is also provided in cooperation with selectively photoresponsive indicia at the obverse face of the first reflector plate in another embodiment of the invention.

3,372,505
HOLDER AND REGISTRATION DEVICE FOR TRANSPARENCIES FOR OVERHEAD PROJECTION
John S. Wright, 627 E. Birch Ave., Milwaukee, Wis. 53217
Filed Oct. 24, 1965, Ser. No. 504,700
5 Claims. (Cl. 40—158)



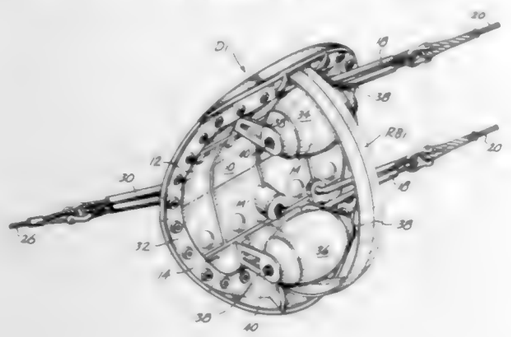
To register transparencies on the stage of an overhead projector, the holder integrally comprises a base sheet with upstanding flanges on contiguous margins, there being a narrow strip on one of said flanges and a cover sheet on another, the base sheet having framing opaque coating means and a slot spanned by pressure sensitive tape deformable through the slot for engagement with a projection stage for positioning the holder.

3,372,506
MAGAZINE CATCH FOR FIREARMS
Gary Wilhelm, Hamden, Conn., assignor to The High Standard Manufacturing Corporation, Hamden, Conn., a corporation of Connecticut
Filed May 13, 1966, Ser. No. 549,931
8 Claims. (Cl. 42—7)



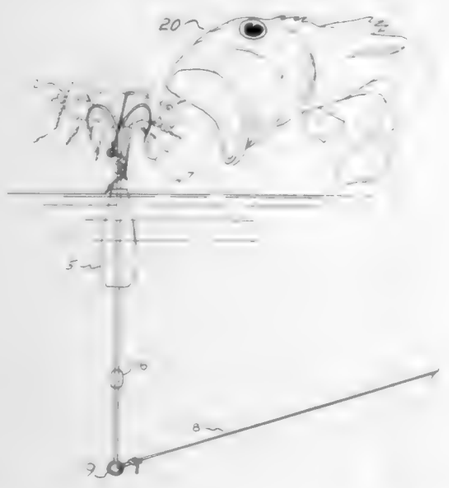
A catch for detachably securing a magazine in the grip of a hand gun or pistol. The catch, which is spring-urged, wedges the magazine against a positioning stop in the gun.

3,372,507
SELF-UPRIGHTING TRAWL DOORS
Frank J. Luketa, 5567 Greenwood Ave. N., Seattle, Wash. 98103
Continuation of application Ser. No. 393,139, Aug. 31, 1964. This application Jan. 30, 1967, Ser. No. 644,413
11 Claims. (Cl. 43—9)



A water reaction panel for trawl nets having ballast and buoyancy attachments and a roll bar mounted on the posterior side. The anterior side of the panel has a towing bridle and in some cases guiding vanes.

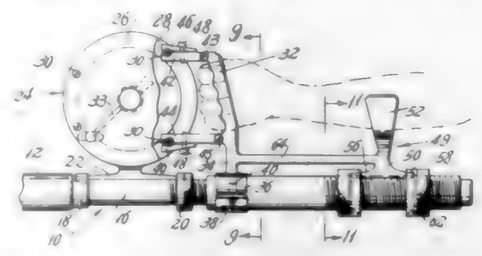
3,372,508
OUT-OF-THE-WATER FISHING LURE
Calvin C. Maglinger, 1430 St. Marys Ave., Owensboro, Ky. 42301
Filed June 28, 1965, Ser. No. 467,515
3 Claims. (Cl. 43—43.15)



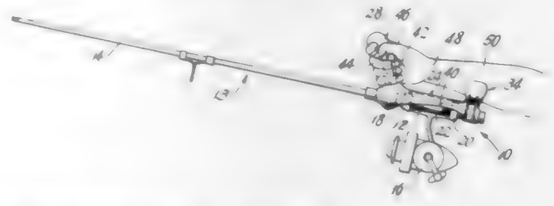
An out-of-the-water fishing lure for game fish uses undamaged live bait tied to a hook supported upon a float extension completely out of the water. The line is tied on a float extension under water to permit manipulation of the bait and use as a hand line without poles. Loss of bait by whip lash effect is eliminated by attachment of the hook to a stiff float extension.

3,372,509
FISHING ROD HANDLING DEVICE
Albert J. Arsenault, 430 Albert Ave., Stratford, Conn. 06497
Filed Oct. 19, 1965, Ser. No. 497,759
15 Claims. (Cl. 43—21.2)

A handling device for a fishing rod having conventional or suitable means for removably mounting a reel on the rod, in which an upwardly and slightly forwardly extending hand grip is mounted on the rod, the device having one or more arms directly and removably mounting and securing the hand grip to the reel. The hand grip may also be removably connected and secured directly to the handle of the rod and the connection may include an arm support mounted on and secured to the butt end portion of the rod.

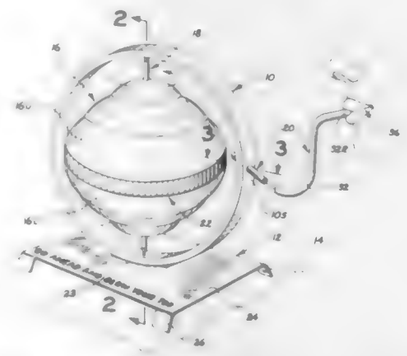


3,372,510
FISHING ROD HANDLING DEVICE
Albert J. Arsenault, 430 Albert Ave., Stratford, Conn. 06497
Filed Aug. 13, 1965, Ser. No. 479,583
3 Claims. (Cl. 43—21.2)



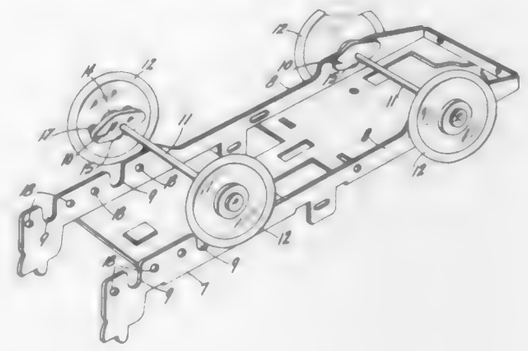
A handling device for fishing rods comprising a split sleeve which embraces and is releasably clamped to the handle of the rod and carries at opposite ends respectively upstanding hand grip and arm support portions and has a downwardly opening recess to expose therethrough, for manual access, conventional means on the rod handle for securing a reel to the underside of the rod handle, the hand grip and arm support portions each being formed of half sections integrally connected to corresponding half sections of the split sleeve.

3,372,511
AIR-JET-OPERATED TOY SPINNING TOP
Richard L. Smith and Frances L. Smith, both of 44037 N. Fig Ave., Lancaster, Calif. 93534
Filed June 7, 1965, Ser. No. 461,823
1 Claim. (Cl. 46—56)



The specification discloses a toy spinning top which is provided with a peripheral turbine means and an air-jet-producing means tangentially aligned with the turbine means so that an air jet produced by either blowing through the air-jet-producing means or by operating a collapsible bulb type of hand pump, or the like, will strike the turbine in a tangential manner and impart rotation to the toy top and cause it to spin in a mounting ring which carries a vertical pivot pin upon which the toy is mounted.

3,372,512
PLASTIC AXLE BEARINGS FOR USE ON TOY VEHICLES
Robert L. Cremer, Freeport, Ill., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Filed Dec. 28, 1965, Ser. No. 526,655
6 Claims. (Cl. 46—221)



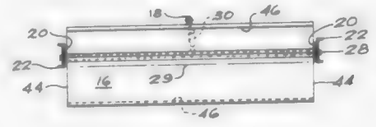
This plastic bearing is of flexible, resilient, material, circular in form, and open peripherally on one side a width less than the diameter of the axle to be entered from that side by spreading the bearing, the bearing member with the axle entered therein fitting closely in an opening of generally rectangular form provided in the bearing support with its entrance at one edge of the support to allow entry of an axle therein with the bearing member in place on the axle. The bearing member has lateral integral extensions in diametrically opposed relation on each of which is a stud integral therewith and extending at right angles thereto to be pressed into holes provided in the support with a tight friction fit to secure the bearing member in place, the studs each having a head on the outer end of larger diameter than the studs which when pressed through the holes in the support are compressed and upon emergence from the holes expand to their normal diameter to better secure the bearing member in place.

3,372,513
PROCESS FOR CONTROLLING PLANT GROWTH BY THE COMBINATION OF DIRECT SUNLIGHT AND REFLECTED COLORED LIGHT
Bernard Edward Shlesinger, Jr., Robert Edward Shlesinger, and Mary Kathleen Shlesinger, all of 3906 Bruce Lane, Annandale, Va. 22003
No Drawing. Filed Apr. 20, 1966, Ser. No. 543,781
1 Claim. (Cl. 47—58)

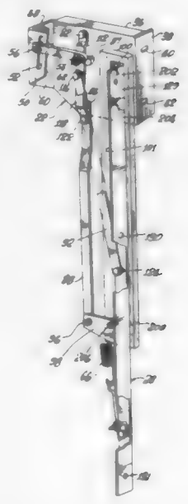
A method for controlling the speed of stem elongation of growing plants shortly after germination including the steps of exposing the germinated plants and the area about the plants to direct solar light and placing in the area about the plants deflecting material so as to produce at least a visually noticeable amount of reflected color light on the plants and controlling the total amount of light on the plants by varying the amount and proximity of the reflecting material.

3,372,514
SIDE SEALING MEMBERS FOR OPERATING LOUVER ASSEMBLIES
William E. Adams, Wexford, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 6, 1965, Ser. No. 493,366
5 Claims. (Cl. 49—91)

An operating louver assembly of the type having a plurality of louver blades pivotally supported in a frame and having means for moving the louver blades between open and closed positions. Infill plates formed from a flexible material such as Phosphor bronze, are interposed between the end edges of the louver blades and the frame for sealing the spaces between the frame and the blade end edges to minimize light leaks and to further minimize the ingress of wind, rain, snow and debris into the interior of the building.

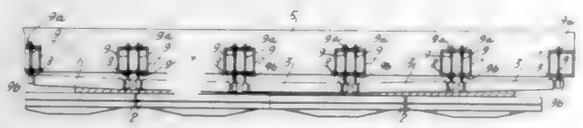


3,372,515
OVERHEAD DOOR HINGED SUSPENSION
Donald D. Andresen, 24900 Santa Clara St., Hayward, Calif. 94544
Filed July 29, 1966, Ser. No. 568,822
13 Claims. (Cl. 49—205)



2. In an overhead swinging door suspension, apparatus comprising:
- a door jamb attachment body for attachment to a substantially vertical door jamb intermediate the top and bottom ends thereof;
- a door attachment bracket for attachment to a door intermediate the top edge and bottom edge thereof;
- a first elongated hinge arm pivotally attached at one end to said body at a first pivot point and pivotally attached at the opposite end to a second pivot point carried by said attachment bracket;
- a pair of scissor links pivotally interconnected at adjacent ends thereof by a common, floating pivot means and having one opposite end of one of said links pivotally connected to said body at a third pivot point, upwardly spaced from said first pivot point, and having the other, opposite end of the other of said links pivotally connected to said first hinge arm at a fourth pivot point adjacent to but spaced a distance longitudinally of said first hinge arm from said first pivot point toward said second pivot point; and
- a second elongated hinge arm pivotally attached at one end thereof to said common, floating pivot means of said pair of scissor links, and pivotally connected at the opposite end thereof to said bracket at a fifth pivot point, said second pivot point and said fifth pivot point being spaced-apart longitudinally of the axis of said attachment bracket.

3,372,516
PRESSURE ROLLERS FOR GLASS RIBBON POLISHING MACHINE
George Alfred Dickinson and Thomas Stanley Cook, St. Helens, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Filed Aug. 21, 1964, Ser. No. 391,183
Claims priority, application Great Britain, Aug. 29, 1963, 34,259/63
9 Claims. (Cl. 51—110)

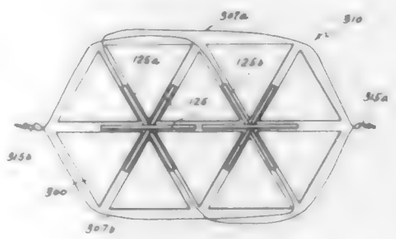


1. Apparatus for imparting a substantially uniform surface to flat glass comprising power-driven surfacing tools disposed to operate on one face of the glass, and oppositely disposed pressure means comprising a plurality of transverse series of rollers, and an adjustable mounting for at least one roller in each transverse series of rollers, said mounting including individually adjustable means at each end of that roller permitting adjustment of each end of that roller relative to at least one other roller in the same series in a plane perpendicular to the plane of the glass.

3,372,517
CONTROL SYSTEM FOR THE COMPARATIVE REGULATION OF THE DIAMETERS OF A PAIR OF WHEELS
Mitsugu Sakabe, Suita-shi, Hajime Shiomi, Osaka-fu, and Seiuemon Inaba, Kawasaki-shi, Japan, assignors of one-third each to Nippon Kokuyu Tetsudo (known in English as Japanese National Railways), Tokyo-to, Kaisha Seizo Kaisha, Ltd., Tokyo-to, a corporation of Japan, and Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Dec. 29, 1965, Ser. No. 517,266
10 Claims. (Cl. 51—165)

1. A control system for the comparatively regulation of the diameters of a pair of wheels, comprising
mounting means rotatably mounting first and second wheels, each of said wheels having a peripheral surface and a diameter;
first pulse producing means positioned in operative proximity with said first wheel for producing a first number of pulses corresponding to the diameter of said first wheel;
second pulse producing means positioned in operative proximity with said second wheel for producing a second number of pulses corresponding to the diameter of said second wheel;
comparator means connected to said first and second pulse producing means for producing an output corresponding to the difference between said first and second number of pulses, said output having a polarity determined by which of said first and second wheels has the larger diameter and comprising a number of pulses;
first grinding means for grinding the peripheral surface of said first wheel;
second grinding means for grinding the peripheral surface of said second wheel;
pulse generating means for producing pulses for energizing said grinding means; and
control means connected to said comparator means, said first and second grinding means and said pulse generating means for supplying pulses corresponding in number to the output of said comparator and produced by said pulse generating means to one of said first and second grinding means selected in accordance with the polarity of the output of said comparator.

3,372,518
STRUCTURAL UNIT AND STRUCTURE INCORPORATING SAME
Eberhard G. Rensch, Lerchesbergring 12, Frankfurt am Main, Germany
Filed Sept. 18, 1963, Ser. No. 309,777
Claims priority, application Germany, Sept. 22, 1962, R 33,553; Nov. 2, 1962, R 33,801, R 33,802; Dec. 22, 1962, R 34,134; May 2, 1963, R 35,073; May 9, 1963, R 35,135
7 Claims. (Cl. 52—227)

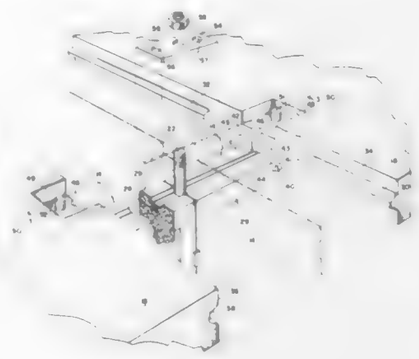


5. A structural unit comprising a substantially horizontal slab with a coherent major portion of polygonal outline composed of a plurality of edgewise adjoining coplanar plates in the shape of isosceles triangles, a multiplicity of said coplanar plates having corners at a common connection point, said plates constituting a coherent major portion of the slab and being provided with peripheral recesses forming channels within the slab at their junctions; flexible tie means securing said plates with adjoining edges in shear-resisting load-bearing relationship, said tie means peripherally surrounding said plates for holding them in contact with one another, said tie means including a plurality of loops overlappingly extending through different ones of said channels and along complementary portions of said outline; a column supporting said slab at said common connection point; and coupling means securing said column to each of said corners of said plates at said common connection point, thereby fastening said column to said slab.

3,372,519
INTERSECTING, MODULAR BARRIER CLAMP JOINT
Gordon C. Russell, Studio City, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Oct. 23, 1965, Ser. No. 503,096
2 Claims. (Cl. 52—274)

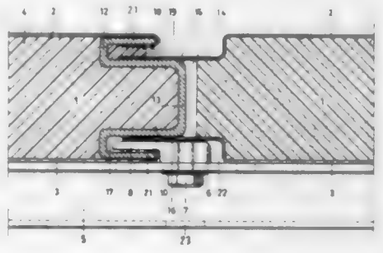
A building construction having a plurality of abutting vertical wall panels and a series of horizontal roof panels

with a plurality of locking plates being secured to reinforcing rods, extending through the roof panels, and



tie rods, extending through the wall panels, to tie the adjacent roof panels together and to secure the roof panels to the wall panels.

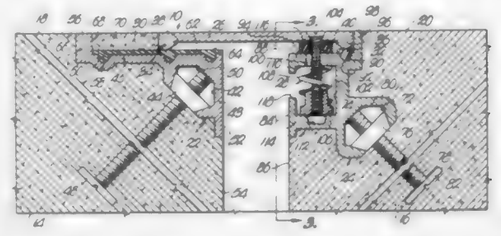
3,372,520
TONGUE AND GROOVE INSULATED PANELS AND DEMOUNTABLE BARRIER CONSTRUCTION THEREOF
Erich E. Hensel, The Hague, Netherlands, assignor to Hunter Douglas International Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed July 19, 1965, Ser. No. 473,067
Claims priority, application Netherlands, July 24, 1964, 64—8,540
8 Claims. (Cl. 52—483)



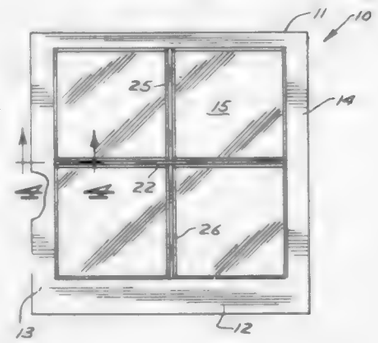
Building elements which are assemblable with each other to form walls, ceilings, etc., comprising spaced apart skins having a filling therebetween, one longitudinal end of each element having a double U-shaped insert gripped between said skins and said skins at the other longitudinal end of each element being formed as longitudinally extending tongues which are engageably receivable within groove portions of said double U-shaped insert in an adjoining one of said elements, said assemblage being effected by the use of carriers having fastening members which rotate to engage said grooves thereby clamping said building elements to said carriers.

3,372,521
FLOOR JOINT COVER ASSEMBLY
Wenzel W. Thom, Wichita, Kans., assignor of one-half to Cecil D. Jones, Wichita, Kans.
Filed June 2, 1965, Ser. No. 460,654
12 Claims. (Cl. 52—395)

A floor joint cover assembly having a cover plate resiliently mounted on one anchor member with a bolt and spring so as to bias the cover plate against the other anchor member closing the joint and allowing the cover plate to pivot or move vertically on the anchor member. The cover plate presses against a resilient material providing a flat surface regardless of the relative positions on the structural sections.

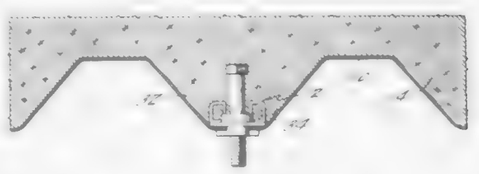


3,372,522
DETACHABLE GRILL ASSEMBLY FOR WINDOW SASH
John P. Engstrom, Minneapolis, Minn., assignor to J.J.J. Specialty Co., Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 11, 1966, Ser. No. 571,875
1 Claim. (Cl. 52—456)



A detachable sash grill assembly comprising a spring-like angled clip having a self holding portion inserted into an end of a grill bar and a toothed portion biting into an adjacent sash portion.

3,372,523
STRUCTURAL FASTENERS
William H. Hall, Jr., West Hartford, Conn., assignor to Structural Fasteners, Inc., West Hartford, Conn., a corporation of Connecticut
Filed June 13, 1966, Ser. No. 557,309
11 Claims. (Cl. 52—699)



1. A structural fastener insert for use with a corrugated building form having holes through the floors of the valleys between sloping walls of the corrugations, such holes being adapted for the insertion of the insert therethrough, the insert comprising:
a load supporting member, said load supporting member having a head section and a fastening section, at least part of said head section being other than circular in cross section, said fastening section extending from said head section;
attachment means in said fastening section for enabling an article to be supported from said fastening section;

a washer element having a major and a minor axis mounted on said load supporting element, said major axis being greater in length than the width of the floors of the valleys between the sloping walls of the corrugations;

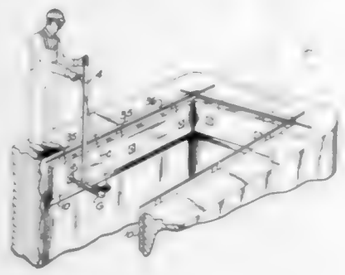
said fastening section passing through one of said holes in a valley floor in said corrugated building form and extending from said building form on one side thereof in an installed position of said load supporting element; said washer element and said head section extending from the other side of said building form in said installed position, and

locking means on said load supporting member, said locking means being on said one side of said building form in said installed position and preventing withdrawal of said load supporting member, and said major axis of said washer extending across said valley and engaging the sloping walls of a corrugation in said installed position of said load supporting element.

3,372,524
INSULATION PANEL AND FASTENER ASSEMBLY AND METHOD

Walter M. Charman, Jr., Shaker Heights, and John Eugene Jackson, Beachwood, Ohio, assignors to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,808
1 Claim. (Cl. 52—747)



1. A method of attaching a heat insulation panel to the inside of an upstanding wall of an ingot mold which comprises the steps of:

positioning against the inside of said wall a heat insulation panel having fastener pins pre-set therein with their head ends projecting from the face of the panel away from said wall;

telescoping over the head end of each pin the muzzle of an explosive-powder-actuated impact tool having a trigger for firing an explosive charge and a trigger-control element extending away from the trigger outside of the ingot mold;

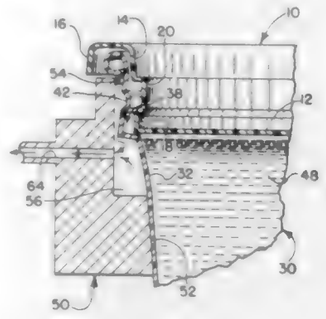
and actuating said trigger-control element outside of the ingot mold to fire the tool to drive said fastener pin into said wall of the ingot mold.

3,372,525
METHOD OF APPLYING A CLOSURE TO A FILLED CONTAINER

Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Dec. 29, 1965, Ser. No. 517,286
6 Claims. (Cl. 53—40)

1. The method of assembling a lid member having a radially outwardly projecting locking bead within an open upper end of a flexible container body provided with a radially inwardly extending locking projection of smaller minimum diameter than the maximum diameter of the lid locking bead, comprising the steps of radially enlarging the locking projection of said flexible container body a predetermined amount greater than the maximum diameter of the lid locking bead, relatively assembling the lid member and container body to each other and positioning the lid locking bead axially beneath the locking



projection of said container body, and thereafter causing the flexible container body in the vicinity of its locking projection to return to its unstressed state and thereby enable said locking projection to overlie and engage the lid locking bead for retaining said lid member assembled to said container body.

3,372,526
WRAPPING MECHANISM

Andrew W. Anderson, Caldwell, N.J., assignor to Scandia Packaging Machinery Company, North Arlington, N.J., a corporation of New Jersey

Filed Jan. 22, 1965, Ser. No. 427,383
6 Claims. (Cl. 53—230)

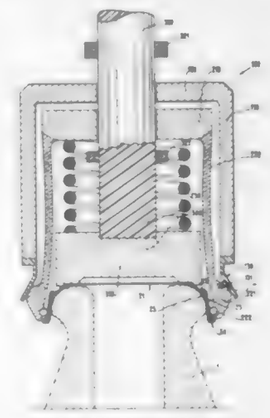
A machine is provided for applying a wrapper around an article to have wrapper flaps protruding from the article. Spring-loaded discs then engage an upper or outer one of the flaps at each end and tighten the flaps and wrapper about the article.

3,372,527
CAP CRIMPING TOOL

Armando Podesta and Carlo Vignati, Milan, Italy, and Andre Bereziat, Lyon, France, assignors to L'Aluminium Francais, Paris, France

Filed Nov. 23, 1965, Ser. No. 509,376
Claims priority, application France, Nov. 24, 1964, 996,102, Patent 1,423,880
8 Claims. (Cl. 53—358)

1. A tool for crimping a cap onto the beaded or grooved mouth of a container in which the cap is a sheet member having a central body portion, an intermediate expandable portion extending outwardly from the body portion, a skirt portion depending from the outer edge of the intermediate portion and a bead on the end of the skirt, said crimping tool comprising the combination of a stationary outer sleeve section, a pusher assembly and an annular punch mounted intermediate the sleeve section and the pusher assembly, said sleeve section comprising a cylindrical section having a crosswise dimension greater than the crosswise dimension of the cap and having a frusto-conical section adapted to be in crosswise alignment with the cap but spaced outwardly therefrom in position of use, said pusher assembly comprising a pusher plate located within the cylindrical section of the sleeve section and contoured at its bottom side to engage the cap and a rod connected to the top side of the pusher plate and mounted for axial displacement relative the sleeve section, said annular punch comprising a supporting ring and a plurality of resilient blades depending from the periphery of said ring in side by side relationship between said cylindrical section and said pusher plate with each of the blades having an outwardly extending bulbous portion forming a collar in crosswise alignment with the frusto-conical section of the cylindrical section when in position of use and a seat on the inner surface and a resili-



ent coil spring mounted in said seat in crosswise alignment with said collar and in which the annular punch is mounted on the rod for axial sliding movement thereon relative to the sleeve section and the pusher assembly, means on the rod for engagement with said annular punch when in raised position and for engagement with the sleeve section when in lowered position thereby to define the limits of movement of said pusher assembly and punch relative to the sleeve section, and means constantly urging said punch in the direction away from the pusher plate towards raised position.

3,372,528
METHOD OF AND APPARATUS FOR THE REMOVAL OF DUST FROM CONVERTER AND OTHER EXHAUST GASES

Hans Hoff, Essen, Germany, assignor to Firma Gottfried Bischoff KG. Bau Kompletter Gasreinigungs- und Wasserruckkuhlanlagen, Essen, Germany, a corporation of Germany

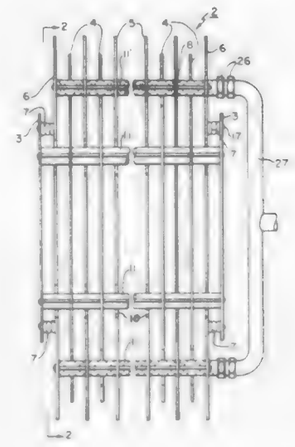
Filed July 13, 1966, Ser. No. 564,983
Claims priority, application Germany, July 15, 1965, H 56,593
2 Claims. (Cl. 55—106)

A dust-removal system for eliminating dust from the hot gases emerging from the steel-making converter wherein a stack delivers partially cool exhaust gas to a gas-washing column which may be bypassed by a conduit opening upwardly in this column into the downwardly turned end of a pipe carrying the washed gases to an electrostatic filter. A temperature-responsive control system detects the gas temperature at the entrance to the electrostatic filter and operates a valve member cooperating with the upwardly turned end of the bypass conduit to regulate the amount of hot exhaust gas mixed with the washed gas to maintain the gas temperature at the entrance to the electrostatic filter substantially constant.

3,372,529
PLATE ELECTRODE ASSEMBLY FOR ELECTROSTATIC PRECIPITATOR

John D. Harms, Milwaukee, Wis., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Kentucky

Filed Sept. 8, 1966, Ser. No. 578,052
3 Claims. (Cl. 55—118)

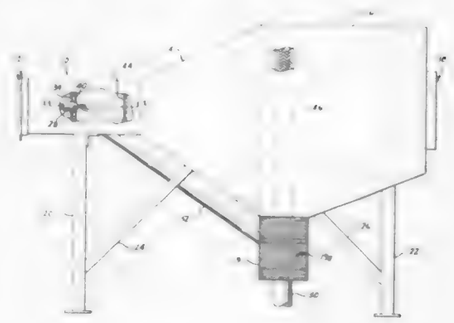


A plate electrode assembly for electrostatic precipitators wherein the precipitator plates are spaced from each other by inwardly positioned spacer bars having hollow passage means extending along the longitudinal axis thereof in communication with fluid supply means to permit fluid treatment of the plates.

3,372,530
AIR CLEANER

Walter H. Zimmer, Galesburg, Ill., assignor to Antipol Corporation, Galesburg, Ill., a corporation of Illinois

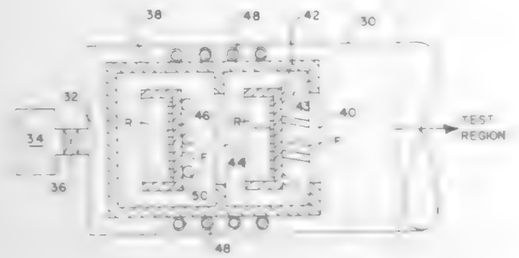
Filed Mar. 21, 1966, Ser. No. 536,018
3 Claims. (Cl. 55—257)



A water spray diverges downstream from a spray nozzle located at the longitudinal centerline of a duct to wet a stream of air carrying particles in the duct. A rectangular frame having knife edges at its inner periphery surrounds the spray nozzle and the inner walls of the duct downstream from the rectangular frame are washed by another water spray from a circular conduit located immediately downstream from the frame. The wetted air is cleaned by a precipitator panel and dried

upon expansion in a settling chamber and by passing through a demister panel. The water and particles are collected by a bin adjacent the settling chamber.

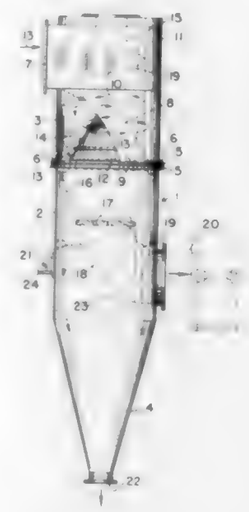
3,372,531
VACUUM DEVICE
Mitchell O. Hoenig, Wayland, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Sept. 8, 1964, Ser. No. 394,752
6 Claims. (Cl. 55—269)



1. A structure for use as a cryosorption vacuum pumping element, or the like, comprising a solid metal supporting member and a thin layer of individual particles of a porous substance disposed along the surface of said member, the individual particles having metal coatings thereon and being secured to the member by an intermetallic bond through said coating, the individual particles being abraded and bare of coating along portions thereof facing away from the supporting member, whereby gas or vapor can diffuse into said particles through said bare portions, and means for cooling said supporting member to cryogenic temperature and thereby cooling the particles to cryogenic temperature by heat transfer via said intermetallic bond.

3,372,532
DRY SEPARATOR
Charles Langdon Campbell, Houston, Tex., assignor to Centrifix Corporation, Houston, Tex., a corporation of Ohio
Filed Aug. 17, 1965, Ser. No. 480,382
1 Claim. (Cl. 55—394)

1. A vertical downflow dry centrifugal separator comprising an upper cylindrical chamber receiving a particulate laden carrier fluid, a carrier fluid inlet passage in the side wall of said upper chamber and tangential to the cylindrical wall of said upper chamber and imparting an initial whirling movement to the laden fluid passing through said inlet and into said upper chamber, said chamber being closed at its top end, a spool depending into said upper chamber from said closed top end and coaxial with said upper chamber, a bladed generally conical tuyere having whirl-inducing louvres, each inclined with respect to the generally conical surface of said tuyere and supported in said upper chamber below said spool and spaced apart from the walls of the upper chamber with its apex portion adjacent and below said inlet for imparting a whirling movement to the laden fluid entering the chamber from the inlet and passing through the bladed tuyere, the base portion of the tuyere being disposed below the tuyere apex, an annular outwardly and laterally extending flange on the lower end of said upper chamber, and a cylindrical intermediate chamber having the same diameter as said upper chamber and having an annular outwardly and laterally extending flange formed on the upper end thereof, support means supporting the base of said tuyere within and at the lower end of said upper chamber, means securing said flanges together, said intermediate chamber being in communication with the upper chamber through said tuyere, a lower discharge hopper sealingly connected at all points of its upper periphery to the lower periphery of said intermediate chamber and having downwardly converging walls substantially throughout its length and in communication at its upper end with said intermediate chamber and receiving and discharging particulate matter separated from the carrier fluid and terminating at its lower end in a discharge opening, said upper and intermediate chambers, said tuyere, said hopper, said discharge opening and said spool all being arranged in vertical axial alignment, a cylinder supported coaxial with and within said intermediate chamber having its upper end spaced vertically below the base of said tuyere and spacrd throughout its length from the interior surface of the wall of the intermediate chamber and providing an annular passage between the outer surface of said cylinder and the inner wall



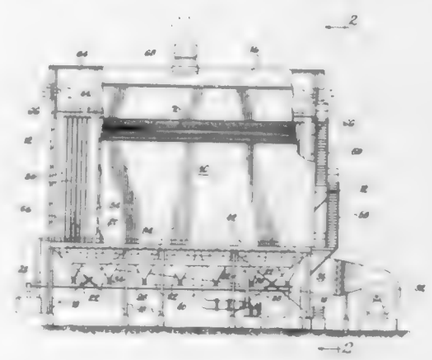
of said intermediate chamber which receives and directs particulate matter separated from the carrier fluid in passing through said tuyere to said discharge hopper, a substantially right angle elbow outlet conduit in the intermediate chamber receiving the unladen carrier fluid passing from the base of the tuyere into the last named chamber, the upper inlet portion of said conduit being in vertical axial alignment with and spaced below the base of the tuyere and above the lower end of said cylinder with the conduit outlet portion extending through a side wall of the said intermediate chamber, an annular series of vortex breaking whirl blades on the exterior surface of said outlet conduit adjacent the said inlet portion thereof and extending outwardly and toward said cylinder, said blades terminating short of the side walls of the cylinder and encompassed therewithin, and means operatively connected to said separator for imparting movement to the carrier fluid through said separator.

3,372,533
SELF-SUPPORTING HIGH DENSITY FILTER
Raymond W. Rummel, Long Beach, Calif., assignor to Farr Company, El Segundo, Calif., a corporation of California
Filed July 11, 1966, Ser. No. 564,174
8 Claims. (Cl. 55—499)

A high density air filter where the sheet type filter media is spaced and supported upon itself in a housing by employing a multiplicity of longitudinally pleated sheets of media stacked in zig-zag relationship with the opposite longitudinal ends of each sheet in nesting abutment with and sealed to one longitudinal end of each of the adjacent sheets on either side and with the other ends of the adjacent sheets supported in spaced relation by attached spacer strips to form longitudinally converging

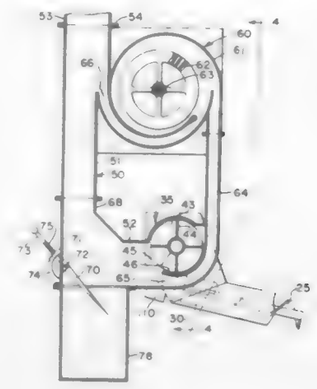
and diverging passageways between pairs of sheets for the air to flow longitudinally into converging passageways, through one or the other of the sheets, and then out through the diverging passageways.

3,372,534
BAGHOUSE CONSTRUCTION
David M. Hysinger, Paris, France, and Fredrick A. Lindahl, Novelty, Ohio, assignors to The Wheelabrator Corporation, Mishawaka, Ind., a corporation of Delaware
Filed Sept. 14, 1965, Ser. No. 487,129
4 Claims. (Cl. 55—341)



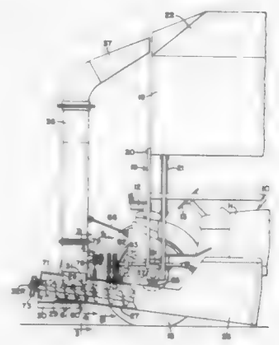
1. In a baghouse construction comprising a housing having upwardly extending walls, a lower cell plate floor and an upper tube suspension floor extending between said walls, a plurality of flexible filter tubes closed at the top and vertically supported between said floors in operative position and means for directing particle containing gases through the walls of said tubes for removal of said particles by means of a filtering process, the improvement comprising an attic located above said suspension floor, said suspension floor being substantially imperforate whereby the atmosphere in the attic is separated in substantially sealed relation from the atmosphere in the tube section between the floors, inlet and outlet means in communication with the space between the floors for the passage of gases to and from the filter tubes, separate inlet and outlet means connected with the attic for the passage of amospheric air therethrough, fans for circulating said atmospheric air from the separate inlet to the outlet through the attic, means extending into the attic releasably suspending the upper end portions of the filter tubes for raising and lowering the filter tubes to and from operative position, and including walkways located on said cell plate floor and on said suspension floor between rows of tubes whereby workmen can stand on said floors, and means for securing a cable to the upper end of a tube whereby the tube can be lowered to said cell plate floor for maintenance and replacement.

3,372,535
COTTON HARVESTER
Myron L. McCunn, Dallas Center, and Ronald K. Leonard, Madrid, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 15, 1965, Ser. No. 439,542
14 Claims. (Cl. 56—12)



A cotton harvester comprising a tractor portion; harvesting mechanism on opposite sides of the tractor portion for harvesting cotton; a pair of augers for each harvesting mechanism for moving the harvested cotton rearwardly; flipper blades on the rear ends of the augers for elevating cotton; a transverse auger housing extending across the tractor portion having material inlets for receiving cotton from the flippers and a central outlet; auger flight means within the housing for moving the cotton from the inlets to the outlet; conduit means having an intake end at the outlet and a remote discharge end; and blower means having a blower outlet at the intake end of the conduit means and a blower outlet opening into the conduit means at a distance from the inlet and directed toward the discharge end.

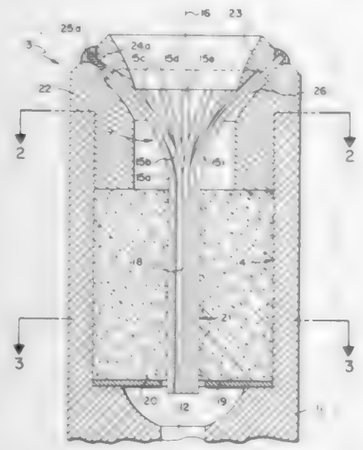
3,372,536
COTTON HARVESTER
Myron L. McCunn, Dallas Center, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 438,848
14 Claims. (Cl. 56—12)



A discharge means for a cotton harvester comprising an elongated housing mounted adjacent the harvesting mechanism so as to receive cotton bolls removed by the mechanism from cotton plants, the housing having a ripe boll outlet and a green boll outlet, a conveyor within the housing moving bolls first by the ripe boll outlet and from thence to the green boll outlet; a duct extending from the housing and in communicating relation with the

ripe boll outlet; a blower having an outlet opening into the duct in offset relation to the ripe boll outlet and directed away from the latter to effect suction of the ripe bolls through the ripe boll outlet; and a green boll container for receiving the greener bolls gravitating from the green boll outlet.

3,372,537
RADIALLY CLAMPING GRIPS
Maurice Poull, 41 Ave. de Vaudagne, Meyrin, Geneva, Switzerland, and Erwin Zurcher, 10 Rue Liotard, Geneva, Switzerland
Filed Dec. 21, 1966, Ser. No. 603,627
5 Claims. (Cl. 57—59)

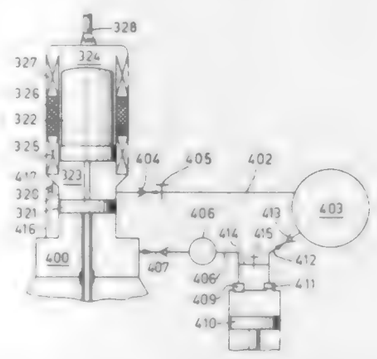


This invention concerns a gripping device that includes a body having a central bore and a plurality of flexible filaments secured in the central bore. The flexible filaments form a bow-net and the narrow end of the bow-net is extended to form a bundle of filaments. The gripped object enters the gripping device through the bow-net and a uniform radial clamping force is exerted over the periphery of the gripped object as it is allowed to move axially. Provision is also made for damping out any vibratory effects generated by any irregularities in the diameter of gripped object as it moves through the filament bundle. Preferably the gripping device is adapted to rotate and is especially useful in spinning textile fibers into threads.

3,372,538
EXPANSIBLE LINK BRACELET
Cheng Chow, Flat 1002, E. Terrace, Sai Wan Chuen, Hong Kong, and Mak Fan, 369 Ki Lung St., 5th Floor, Kowloon, Hong Kong
Filed Oct. 20, 1965, Ser. No. 498,776
Claims priority, application Great Britain, Mar. 12, 1965, 10,681/65
6 Claims. (Cl. 59—79)

1. An expansible link bracelet comprising at least two links, and a connecting member joining said links, mountings for a pair of torsion springs in one of the links, a pair of torsion springs mounted thereon with one end secured and the other free, tongues on sides of said connecting member, one of which is engaged with the free ends of the torsion springs and the other with an adjacent link, said torsion spring mountings being located laterally offset from the path of the tongue of said connecting member engaging the free ends of the torsion springs, there being one mounting on each side of the tongue, whereby the torsion springs and mountings do not reduce the effective expansion of the bracelet.

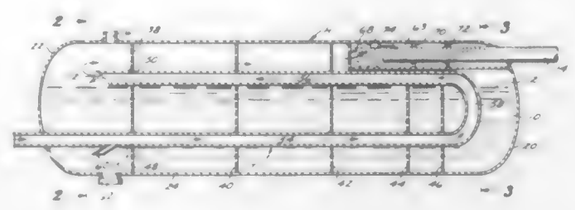
3,372,539
HOT-GAS RECIPROCATING ENGINE
Jacobus Pieter Reinhoudt, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,673
Claims priority, application Netherlands, July 19, 1965, 65—9,299
5 Claims. (Cl. 60—24)



1. An apparatus including a hot-gas reciprocating engine provided with a working space and a working medium therein, comprising a compressor, a storage container for said working medium communicating with the working space of said engine, said communication being an inlet duct provided with a first check valve, a medium outlet duct provided with a second check valve communicating at one end with said working space and at the other end with an inlet aperture of said compressor, a first duct between said storage container and the outlet aperture of said compressor including a third check valve, a second duct communicating with said first duct and with said medium outlet duct between said inlet aperture of said compressor and said second check valve, a controllable valve arranged in said second duct, said controllable valve being closed when the quantity by weight of said medium in said working space decreases and otherwise being open, the medium outlet duct having such a volume that when said controllable valve is open substantially no pressure variations occur therein.

3,372,540
APPARATUS FOR PREVENTING DISCHARGE OF CONTAMINANTS FROM THE ENGINE OF AN AUTOMOTIVE VEHICLE
Jess H. Birdwell, 5476 Linden Ave., Apt. 7, Long Beach, Calif. 90805
Filed June 27, 1966, Ser. No. 560,496
7 Claims. (Cl. 60—30)

1. Apparatus for preventing discharge of exhaust gas contaminants from an internal combustion engine, comprising:
- a housing;
- a body of water in said housing;
- an exhaust gas tube extending through said housing, the discharge end of said exhaust gas tube normally being arranged above the level of said body of water;
- an induction tube positioned on a submerged portion of said exhaust gas tube whereby flow of exhaust gas through said exhaust gas tube will induce the flow of water into said exhaust gas tube; and



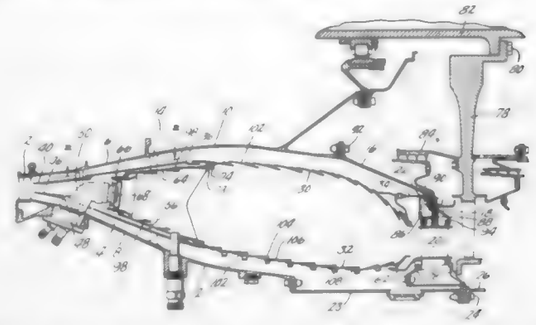
- a tailpipe extending from said housing above the level of said body of water.

3,372,541
GAS TURBINE ENGINE COMBUSTION CHAMBER
Herbert Frank Smith, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed June 9, 1966, Ser. No. 556,420
Claims priority, application Great Britain, June 21, 1965, 26,207/65
12 Claims. (Cl. 60—39.65)

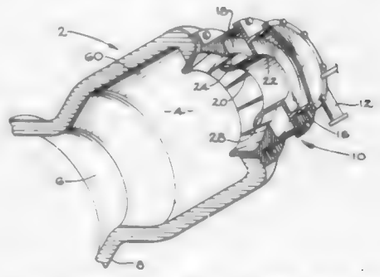
A gas turbine engine has an annular combustion chamber and flame tube which is disposed outwardly of the compressor outlet and turbine inlet, the combustion chamber being inclined in a downstream direction so that it is disposed radially outwardly of the turbine. Part of the air leaving the compressor is directed into the combustion chamber, while the remainder, constituting dilution air, passes directly across the radially inner part of the combustion chamber without substantial change of flow.

3,372,542
ANNULAR BURNER FOR A GAS TURBINE
Edward B. Sevetz, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 596,978
11 Claims. (Cl. 60—39.69)

An annular burner construction for a gas turbine engine in which the burner inlet extends forwardly into the diffuser and includes a pair of diverging walls between which the fuel nozzle is located. Each nozzle is surrounded by a burner cup and the several cups are attached together to form an annulus positioned in and spaced from the diverging walls. Extending downstream from the ends of the diverging walls are the inner and outer walls of the flame annulus and these are held against axial movement within the outer combustion chamber walls.



3,372,543
THROTTLING INJECTOR
Dwight I. Baker, Woodland Hills, Calif., assignor to North American Aviation, Inc.
Continuation of application Ser. No. 402,064, Oct. 5, 1964. This application June 17, 1966, Ser. No. 558,549
6 Claims. (Cl. 60—39.74)



1. A device for supplying fluid to a gas producing chamber comprising:
- an injector,
- means forming a first annular chamber in the injector, said chamber having a fluid inlet,
- first lip means connected to and extending radially inward of said first chamber,
- a first fluid line terminating in a section connected to and aligned tangentially with said first chamber,
- first throttling means including a flapper valve positioned between said first chamber and said first fluid line section for varying the size of the opening of said chamber fluid inlet,
- a second annular chamber formed with a fluid inlet, said second chamber being concentric with and adjacent to said first annular chamber,
- second lip means connected to and extending radially inwardly of said second chamber,
- a second fluid line terminating in a section connected to and aligned tangentially with said second chamber,
- second throttling means including a flapper valve positioned between said second chamber and said second fluid line section for varying the size of the opening of said second chamber fluid inlet,
- interconnecting means for interconnecting said flapper valves,
- actuator means linked to said interconnecting means for simultaneously varying the sizes of the openings of the fluid inlets,
- means for passing fluid through said first throttling means into said first chamber where under swirling action the fluid flows over said first lip means and,
- means for passing fluid through said second throttling means into said second chamber where under swirling action the fluid flows over said second lip means

and mixes and combusts with the fluid flowing over said first lip means in said gas producing chamber.

3,372,544
MEANS FOR PRESETTING AND TESTING A DESIRED PRESSURE LIMIT FOR HYDRAULICALLY REGULATED REFINER

Robert B. Kirkwood, Portland, Oreg., assignor to Morden Machines Company, Portland, Oreg., a corporation of Oregon

Filed Aug. 15, 1966, Ser. No. 572,343
2 Claims. (Cl. 60—52)

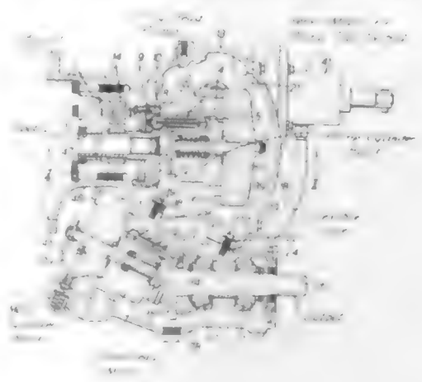
1. In a hydraulic system for positioning an axially-adjustable element in a fibrous material refining machine by the maintenance of a desired constant pressure, a double-acting hydraulic cylinder, a hydraulic pump and pump motor, a flow control valve in the hydraulic lines for said cylinder, a pressure relief valve and a pressure gauge in the delivery line between said pump and said flow control valve, a control element for setting said pressure relief valve, electric means for selectively moving said flow control valve from neutral closing-off position, switch means controlling the operation of said electric means and controlling a main circuit to said pump motor so arranged as to close said circuit to said pump motor whenever said control valve is moved from neutral closing-off position by said electric means, and associated testing switch means for closing a circuit to said motor while said electric means is inactive and said control valve is in neutral closing-off position, whereby the utilization of said testing switch means will cause said pump temporarily to be operated while said flow control valve is maintained in said neutral closing-off position, thereby enabling the pressure in the hydraulic fluid delivery line between said pump and said flow control valve to build up quickly for the setting of said pressure relief valve and the establishing of maximum pressure for the entire system in advance of activating the system.

3,372,545
HYDRAULIC APPARATUS

David J. Hyde, Cheltenham, England, assignor to Dowty Technical Developments Limited, Brockhampton, Cheltenham, England, a British company

Filed Feb. 7, 1966, Ser. No. 525,662
Claims priority, application Great Britain, Feb. 10, 1965, 5,716/65
6 Claims. (Cl. 60—53)

A hydrostatic power transmission is disclosed which comprises a pair of relatively movable pump and motor casings having mutually adjacent machined surfaces on the exteriors thereof which are adapted to be abutted in surface-to-surface engagement with one another, fastening means applied between the surfaces and detachably interconnecting the casings with one another, to secure them against relative movement while the transmission is in use, and positive displacement hydraulic pump and



motor means mounted within the interiors of the pump and motor casings, respectively, in hydraulic connection with one another to transmit power between the input and output thereof.

3,372,546
METHOD OF OPERATING A ROCKET ENGINE USING HEAT EXCHANGE WITH HYDROCARBON FUELS

George B. Arnold, Fishkill, and Robert Y. Heisler, Herbert E. Vermillion, and Alfred Arkell, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

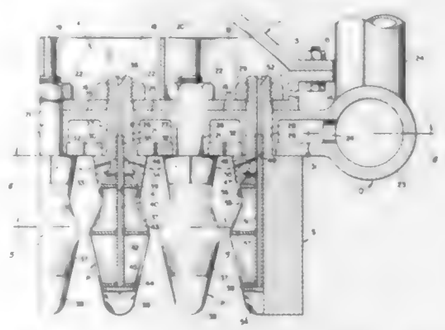
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,488
3 Claims. (Cl. 60—206)

1. A method of operating a rocket engine on a high energy hydrocarbon-oxidizer propellant, said rocket engine having a combustion zone and a heat exchanger in heat exchanging relationship to the walls of said combustion zone, the improvement which comprises employing a hydrocarbon, from the class consisting of tetraisobutylene, triisobutylene and diisobutylene, and a fluorine-oxygen-containing oxidizer containing at least one atom of oxygen for every carbon atom in said hydrocarbon, and passing at least a portion of said hydrocarbon through said heat exchanger under conditions causing substantial depolymerization of said hydrocarbon to isobutylene effective to remove at least 900 B.t.u.'s for each pound of said hydrocarbon that is depolymerized and thereafter burning said depolymerized hydrocarbon with said oxidizer in said combustion zone.

3,372,547
MULTIPLUG ROCKET ENGINE

Donald A. Eberwine, Aurora, Colo., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland

Filed Oct. 21, 1965, Ser. No. 499,713
14 Claims. (Cl. 60—258)



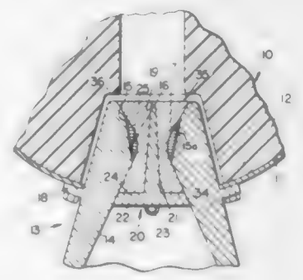
This is an extremely short rocket engine formed basically of a number of spaced plugs geometrically arranged

to provide a number of interconnected rocket nozzle areas. Each plug supplies either oxidizer or fuel to the combustion chamber and a manifold supplies the other of the oxidizer or fuel.

3,372,548
ROCKET NOZZLE

John R. Mathis, Tremonton, Utah, and George E. Bush, Upland, Calif., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed June 17, 1965, Ser. No. 464,767
6 Claims. (Cl. 60—271)

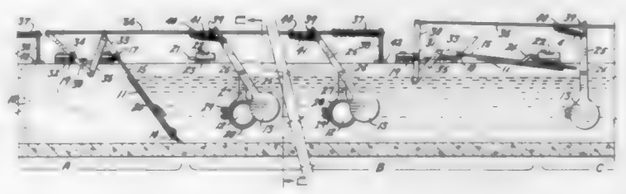


1. A rocket motor comprising a propellant containing casing, a converging-diverging nozzle attached to said casing, said nozzle comprising a base substantially including the converging-diverging portions thereof, a seat in said base, an annular member engaging said seat intermediate said nozzle converging-diverging portions in said base including a throat, said annular member and said seat defining a substantially annular hot gas fillable space therebetween, a removable, annular member retaining means comprising a reinforcing member having a substantially circular base portion positioned in said nozzle against the diverging section thereof and a vertical rod portion extending from said base portion interiorly of said annular member, and a foamed plastic plug supported on said base portion and said rod portion contacting said nozzle base in at least the diverging section thereof for retaining said annular member in said seat prior to ignition of said motor.

3,372,549
REMOTE-CONTROLLED AUTOMATICALLY OPERATING IRRIGATION GATES

Lawrence L. French, Star Rte., Box 248, Powell, Wyo. 82435

Filed July 18, 1966, Ser. No. 565,926
6 Claims. (Cl. 61—24)

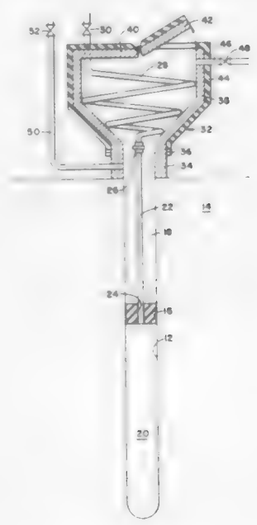


A plurality of main gates positioned at spaced intervals along a main ditch, dividing the latter into sections; a plurality of lateral gates in each section discharging water from their respective section; the main gate of each section being connected with the lateral gates of that section so that the latter will be moved in correspondence with the main gate of that section.

3,372,550
METHOD OF AND APPARATUS FOR FREEZING WATER-BEARING MATERIALS

Carl E. Schroeder, 715 E. Liberty, Ponca City, Okla. 74601

Filed May 3, 1966, Ser. No. 547,296
10 Claims. (Cl. 61—36)

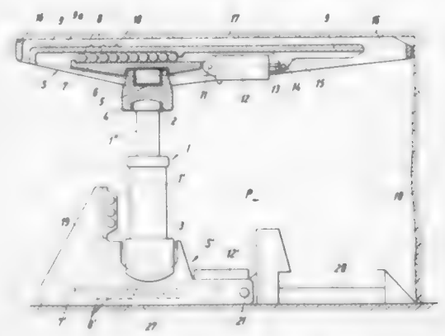


Method and means are provided for freezing water-bearing material, such as earth, in zones such that the temperature decreases with depth. The lower temperature freezing at greater depth provides additional structural strength at the point of need.

3,372,551
MINE ROOF SUPPORT

Hans-Joachim von Hippel, Muehlenkamp 12, Lunen, Westphalia, Germany

Filed Aug. 30, 1966, Ser. No. 575,995
Claims priority, application Germany, Sept. 1, 1965, H 57,042; Sept. 7, 1965, H 57,101; Jan. 7, 1966, H 58,168
22 Claims. (Cl. 61—45)



1. Apparatus for supporting roofs in mining galleries and other underground excavations, comprising at least one prop having upper and lower end portions; and upper and lower advancing units each including first and second caps mounted on the respective end portions of the prop and each movable substantially vertically into engagement with the adjoining material surrounding the excavation, said first and second caps being reciprocable with reference to each other in a substantially horizontal direction and said prop being coupled for such horizontal movement with one of said caps, friction reducing means interposed between said first and second caps, operating means for moving said caps vertically with reference to each other, and shifting means for moving said first cap horizontally when the second cap is in engagement with said material, and vice versa.

3,372,552
WOODEN FENDER PILE PROTECTING APPARATUS

Orval E. Liddell, P.O. Box 1533, Avalon, Calif. 90704
Substituted for abandoned application Ser. No. 348,569, Mar. 2, 1964. This application Feb. 23, 1967, Ser. No. 642,258

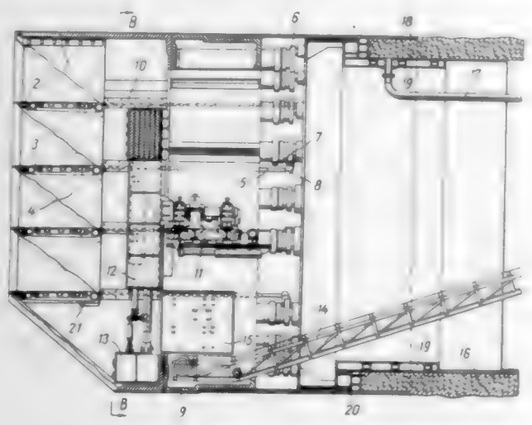
2 Claims. (Cl. 61—54)

Apparatus usable with a floating bumper to protect wooden fender piling against marine borer attack and also against mechanical destruction utilizing a sheet of substantially waterproof material wrapped about the pile to define a generally circumferential water-filled space between the pile and the sheet, with circulation between such space and the ambient water being restricted to thereby maintain the water in the space stagnant and prevent marine borer attack on the submerged portion of the pile encased by the sheet. A rigid shoe of arcuate shape is disposed on the side of the fender pile facing a floating bumper exterior of the sheet. A resilient cushion membrane is interposed between the concave side of the shoe and the sheet. The shoe is held in place by lag bolts that extend through the shoe and cushion membrane into the fender pile with the cushion membrane providing a water seal between the lag bolts and the sheet and also absorbing mechanical impacts when a ship engages the floating bumper.

3,372,553
UNIT FOR DRIVING TUNNELS IN LOOSE GROUND

Vladimir Pavlovich Samoilov, Moscow, U.S.S.R., assignor to Nauchno-Issledovatelsky Institute Osnovany i Padzemnykh Sooruzheny

Filed May 12, 1964, Ser. No. 366,804
5 Claims. (Cl. 61—85)

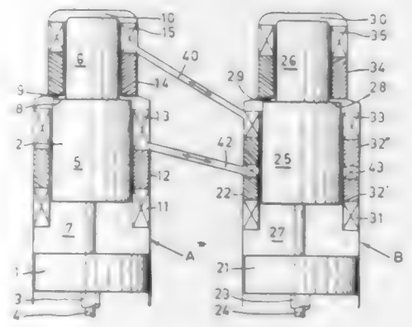


1. An apparatus for driving tunnels in loose soil and ground including a shield having a face end, a cutting ring for the face end, at least one horizontally disposed front rigid sharp-edged member and a conveyor extending across the width of, abutting and operably related to said member and constituting therewith a horizontal component, said conveyor including driving and driven drums and a belt trained about said drums, a drive member extending axially of the shield remaining stationary during advance of the shield, a gearbox attached to the shield for adjusting the speed of the conveyor, means drivingly connecting the gearbox to the drive member, a shaft driven by the gearbox, a shaft for said driving drum, coupling means between said shafts permitting rotation only in one direction for coordinating the rate of advance of the shield and of the conveyor belt, a clutch for the driving drum shaft adapted to transmit a drive between the driven shaft of the gearbox and the driving drum shaft, a longitudinally movable transfer conveyor within the shield behind the horizontal component and means for selectively loading muck behind the component onto the transfer conveyor.

3,372,554
ARRANGEMENT FOR PRODUCING COLD AT VERY LOW TEMPERATURES

Gijsbert Prast, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 21, 1966, Ser. No. 536,131
Claims priority, application Netherlands, Apr. 6, 1965, 65—4,350
7 Claims. (Cl. 62—6)



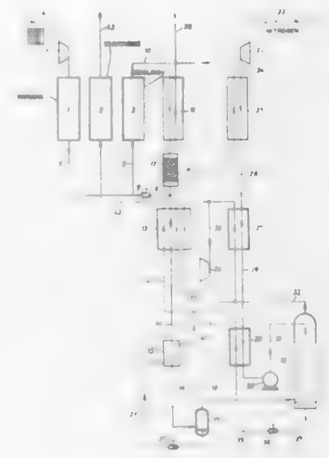
A system incorporating two cold gas refrigerators in which the first refrigerator operates at a high pressure and produces cold at a higher mean temperature. The second refrigerator operates at a lower mean temperature and is connected to the first refrigerator whereby the latter makes up for the regenerator losses of the second refrigerator and permits the second refrigerator to achieve low temperatures.

3,372,555
PROCESS AND APPARATUS FOR IMPURITY REMOVAL FROM HYDROGEN-CONTAINING GASES

Rudolf Becker, Munich-Solln, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany

Filed Aug. 14, 1964, Ser. No. 389,708
Claims priority, application Germany, Aug. 21, 1963, G 38,515
10 Claims. (Cl. 62—13)

1. A low temperature process for the fractionation of hydrogen-containing gases comprising substantial quantities of hydrogen, methane, and high boiling gases having melting points higher than the boiling point of methane, in an installation containing at least three cyclically reversible regenerators each of which passes successively through a warming, a scavenging and a cooling period whereby the hydrogen-containing gas in the warming period of the regenerator is fractionated into two fractions, one of which, the gaseous fraction, is divided into two partial currents, one of which is passed through a regenerator in the cooling period and is then recombined with the other partial current, which comprises cooling the hydrogen-

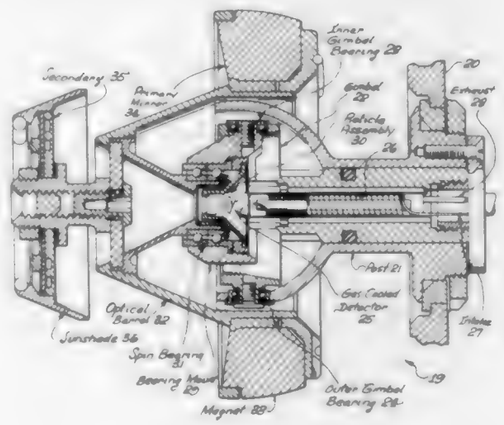


containing gas in the regenerator in the warming period to a temperature higher than the dew point of methane but sufficiently low to congeal completely the high boiling components in their solid states, then warming the one partial current of the remaining gaseous fraction in the regenerator in the cooling period, recombining and further cooling the partial currents to liquefy and separate methane from the remaining gaseous components.

3,372,556
RETRACTABLE CRYOGENIC ASSEMBLY

Marvin Waldman, Ontario, Calif., assignor to General Dynamics Corporation, a corporation of Delaware

Filed Mar. 25, 1966, Ser. No. 537,535
9 Claims. (Cl. 62—45)

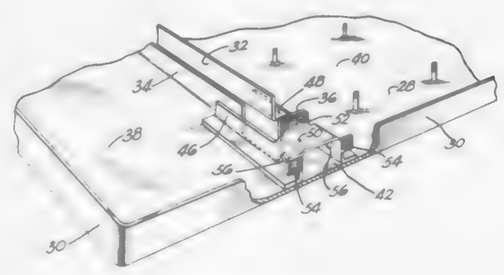


Broadly, the disclosure relates to an infrared tracking or seeking head provided with a cryostat cooling means, this being such that the cryostat is detachable from the seeker head so as to permit the detector section to be gimbaled. The cryostat unit extends into the detector cooling chamber through an O-ring seal and is provided with a solenoid control unit which operates to withdraw the cryostat from the cooling chamber. The chamber is provided with an internal spring loaded door which seals the chamber when the cryostat is removed.

3,372,557
AIR CONDITIONING UNIT

Robert E. Dyas, Manitau Beach, and Richard F. Sharp, Hillsdale, Mich., assignors to Addison Products Company, Addison, Mich., a corporation of Michigan

Filed Sept. 12, 1966, Ser. No. 578,702
7 Claims. (Cl. 62—262)

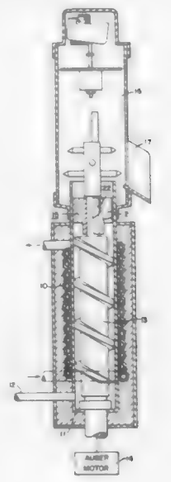


The invention resides in an air conditioning unit for installation in both sliding and double-hung windows in which a common base is provided for evaporator and compressor cabinet structures located on opposite sides of the window. A slot in the common base terminates at a narrow, reinforced corner common to the sections spaced by the slot. The evaporator and compressor cabinet structures are carried upon the two sections and functionally connected to each other across the common reinforced corner by conduit structure.

3,372,558
AUGER TYPE ICEMAKERS

Gilbert M. Guard, Chicopee Falls, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

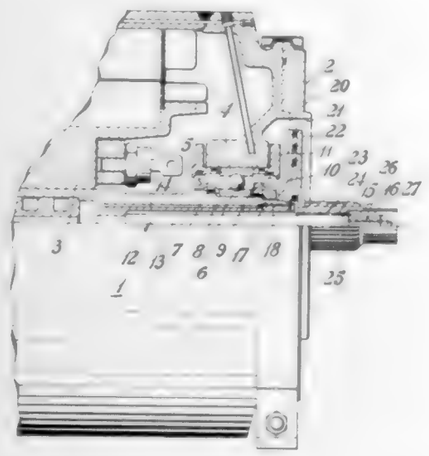
Filed May 24, 1967, Ser. No. 641,010
3 Claims. (Cl. 62—320)



The present invention relates to auger type icemakers.

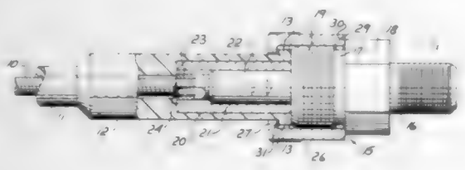
To make random different size chunks of ice, an auger icemaker is provided with an extrusion head having extrusion openings formed by radially spaced apart bosses with alternate adjacent bosses of different length extending axially toward the discharge end of the auger and with wedge shaped compressing and shearing surfaces on the ends of the bosses facing the auger discharge end.

3,372,559
FLEXIBLE DRIVE SHAFT
Frederick Milton Potter, Little Silver, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed Feb. 17, 1966, Ser. No. 528,171
5 Claims. (Cl. 64—1)



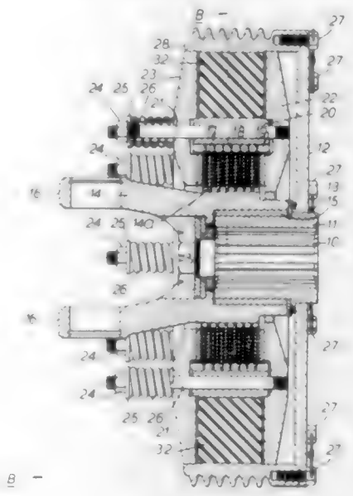
An accessory drive control in which a flexible drive shaft has the characteristics of a shaft twice the length by the provision of outer and inner telescoping members having substantially the same torsional strength.

3,372,560
FLEXIBLE DRIVE SHAFT COUPLING ASSEMBLY
John F. Dalton, Worcester, Pa., assignor to N. W. Controls, Inc., North Wales, Pa., a corporation of Pennsylvania
Filed Aug. 25, 1966, Ser. No. 574,960
5 Claims. (Cl. 64—4)



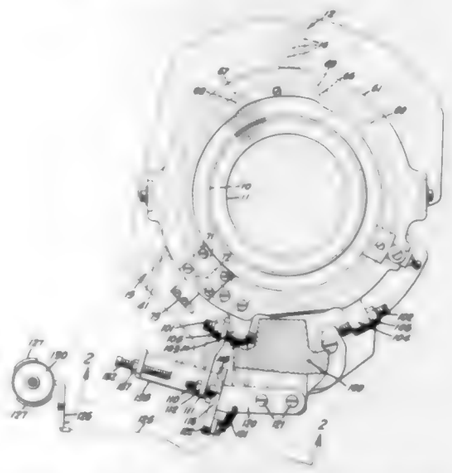
1. In a flexible shaft including an inner rotatable flexible core and an outer sheath covering said core; an assembly for coupling said shaft to a rotatable drive member comprising a sleeve bonded at one end to the end of said sheath, the other end of the sleeve having an external radial flange, a bearing fitted within said sleeve, an adapter for connecting said core to said rotatable drive member including a central threaded body portion, connector means integral with said body and extending from one end thereof for securing the adapter to the drive member, a shaft of reduced diameter extending from the other end of the body portion, said shaft fitting within said sleeve and being journalled for rotation in said bearing, an axially extending coupling recess in the end of said shaft, said core being adapted to fit within said recess for rotational movement therewith, a retainer nut slideably mounted on said sleeve, said nut having an internally threaded portion, the threads on said nut being adapted to interfit with the threads on the body of said adapter for rotation therewith, said nut further having an inwardly extending flange, said flange being axially spaced from the sleeve flange and being adapted to prevent separation of said shaft assembly from said adapter, said nut being dimensioned to provide for axial clearance of said flanges when said threads are interfitted.

3,372,561
MEANS FOR LIMITING TORQUE TRANSMISSION
John Arthur Howard and Eric Leonard Myers, West Horndon, England, assignors to Rotary Hoes Limited, West Horndon, England
Filed Mar. 1, 1966, Ser. No. 530,871
Claims priority, application Great Britain, Mar. 3, 1965, 8,985/65
10 Claims. (Cl. 64—28)



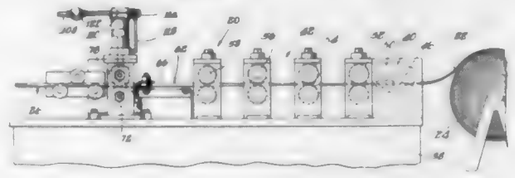
A torque-limiting clutch has coaxial power input and power output members, two pressure plates biased together to clamp friction drive elements. Torque is transmitted through torque responsive means having circumferentially spaced opposing end abutments associated with axially spaced side abutments facing the pressure plates such that torque in excess of a predetermined value will move the end abutments toward each other and the side abutments apart to move the pressure plates apart in opposition to the biasing means for reducing the friction drive engagement between said elements.

3,372,562
SINKER OPERATING CONTROL FOR CIRCULAR KNITTING MACHINES
Walter H. Imboden, Midvale Manor, Reading, Richard M. Janda, Crestwood, Reading, and James H. Boyer, Jr., Mount Penn, Reading, Pa., assignors to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 418,460, Dec. 15, 1964. This application May 14, 1965, Ser. No. 455,776
6 Claims. (Cl. 66—108)



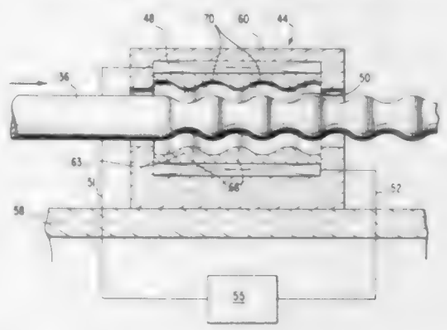
This machine will knit alternating courses of long and short stitches of a tuck pattern in the heel and/or toe of a stocking and can also form consecutive courses of the same length in such reciprocatorily knit areas. A pivoted means when in one position stops sinker cap rotation during each forward stroke to yield normal length stitches and when in a second position stops sinker cap rotation during each reverse stroke to cause behind the neb knitting and thus long stitches. When the pivoted means is in the second position the usual bumper screw and post meet during each forward stroke to yield short stitches.

3,372,563
APPARATUS FOR PRODUCING TUBING
Richard B. Walsh, Round Lake, Ill., assignor to Quaker Industries, Inc., Antioch, Ill., a corporation of Wisconsin
Filed Jan. 27, 1964, Ser. No. 340,275
7 Claims. (Cl. 72—52)



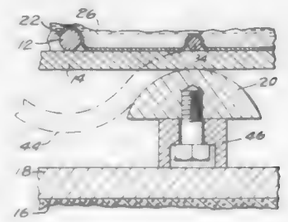
1. An apparatus for forming tubing from a strip of material continuously advancing along a predetermined path of travel comprising a series of means adjacent said path of travel for forming hook portions along opposite margins of the strip and for curling the strip toward a generally tubular condition and interengaging said hook portions, means adjacent said path of travel for crimping said interengaged hook portions together for forming a tubing side seam, said last named means comprising first and second rollers mounted at a fixed location for engaging opposite outer sides of the tubing, a shaft supporting said first roller and extending laterally from opposite sides thereof, a pair of shiftably disposed members respectively supporting said shaft at opposite sides of said first roller, a mandrel anchored for extending within the tubing between said rollers, and pneumatic means resiliently yieldably urging said first roller toward the other with a predetermined substantially constant force for enabling said first roller to accommodate any variations in material thickness of the strip, said pneumatic means comprising a pair of cylinder and piston means respectively connected with said shaft at opposite sides of said first roller.

3,372,564
METHOD FOR SHAPING METAL TUBES
George J. Crowdes, West Dennis, Mass., assignor to Simplex Wire and Cable Company, Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 19, 1965, Ser. No. 448,987
5 Claims. (Cl. 72—56)



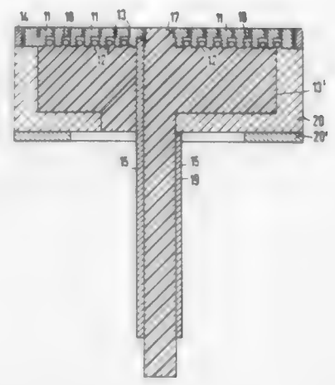
A method for shaping a metal tube by means of forces created by magnetic flux is shown. A tube is passed continuously through a zone defined by an annular, electrically conductive coil of a material having high magnetic permeability and periodic surges of electrical current are passed through the coil to create a force on the moving tube to corrugate or swage it. By shaping the coil it is possible to produce a like shape in the moving tube and by synchronizing the rate of travel of the tube with the periodic surges of electrical current a regular corrugation can be produced in the tube.

3,372,565
CORRUGATION FORMING BY EXPLOSIVES
Laszlo Kunsagi, New York, N.Y., William R. Apblett, Metuchen, N.J., Irwin Berman, Bronx, N.Y and Joseph H. Heifetz, Fort Lee, and Byram J. Mago Convent, N.J., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Apr. 13, 1965, Ser. No. 447,709
15 Claims. (Cl. 72—56)



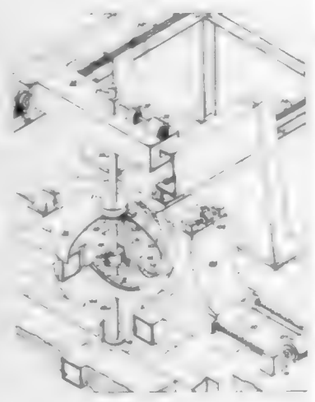
A method and apparatus for corrugating panels by the use of explosive wherein the explosive is limited in amount so that grooves in the panel are substantially free-formed.

3,372,566
DEVICE FOR FORMING METALLIC WORKPIECES BY PULSED MAGNETIC FIELDS
Horst Schenk, Erlangen, and Helmut Seiffert, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed July 2, 1965, Ser. No. 469,184
Claims priority, application Germany, July 8, 1964, S 91,933
2 Claims. (Cl. 72—56)



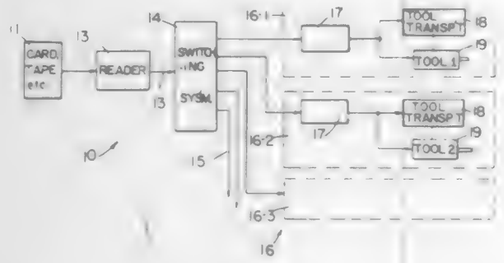
Device for deep-drawing metallic workpieces by pulsed magnetic fields includes a plurality of coaxially disposed rings of relatively good electrically conductive materials, said rings being radially slotted and being electrically insulated from one another, a magnetic coil winding disposed beneath the rings and electrically insulated therefrom, the rings having an upper surface corresponding to the geometric shape of a workpiece to be deep-drawn.

3,372,567
SPINNING MACHINE AND METHOD
Niels H. Jensen, Glenmoore, and Leonard Pompa, Ardmore, Pa., assignors to Lukens Steel Company, Coatesville, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 374,567, June 12, 1964. This application Sept. 16, 1965, Ser. No. 490,164
11 Claims. (Cl. 72—80)



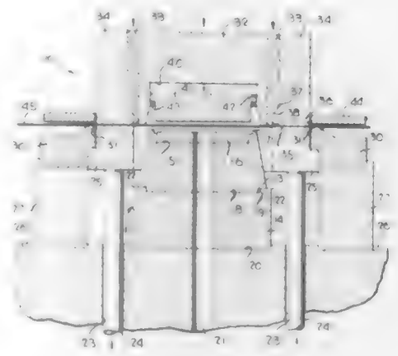
A spinning machine for forming heads from heated steel plates where opposed rollers are carried by a yoke which is movable in an arcuate path on a member which, in turn, is movable both parallel and perpendicularly relative to the axis of rotation of the spinning machine, the rollers having parallel axes of rotation and being selectively offset from each other in the direction of their axes of rotation and/or normally thereto.

3,372,568
AUTOMATIC PRODUCTION APPARATUS AND METHOD
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of applications Ser. No. 219,357, Aug. 13, 1962, and Ser. No. 449,874, July 28, 1954. This application Aug. 6, 1964, Ser. No. 387,954
13 Claims. (Cl. 72—218)



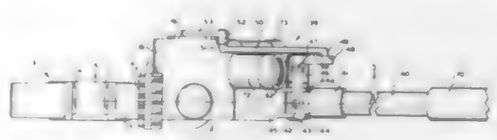
A machine tool head assembly is mounted for transport by means of a mast which is electrically movable on horizontal tracks, after which the machine tool head assembly is electrically moved vertically on the mast to a position to work on a work piece. A work support, independent of the transport means and the tool head assembly, holds a work piece in operative relationship with the tool head assembly as manipulated by the transport means. The machine tool head assembly carries its own motors for manipulating the working tool, and remote control program means is provided for causing a flexible combination of all of these motions.

3,372,569
DIE TO FORM AND TRIM A ROUND TAPERED CONTAINER IN ONE OPERATION
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 1, 1963, Ser. No. 299,313
10 Claims. (Cl. 72—334)



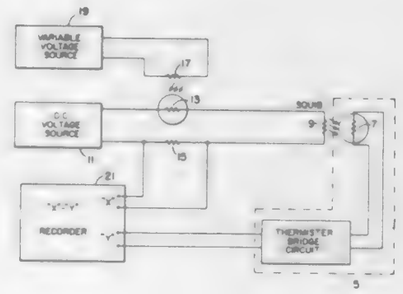
1. In a die for forming a container, a center die element and a plurality of die parts opposed to said center die element; said die parts including a draw ring disposed in cooperative alignment with said center die element for shaping said container, an outer draw ring disposed about said first mentioned draw ring and slidable thereon, and a blanking punch disposed about and slidable on said outer draw ring; said center die element including a stationary trim punch having a cutting edge thereon, said blanking punch and said cutting edge cooperating to trim a container.

3,372,570
HYDRAULIC TOOL
Henry J. Mansell, 225½ Main St., Davison, Mich. 48423
Filed May 31, 1963, Ser. No. 284,674
26 Claims. (Cl. 72—416)



1. A hydraulically actuated tool comprising a body; a movable member supported on said body; hydraulic force generating means supported by said body; force transmitting means interposed between said movable member and said force generating means operable to transmit force from the latter to said movable member for moving the latter; rotary operating means acting on said force generating means for operating the latter; and disabling means reacting between said operating means and said force generating means for disabling generation of hydraulic force by the latter in response to a predetermined rotation of said operating means.

3,372,571
INFINITE RESOLUTION, AUTOMATIC, CALIBRATION, CURVE PLOTTER
David R. Dreitzler and Roy E. Yell, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army
Filed June 28, 1966, Ser. No. 561,299
5 Claims. (Cl. 73—1)

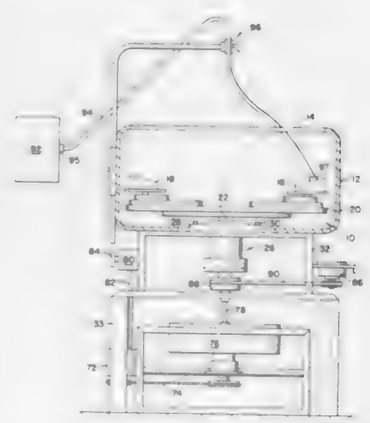


1. An infinite resolution, automatic, calibration, curve plotter comprising:

a first voltage source having first and second output connections; a thermistor connected to said first output connection of said first voltage source; a resistor connected to said second output connection of said first voltage source; a thermoelectric device having first and second input connections, said first input connection being connected to said thermistor, and said second input connection being connected to said resistor; a variable heat source means thermally coupled to said thermistor for smoothly increasing the temperature to the thermistor at a steady rate; an X and Y axis input recorder, said X axis input being connected across said resistor; and a heat sensing circuit, which is to be calibrated, connected to said Y axis input of said recorder, said heat sensing circuit being thermally coupled to said thermoelectric device whereby a calibration curve of said heat sensing circuit is obtained as the heat intensity applied to said thermistor is increased.

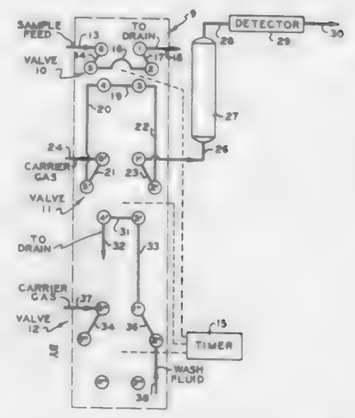
3,372,572
DOUBLE-TURNTABLE TYPE DYNAMIC TEST APPARATUS
Albert S. Campbell and Glenn C. Wright, Las Cruces, N. Mex., assignors to the United States of America as represented by the Secretary of the Army
Filed Aug. 22, 1966, Ser. No. 574,508
6 Claims. (Cl. 73—1)

1. Dynamic test apparatus including: a support frame; a bearing assembly secured within the upper portion of said frame; an annular, fixed gear having teeth on its outer periphery and having a radial flange secured to the upper side of said bearing assembly; a primary turntable having an axial shaft rotatably journaled within said bearing assembly, said turntable being thereby disposed for rotation about a vertical axis, said turntable having a pair of diametrically opposed bores extending vertically therethrough equidistantly spaced from the axis thereof; an annular, centrally disposed, primary gear housing carried by the lower side of said primary turntable; a first pair of gears disposed within said primary gear housing and engaged with said annular gear on diametrically opposite sides thereof, a second pair of gears disposed within said primary gear housing each engaging a respective one of said first pair of gears; a pair of secondary gear housings detachably secured on the upper side of said primary turntable in diametrically opposed positions, each said secondary gear housing having a vertical bore extending therethrough; a third gear disposed in each secondary gear housing; a drive shaft extending through each of said bores in the primary turntable and interconnecting the respective second and third gears; a fourth gear disposed



in each said secondary gear housing and engaging one of said third gears; a fifth gear disposed in each said secondary gear housing and engaging one of said fourth gears; a pair of secondary turntables mounted on said primary turntable for rotation relative thereto and adapted for supporting a test specimen thereon, each said secondary turntable having an axial shaft rotatably journaled in said bore in each said secondary gear housing and drivingly connected with a respective one of said fifth gears; and drive means operatively connected with said primary turntable for rotating said turntables.

3,372,573
CHROMATOGRAPHIC ANALYSIS METHOD AND APPARATUS THEREFOR
Richard A. Sanford and James S. Calhoun, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,783
6 Claims. (Cl. 73—23.1)



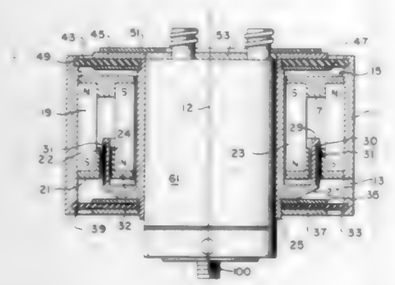
A valving system having three control units which, for example, operate sequentially to entrap a sample of a liquid containing non-volatile materials in a sample loop; flush vaporized components of the liquid sample from the sample loop; flush solvent through the sample loop to ex-

tract non-volatile components therefrom; and pass drying gas through the sample loop to thereby yield a dry sample loop containing no clogging deposits therein.

3,372,574
FRICTIONAL SENSITIVITY TESTING APPARATUS
Carl E. Armour, Bloomfield, Carroll C. Morrison, Bedford, Paul E. Scott, Lyons, and Lloyd A. Smith, Bedford, Ind., and Garry Weingarten, Morris Plains, N.J., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 12, 1966, Ser. No. 520,193
3 Claims. (Cl. 73—35)

A device for determining the relative frictional sensitivity of a pyrotechnic material by counter-balancing, with a weight, a rotational force applied by a rotating shaft to a quantity of pyrotechnic material held in a container which is mounted on a cam, said weight being attached to one end of a cord with the other end of said cord being attached to said cam whereby a variable torque arm is provided and whereby the amount of rotation of said cam and the time required for ignition of said pyrotechnic material determines the relative frictional sensitivity of said pyrotechnic material.

3,372,575
WRAPAROUND VIBRATION GENERATOR IN A MECHANICAL IMPEDANCE MEASURING DEVICE
Fred Schloss, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 31, 1965, Ser. No. 444,475
9 Claims. (Cl. 73—67.1)

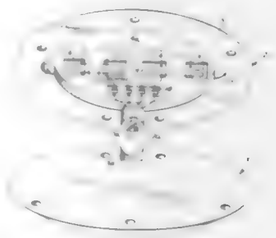


An apparatus for measuring the mechanical impedance of a specimen wherein the vibration generator for the "impedance head" encloses the "impedance head," and the "impedance head" is supported by a vibratable sleeve, which is supported for linear vibratory motion by flexible rings.

3,372,576
DIGITAL ULTRASONIC THICKNESS GAUGE
Jacques Dory, Paris, France, assignor to Corporation Realisations Ultrasoniques, Paris, France, a limited company
Filed July 14, 1966, Ser. No. 565,277
Claims priority, application France, July 17, 1965, 25,031, Patent 1,458,245
4 Claims. (Cl. 73—67.9)

A gated ultrasonic echo thickness measuring system having a plurality of trigger circuits and a counter for measuring the travel time of the echo signals and including a gain control circuit for progressively increasing the gain of the echo receiver during a succession of transmitting and receiving cycles.

3,372,577
PRESSURE MEASURING DEVICE EMPLOYING A DIAPHRAGM AND STRAIN GAGES
Robert C. Bates and Ernest L. Corp, Spokane, Wash., assignors to the United States of America as represented by the Secretary of the Interior
Filed Jan. 12, 1967, Ser. No. 608,943
10 Claims. (Cl. 73—88.5)

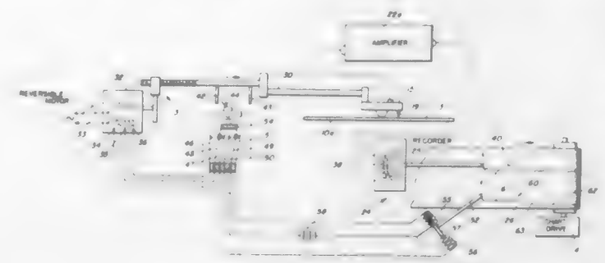


A pressure measuring device with an outer pressure sensitive diaphragm having four strain gages bonded to its inner face. The arrangement and Wheatstone bridge circuitry of the gages are such that temperature and lateral forces against the diaphragm have substantially no effect on bridge output. A collar surrounding the diaphragm has notches adjacent those gages in the peripheral area of the diaphragm so that stress concentrations are prevented in this area.

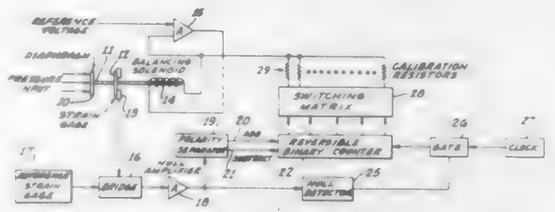
3,372,578
APPARATUS FOR MEASURING THE SURFACE FINISH OF ROLLED METAL
William C. Harmon, Chagrin Falls, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Continuation-in-part of application Ser. No. 25,329, Apr. 28, 1960. This application Dec. 2, 1963, Ser. No. 328,779
3 Claims. (Cl. 73—105)

1. In apparatus for examining and indicating surface roughness characteristics of steel strip or the like, in combination, a sensing device movable along the surface to be examined, for producing electrical signals representing the contour of said surface, means controlled by said

sensing device and having an indicating area, for producing in said area a visible response to said signals for determination of a contour property of said surface, reversible driving means including control means for effecting reversal thereof, for displacing the sensing device selectively in opposite directions along the said surface, and means controlled by said control means and including supplemental visible signal means adjacent said area for producing a visible indication of the direction in which the sensing device is moving.



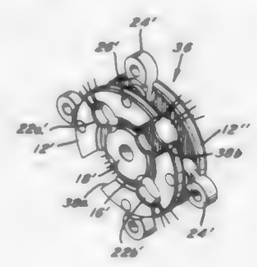
3,372,579
DIGITAL OUTPUT TRANSDUCER
Daniel Hobel and Marvin Sleven, Los Angeles, Calif., assignors to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Dec. 18, 1964, Ser. No. 419,479
11 Claims. (Cl. 73—141)



11. A circuit for providing a digital indication of the magnitude of an unknown force comprising means for producing an electrical signal representative of the difference between the value of said unknown source and a reference value, a reversible counter, means coupling said counter to the output of said signal producing means, said coupling means including means for causing said counter to add if said electrical signal is greater than said reference value and subtract if said electrical signal is less than said reference value, a source of pulses, means coupled to said pulse source and operable in response to said electrical signal to pass pulses to be counted to said counter, an amplifier having an output and first and second inputs, means for developing a force in opposition to said unknown force, a reference source coupled to said first input of said amplifier, feedback circuit means coupling said force developing means between said output and said second input of said amplifier, and means coupling said feedback circuit means to said counter and operable to vary the signal fed back to said second input by said feedback circuit means.

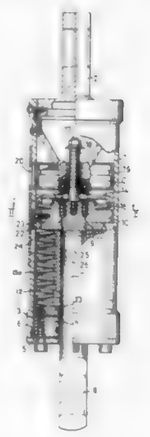
3,372,580
FORCE TRANSDUCER
Jacob Chass, Philadelphia, Pa., assignor, by mesne assignments, to Robinson-Halpern Company, West Conshohocken, Pa., a corporation of Pennsylvania
Filed May 27, 1965, Ser. No. 459,163
14 Claims. (Cl. 73—141)

1. A transducer comprising a pair of discs of a magnetical material the permeability of which varies when the material is stressed, each of said discs having a central portion, an outer portion surrounding and spaced from said central portion and a web portion connecting the central portion and the outer portion, said web portion being thinner than the central portion and the outer portion, the outer portion of each of said discs having a hole therethrough, the edge of the hole extending at least to the web portion of the disc, a separate primary coil wound through the hole and around the outer portion of each of said discs, a separate secondary coil wound through the hole and around the outer portion of each of said discs, and means securing the discs together in spaced parallel relation only at the outer portion of the discs including means for rigidly supporting the discs at the outer edges



thereof, and means for applying a force to be measured to the central portion of only one of said discs, the primary coils of said discs being electrically connected together, the secondary coils of said discs being electrically connected together, the connection between said coils being such that, when the primary coils are connected to an A.C. current, the voltages induced across the secondary coil of one of said discs is in bucking relation to the voltage induced across the secondary coil of the other disc, whereby the application of said force causes a stressing and change in the permeability of the web portion of said one disc which, by altering the flux of the flux path around the hole produces a change in the voltage induced in the secondary coil of said one disc.

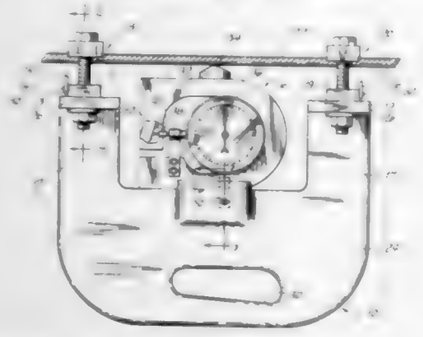
3,372,581
DYNAMOMETER
Sven Axel Tell, Vikingavagen 3, Danderyd, Sweden
Filed Apr. 22, 1966, Ser. No. 544,452
Claims priority, application Sweden, Apr. 27, 1965, 5,503/65
6 Claims. (Cl. 73—141)



1. A dynamometer comprising a casing, a drawrod longitudinally displaceable in the casing, spring elements against the action of which the drawrod is longitudinally displaceable, means for indicating the force with which the drawrod acts against the spring elements, the spring elements surrounding the drawrod, stop means on the

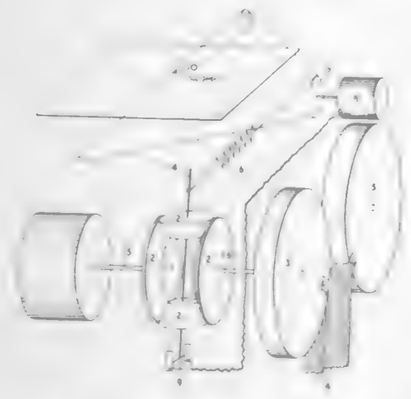
drawrod against which the spring elements bear in one direction, means on the casing against which the spring elements bear in the opposite direction, said stop means comprising a piston screw-threadedly carried by the rod, means for locking the piston on the rod in fixed position, and a ring screw-threadedly carried by the rod and disposed between the locked piston and the spring elements in contact with the piston, said ring permitting the piston to be screwed into said position without being tightened and without wear on the threads between the piston and the rod.

3,372,582
CABLE TENSION INDICATOR
Joseph Weiss, 630 Stanley Ave., Brooklyn, N.Y. 11207, and John G. Macco, 375 1st Ave., Massapequa Park, N.Y. 11758
Filed June 25, 1965, Ser. No. 467,154
5 Claims. (Cl. 73—144)



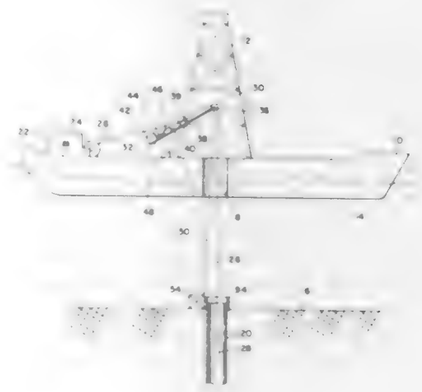
A portable clamp type cable tension indicator which includes a frame structure having a pair of spaced apart clamps and a force type fulcrum gauge intermediate thereof. When the clamps are tightened on the cable, the fulcrum deflects the cable and the deflection of the cable and the force indicated by the gauge are a measure of the cable tension.

3,372,583
DEVICE FOR MEASURING TACK
Waldemar V. C. Van Beek, Bussum, Netherlands, assignor to Ketjen Carbon Naamloze Venootschap, Amsterdam, Netherlands
Filed Sept. 9, 1964, Ser. No. 395,334
Claims priority, application Netherlands, Sept. 18, 1963, 297,734
6 Claims. (Cl. 73—150)



1. A device for testing adhesion between two materials, comprising two disks mounted in coplanar relationship with each other, the circumference of each disk being provided with clamping means for one end of each of two plies of the material compressed together, a motor and gear assembly for driving the disks at equal speed in opposite directions to cause separation of the plies, a pair of guiding rollers around which the plies are pulled apart and defining the point of separation, said pair of rollers being movable, means for measuring the separation force, recording means, means for compressing the plies together with an adjustable force during an adjustable time, means for exactly defining the test surface, said measuring means comprising differential gearing means inserted into the driving shaft system between the motor and the disks, said differential gearing means acting as a fixed gear train, the motor driving one end gear and the other end gear driving the disks, means for applying a variable force to the spider of said gear train to keep the spider stationary, a detecting system for detecting the displacement of said spider from a neutral position, means for varying the force applied thereto to return said spider to its neutral position upon displacement thereof, the recording device cooperating with the variable force applying means and recording said variable force as a function of time, the separation force being a function of the force required to maintain the spider shaft stationary as the motor drives the disks.

3,372,584
OFFSHORE LOGGING
Alfred H. Jageler, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed July 19, 1965, Ser. No. 473,147
8 Claims. (Cl. 73—152)

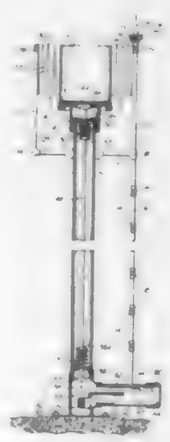


This concerns an apparatus for compensating for vertical movement of a ship in logging a borehole therefrom. A flexible logging line goes from a conventional recorder over a logging line pulley for supporting a logging device in a borehole beneath the floating vessel. An arm is pivotally connected to the vessel and supports the logging line pulley a fixed distance from the pivotal connection. Sensing means for detecting the vertical movement of the vessel is provided and includes means for moving the arm about its pivot thus raising or lowering the pulley to compensate for such vertical movement. In one embodiment, the sensing means includes a sonar detector attached to the floating vessel for continuously detecting the distance between the vessel and the bottom of the body of water.

3,372,585
DEVICE FOR RECORDING CURRENT VELOCITY AND DIRECTION IN BODIES OF WATER
Shale J. Niskin, 9400 SW. 63 Court, Miami, Fla. 33156
Filed Feb. 17, 1966, Ser. No. 528,222
11 Claims. (Cl. 73—170)

A device for the automatic measurement and recording of water currents at various predetermined depths comprising a frame carrying a freely rotatable sphere which is submerged to the test depth. The rotatable sphere assumes a given vertical and azimuthal position. After a predetermined time the sphere is locked in position with respect to the frame and the device is retrieved.

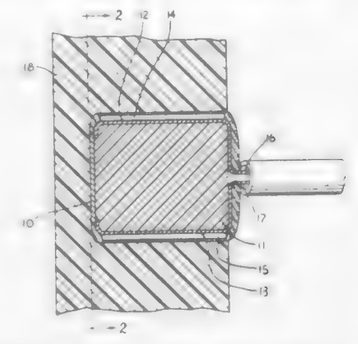
3,372,586
PRECIPITATION MEASUREMENT GAUGE
Duane G. Chadwick, Logan, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed June 23, 1965, Ser. No. 466,404
8 Claims. (Cl. 73—171)



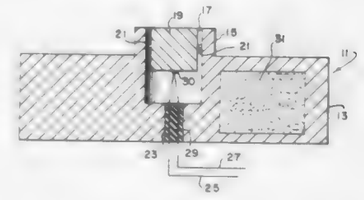
A precipitation gauge for telemetering water level information. A receiving vessel is supported by oppositely acting springs within a housing and a core is carried by the housing and is movable within an electrical coil such that temperature changes and friction do not significantly affect a transmitted signal indicative of the weight of the receiving vessel and varied in accordance with the position of the core.

3,372,587
HEAT FLOW DETECTOR HEAD
Jacob Nanigian, Needham, Mass., assignor to Nanmac Corporation, Needham Heights, Mass., a corporation of Maryland
Filed Nov. 3, 1964, Ser. No. 408,595
4 Claims. (Cl. 73—190)

A detector head for measuring the heat flow through the wall of a chamber of a given material and surrounding a heat source, having a flat plate at right angles to the heat flow abutting a detector head body of the same material as the wall, and a plurality of dissimilar thermocouple conductors attached to the plate in the plane thereof. The head is provided with means for mounting it in the wall and with means for connecting measuring instruments to the thermocouple conductors to measure temperature with respect to time.

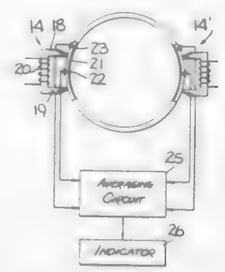


3,372,588
CONSTANT TEMPERATURE HEAT SINK FOR CALORIMETERS
Myron C. Ziemke, Huntsville, Ala., and Rex S. Zerger, Houston, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 28, 1965, Ser. No. 428,887
4 Claims. (Cl. 73—190)



A calorimeter having a heat sink with a cavity filled with a material, such as Glauber's salts, that absorbs heat by transformation so as to maintain the temperature of the heat sink substantially constant.

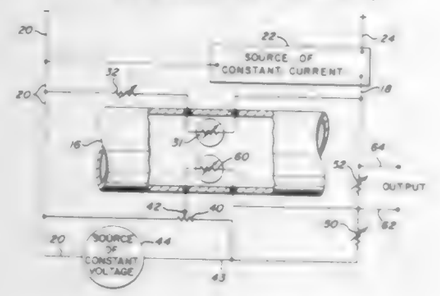
3,372,589
SIDE-SADDLE MAGNETIC FLOWMETER
Elmer D. Mannherz, Southampton, Pa., assignor to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania
Filed June 14, 1965, Ser. No. 463,641
9 Claims. (Cl. 73—194)



A magnetic flowmeter for measuring the rate of flow of a fluid passing through a pipe having a relatively large cross-sectional area, a magnetic field being created within the pipe in a region which represents only a portion of the total cross-sectional area thereof, the voltage induced in said region by the fluid passing therethrough being detected to produce a signal which is then multiplied by a factor depending on the dimensional relationship of

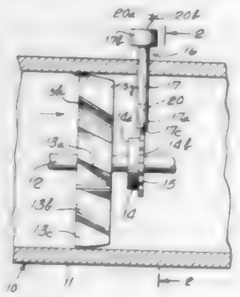
the region to the total cross-sectional area of the pipe to provide an accurate reading of the flow rate through the pipe.

3,372,590
THERMAL FLOWMETER
John Jerome Sterling, Yellow Springs, Ohio, assignor to Technology Incorporated, Dayton, Ohio, a corporation of Ohio
Filed Oct. 1, 1965, Ser. No. 492,180
14 Claims. (Cl. 73—204)



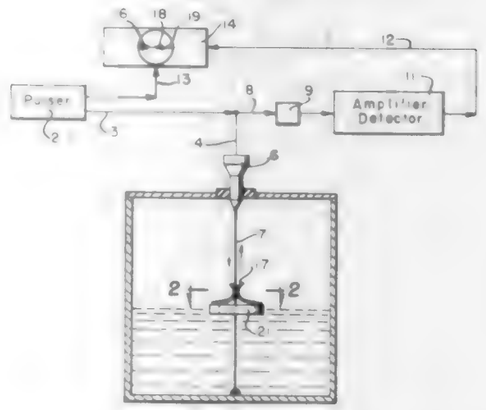
This invention relates to a mass flowmeter. The invention relates more particularly to an instrument for indicating and/or measuring mass flow rate of a fluid. A flowmeter having a thermally responsive element which provides a signal in accordance with the mass rate of flow. The thermally responsive element is connected to a constant current source which raises the temperature of the element above the temperature of the fluid so that changes in the rate of flow will change the impedance of the element as a function of mass rate of flow. The output circuit of the thermal element is connected to a temperature compensating circuit. The compensation circuit means include a constant voltage source and one or more additional temperature sensitive impedance means imposed in the fluid.

3,372,591
FLOWMETER
William D. Clinton, Guilford, Conn., and William P. Somers, Prospect Heights, Ill., assignors to Neptune Meter Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 28, 1965, Ser. No. 490,991
1 Claim. (Cl. 73—231)



A flowmeter of the type wherein a housing forms a fluid conduit for fluid flow therethrough in a fluid zone therewithin, and a bladed shaft is mounted within the fluid zone in the housing including a plurality of vanes responsive to fluid flow parallel to the shaft by causing rotation thereof, further characterized by a pole-piece carried coaxially on the shaft within the fluid zone for rotation therewith and including a plurality of circumferentially spaced teeth disposed outwardly relative to the shaft, a magnetized body carried coaxially on the shaft within the fluid zone for rotation therewith and including a first pole in communication with the pole-piece and a second pole spaced along the shaft therefrom, a magnetically permeable core supported from the housing and directed into the fluid zone toward the shaft at a position therealong occupied by the teeth, the inward end of the core being closely spaced relative to the annulus of the radial extreme of the teeth, and a coil of wire coaxially disposed on the core. In one form the coil of wire is located immediately adjacent to the inward end of the core, while in another form it is located outside of the fluid zone. The hub portion of the shaft to which the vanes are connected has a greater outer diameter than the outer diameter of the pole-piece, and the outer diameter of the magnetized body is smaller than the outer diameter of the pole-piece at the base of the teeth. Since the pole-piece is the rotating body while the magnetically permeable core is the stationary body, the field of flux surrounding the coil opens and closes completely as individual pole-piece teeth, into and out of alignment with the core, thereby giving great sensitivity to the apparatus.

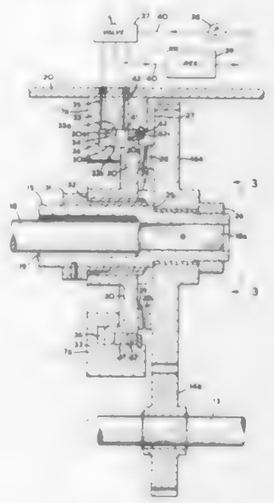
3,372,592
SINGLE-WIRE MECHANICAL WAVE DEPTH GAUGE
William H. Gravert, Port Washington, N.Y., assignor to Marine Moisture Control Company, Inc., Inwood, N.Y., a corporation of New York
Filed Aug. 22, 1966, Ser. No. 573,994
8 Claims. (Cl. 73—313)



1. Means for measuring the distance of the surface of the liquid from a reference point above the liquid surface comprising
(a) transducer means for producing mechanical pulses,
(b) smooth single filament elongated sonic conductor means supplied with pulses by said transducer means for transmitting said pulses from the reference point to the surface of the liquid without producing significant reflections in said conductor means,
(c) sonic reflection means at the liquid surface for reflecting an appreciable portion of the pulse energy back along said sonic conductor means,
(d) and means for measuring the time of travel of said pulses from said reference point to said surface and back to said reference point as an indication of the distance of said surface from the reference point.

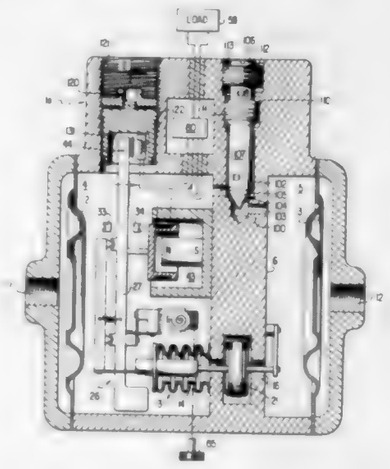
3,372,593
TRANSMISSION WITH FLUID OPERATED CLUTCHES AND TORSION BAR
John E. Becker, Bowmanville, Ontario, Canada, assignor to Eclipse Consultants Limited, Oshawa, Ontario, Canada
Filed Oct. 22, 1965, Ser. No. 500,878
Claims priority, application Great Britain, Oct. 27, 1964, 43,470/64
1 Claim. (Cl. 74—374)

In a speed changing device including at least one clutch device, relative movement between the clutch members is produced by a piston and cylinder coaxial with the clutch members and rotatable relative to one another about their longitudinal axis; the relatively movable cylindrical surfaces parallel to the axis are sealless and fluid is pumped



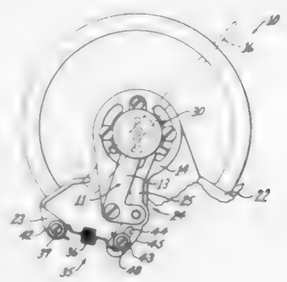
in sufficient quantity to maintain operating pressure despite leakage between the surfaces; the transmission path through the speed changing device includes a torsion bar which is disposed in a hollow shaft carrying respective gearwheels of the device.

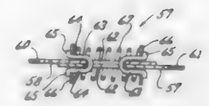
3,372,594
COMPENSATION SYSTEM FOR DIFFERENTIAL PRESSURE MEASURING DEVICE
David A. Bristol, Lynnfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Apr. 11, 1966, Ser. No. 541,774
4 Claims. (Cl. 73—398)



1. In a pressure sensitive device comprising a hollow casing, a pair of flexible isolating diaphragms mounted in the casing and defining therewith a space adapted to contain a liquid, a rigid partition in the casing dividing the space into two chambers, a flexible pressure-sensitive device having a first side exposed to liquid pressure in one chamber and a second side exposed to liquid in the other chamber and means for converting a pressure differential on the pressure-sensitive device to an electrical output signal, the improvement of a compensation system for the pressure sensitive device for correcting errors caused by ambient temperature and static pressure changes including:
(A) valve means having an open and closed position located in the casing,
(B) first conduit means in the casing from one of the chambers to said valve means,
(C) second conduit means in the casing extending from the other chamber to said valve means, said valve means connecting said first and second conduit means whereby liquid in said chambers can be transferred from one chamber to the other when the valve is open.

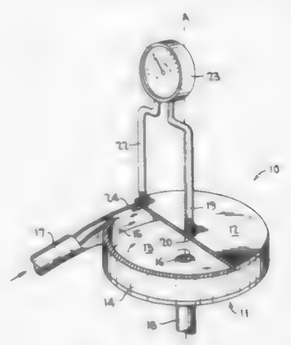
3,372,595
GAGE CONSTRUCTION AND PARTS THEREFOR OR THE LIKE
Charles H. Perkins, Knoxville, Tenn., assignor to Robertshaw-Fulton Controls Company, Richmond, Va., a corporation of Delaware
Original application Feb. 11, 1963, Ser. No. 257,423, now Patent No. 3,257,852, dated June 28, 1966. Divided and this application Oct. 21, 1965, Ser. No. 499,717
3 Claims. (Cl. 73—414)





This disclosure relates to means for interconnecting an actuating end of a condition responsive element to a gear train means of an indicating pointer arrangement to dampen abrupt movements therebetween to prevent adverse effects of such abrupt movement on the gear train elements, the interconnecting means comprising spring linkage means that absorb the abrupt movement of the actuating end of the condition responsive device while subsequently returning to its normal position to properly indicate the change in the sensed condition.

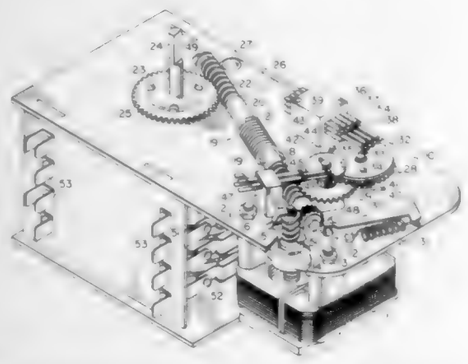
3,372,596
METHOD AND DEVICE FOR MEASURING THE ROTATION OF A BODY
Charles L. Keller, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 27, 1964, Ser. No. 406,940
8 Claims. (Cl. 73—505)



An improved pure fluid rotation sensor utilizing a fluid vortex amplifier to measure the rate and direction of rotation. The fluid in a vortex chamber has a rotational mo-

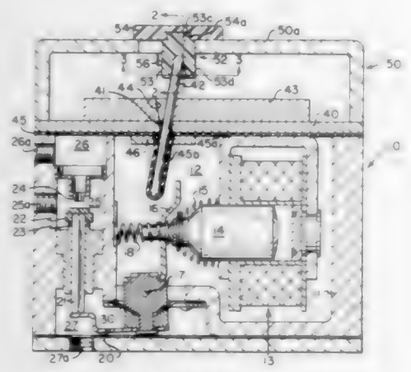
tion imparted to it and a static pressure sensor is used to measure the tangential component of the fluid motion. Rotation of the chamber changes the tangential velocity of the fluid and the magnitude and direction of the rotation can be measured by observing the changes in pressure at the sensor. A pair of stacked fluid vortex amplifiers can be used for increased sensitivity.

3,372,597
TIMER HAVING AN ADJUSTABLE TIME INTERVAL AND A RAPID ADVANCE
Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Feb. 16, 1966, Ser. No. 527,899
10 Claims. (Cl. 74—3.52)



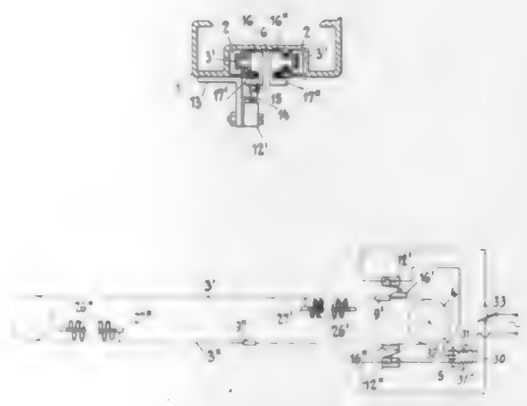
A timer having an intermittent driving mechanism consisting of a subinterval switching means with an adjustable time interval and a rapid advance. The timer has a single drive mechanism for step advancing the timer through the programmed timing cycle at predetermined time intervals and for rapidly advancing the timer through certain cycles or to a particular cycle.

3,372,598
MOTION TRANSMITTING APPARATUS
Lamar J. Wall, Seal Beach, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 1, 1966, Ser. No. 524,122
9 Claims. (Cl. 74—18.1)



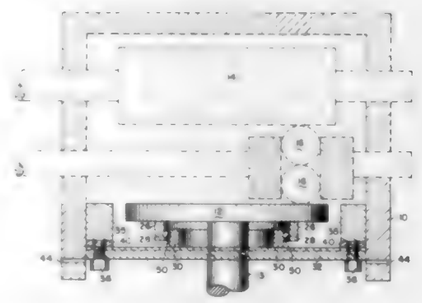
A three-way pilot valve with a solenoid operator disposed in a sealed chamber and with a manual actuator for manually operating the solenoid and thereby the valve. This manual actuator including a lever which extends through a wall of the chamber, is pivotable about an axis parallel to the wall, and is axially movable in a direction generally normal to the wall, an operator which engages the outer end of the lever for pivoting the lever and is movable only in a plane parallel to the wall and between two end positions on opposite sides of a position wherein the lever is normal to the wall, and a flexible diaphragm member including a portion surrounding the inner end of the lever and sealing the chamber therearound and, in addition, biasing the lever outwardly from the chamber to provide over-center action as the operator is moved from one end position to the other.

3,372,599
ELECTRICALLY DRIVEN DISPLACING MECHANISM
Konrad Bratschi, Talgutweg 2, Ittigen, near Bern, Switzerland
Filed Jan. 10, 1966, Ser. No. 519,547
Claims priority, application Switzerland, Jan. 13, 1965, 424/65
8 Claims. (Cl. 74—89.2)



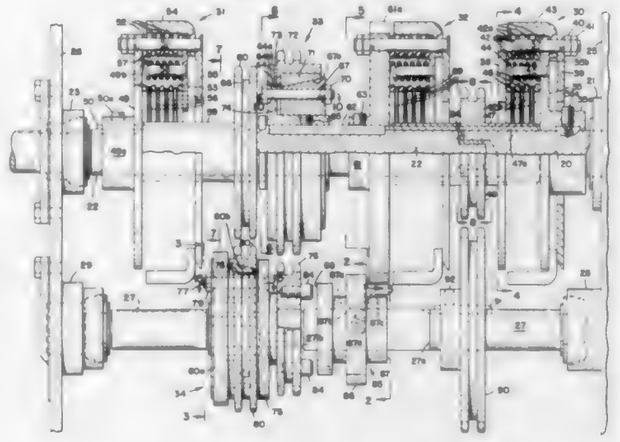
An electrically driven displacing mechanism, for example for curtains, accordian-folded partitions, drawers, or display of advertising aids, which are guided along at least one rail by means of carrying elements, which mechanism comprises an endless conveying band or web in two sections extending along the rail, and entraining elements guided on the rail for conveying action back and forth, as well as two electrical terminal switches in the circuit of the electrical drive, which are actuated automatically corresponding to the two predetermined final conveying positions.

3,372,600
COMPUTING INTEGRATOR
Willard J. Opocensky, Glendale, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed Sept. 28, 1965, Ser. No. 490,885
4 Claims. (Cl. 74—194)



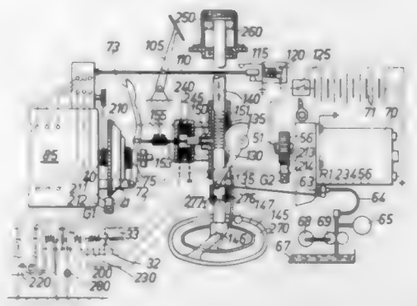
A compact construction for a ball-and-disc computing integrator. A housing plate supporting the disc thrust bearing is thinned adjacent one edge to provide a flexure section, and the opposite edge is urged toward the disc by a leaf spring, causing the plate to exert loading pressure on the disc through the thrust bearing.

3,372,601
AUTOMATIC TRANSMISSION
Dale C. Orcutt and Claud J. Dry, Athens, Ohio, assignors to Joart Capital Corporation, New York, N.Y., a corporation of New York
Filed Sept. 29, 1965, Ser. No. 491,296
14 Claims. (Cl. 74—336)



An automatic transmission having an input and an output shaft, a first centrifugally actuated clutch having its driving plate rotatable with the input shaft, a second centrifugally actuated clutch having its driving plate rotatable with the output shaft, rotatable means for preventing relative rotation of the driven clutch plates of the first and second centrifugally actuated clutches, an overriding clutch having a driven plate rotatable with the output shaft, and means for transmitting rotation of the rotatable means to the driving clutch plate of the overriding clutch and reducing the rate of the rotation.

3,372,602
CLUTCH CONTROL APPARATUS
Hermann Papst, 7742 Black Forest, St. Georgen, Germany
Continuation-in-part of application Ser. No. 308,622, Sept. 11, 1963. This application May 26, 1966, Ser. No. 553,204
20 Claims. (Cl. 74—339)

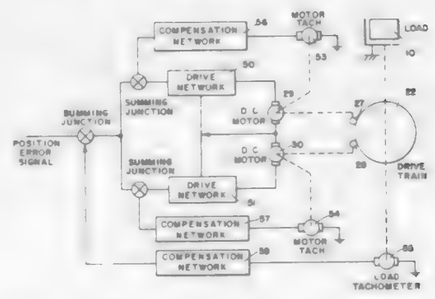


1. Clutch control apparatus for a transmission, comprising, in combination, an engine shaft means; a transmission shaft means adapted to be connected with a transmission; clutch means connecting said engine shaft means and transmission shaft means; electromagnetic operating means for operating said clutch means; first and second generator means driven from said engine shaft means and said transmission shaft means, respectively, to produce first and second voltages respectively proportional to the rotary speeds of said shaft means; differential control means receiving said first and second voltages and including control switch means having open and closed switching positions and being responsive to a difference between, and to equality of said first and second voltages to assume one or the other of said switching positions, said control switch means being connected into the circuit of said electromagnetic operating means to energize and de-energize the same in said switching positions, respectively, so as to cause engagement or disengagement of said clutch means; and a manually operable means connected with said control means for actuating said control switch means and thereby said electromagnetic operating means to disengage said clutch means so that said engine shaft means and said transmission shaft means rotate at different speeds and said control means receive different voltages so that said control switch means cause said clutch means to remain disengaged until said engine shaft means and said transmission shaft means rotate at substantially the same speed and said voltages are substantially equal whereupon said control switch means causes engagement of said clutch means.

ERRATUM

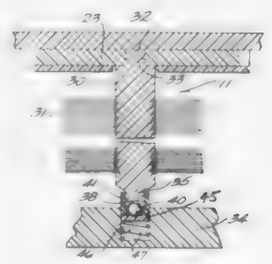
For Class 74—376 see:
Patent No. 3,372,593

3,372,603
ANTENNA DRIVE SYSTEM
Menahem Suliteanu, Palo Alto, and Frederick M. Fonda, Jr., San Jose, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,555
9 Claims. (Cl. 74—388)



A cylindrical drum of a rotatable antenna is driven by engagement of the drum by a pair of opposed reversible endless belt drive assemblies which form part of a closed loop servo system. The periphery of the drum comprises a thin layer of elastic material which is bonded to a hard cylindrical surface and viscously damps resonance effects between driving and driven structures.

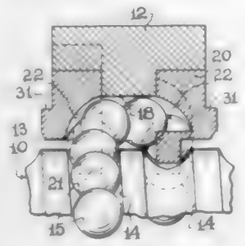
3,372,604
ROTARY SHAFT MOUNTING
Walter J. Perry, Brookfield, Wis. (1315 S. 124th St., West Allis, Wis. 53214)
Filed June 28, 1966, Ser. No. 561,169
9 Claims. (Cl. 74—421)



1. In a mounting for rotatably supporting a shaft in a frame; actuating means coupled to a first end of the shaft for actuating the shaft in its rotary movement, the shaft being slidable relative to said actuating means for shifting the shaft out of engagement therewith; a bearing rotatably

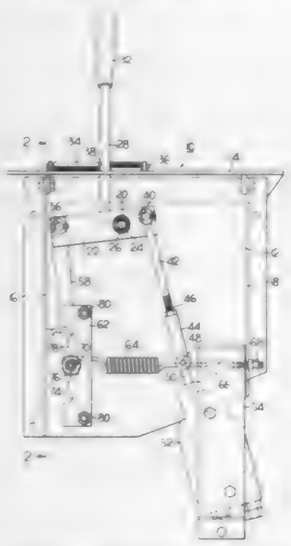
supporting the second end of said shaft; and yieldable means urging the shaft axially to retain the first end of the shaft in engagement with said actuating means, said shaft being movable axially against the force of said yieldable means to move the first end of the shaft out of engagement with said actuating means and render its second end disengageable from said bearing for removing the shaft from the frame.

3,372,605
BALL-BEARING SCREW AND NUT MECHANISM
Harry Orner, 2479 Glen Canyon Road, Altadena, Calif. 91001
Filed Oct. 19, 1965, Ser. No. 497,834
9 Claims. (Cl. 74—459)



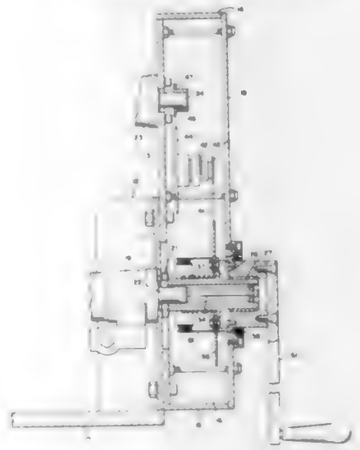
A ball-bearing screw and thin nut mechanism with a simple recirculating passage in the nut for the balls to recirculate from one end of the ball race load groove to the other end. The recirculating passage is formed as a channel through the nut at the internal helical groove. Pick-up structures located on both sides of the nut at the junction of the recirculating passage and the load groove to transfer the balls to and from the load groove include an inclined finger extending into the load groove of the screw and have a curved surface normal to the inclined surface to guide the balls on the inclined surface from the load groove to the channel, and from the channel to the load groove at the opposite end.

3,372,606
HYDRAULIC VALVE CONTROL LEVER
Laurence R. McGrath, Milwaukee, and Robert A. Moore, Waukesha, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 13, 1966, Ser. No. 578,624
9 Claims. (Cl. 74—491)



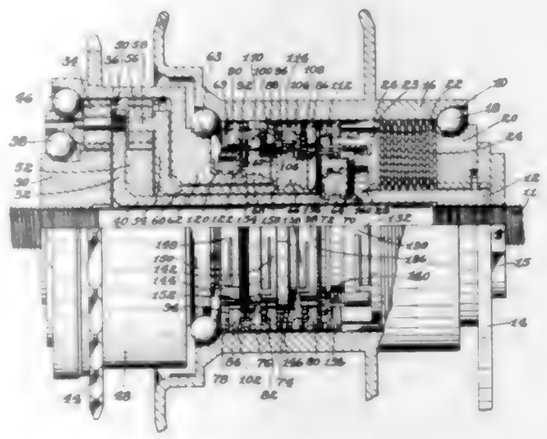
1. A control device comprising a support, a pivot on said support, a rockable lever assembly journaled on said pivot, a detent link pivotally connected to said lever assembly at a point spaced from said pivot and extending transversely thereof, a detent cam element and a detent cam follower element, one of said elements being fixed on said support and the other of said elements being carried by said detent link, resilient means connected with said link, extending transversely thereof, and anchored to said support in position to continuously urge said cam element and said cam follower element into yielding contact with each other, and means connected to said lever assembly and to a controlled element for actuating said element by reason of rocking of said lever assembly.

3,372,607
SELECTIVE DRIVE MECHANISM
Francis M. Lathrop II, and Lyle R. Van Arsdale, Houston, Tex., assignors to M & J Valve Company, Houston, Tex., a corporation of Delaware
Filed Nov. 8, 1965, Ser. No. 506,672
7 Claims. (Cl. 74—625)



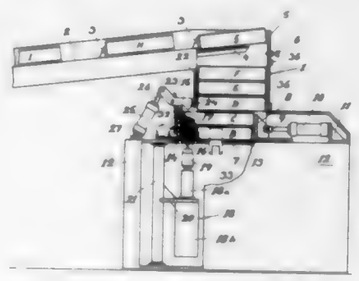
Selective drive means for either manual or motor operation of a hydraulic pump or like device. Has clutch parts including magnetic means for insuring disengagement of the motor during manual operation, the magnetic means being automatically released when the motor is energized.

3,372,608
THREE-SPEED HUB GEARING FOR VELOCIPEDES
Hollis K. Gleasman, Elmira, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed June 13, 1966, Ser. No. 556,961
10 Claims. (Cl. 74—750)



8. In a semi-automatic three-speed hub and brake for velocipedes and the like the combination of:
an axle means;
sprocket means rotatable relative to said axle;
gear means rotatable by said sprocket means;
first, second, and third threaded shaft means rotatable at different speeds by said sprocket and gear means;
first, second and third clutch members threaded on their respective shaft means;
first, second and third hub driving means adapted to be engaged by their respective clutch members;
annular indexing means having a three-step selectively-variable axial extent disposed within the hub;
retarder means for causing the axial movement of the clutch members on their respective screwshaft means;
spring means for biasing said first and second hub driving means relative to their respective clutch members;
said indexing means and said retarder means operative to selectively position said driving clutch members and said first and second hub driving relative to each other for driving the hub at three different gear ratios; and
brake means interconnecting the hub and axle for stopping the rotation of the hub relative to the axle.

3,372,609
METHOD FOR DRILLING HOLES IN ARTICLES, ESPECIALLY IN BOOKS, AND APPARATUS FOR UTILIZING THE METHOD
Gösta E. Wingne, Sigtunagatan 8, Goteborg, Sweden
Filed Mar. 22, 1965, Ser. No. 441,739
10 Claims. (Cl. 77—5)



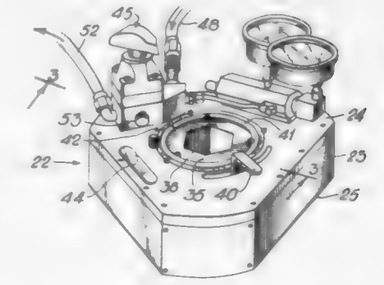
Apparatus for drilling holes in uniform articles such as thick books in which a number of books are stacked in a collecting zone or hopper and allowed to fall downwardly by gravity with further books being fed to the zone as the lowermost book, after drilling, is discharged from the zone or hopper. The drill is introduced into the lowermost book from below in a position diagonally inwards from one corner of the bottom of the zone or hopper and when drilling is initiated into the bottom of the lowermost book that one and the immediately superposed book are locked in stepped or offset relation relative to the corner so as to compensate for any drill deflection during drilling, whereby when the drill issues through the upper side of the lowermost book and penetrates initially into the bottom side of the superposed book and is then withdrawn from the zone and the superposed book then falls into the bottom of the zone so that during a subsequent drilling operation through said book the drill will enter the hole initially formed therein.

3,372,610
ROTARY CUTTING TOOL
Ture Axel Johansson, Inagogatan 12, Goteborg, Sweden
Filed Oct. 22, 1965, Ser. No. 502,089
4 Claims. (Cl. 77—58)

A rotary cutting tool in which a cutter is arranged swingable about a pivot eccentrically located in relation to the axis of rotation of the tool in such a manner that the cutter will be swung out to a working position due to centrifugal action. The cutter is located in a transverse recess in a spindle constituting the main part of the tool and to make possible an easy exchange of the cutter, the recess is longer in the axial direction of the spindle than the thickness of the cutter. One part of the spindle is integral with the cutter and the combined length of this

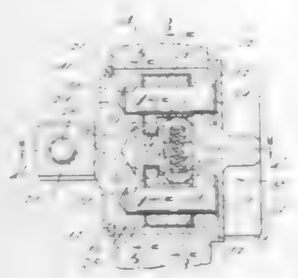
pivot part and the thickness of the cutter is less than the axial length of the recess. The remaining part of the spindle includes a pin insertable through a bore in the spindle and retained therein in any suitable manner.

3,372,611
TORQUE WRENCHES AND TEST STANDS
Anthony E. Amanti, Westfield, and Ernst Krokenberger, Springfield, Mass., assignors to Advance Hydraulics, Inc., Westfield, Mass.
Filed July 11, 1966, Ser. No. 564,367
11 Claims. (Cl. 81—60)



1. A torque wrench comprising, in combination:
a casing having a central aperture and a plurality of symmetrically spaced cavities extending radially therefrom,
a torque ring rotatably supported in the central aperture and having an internal work-piece engaging aperture incorporating torque-transmitting means,
reversible force-producing actuator means adjacent to each cavity,
a spider
rotatably and concentrically supported in the central aperture,
having a corresponding plurality of radial arms each extending into one of the spaced cavities in the casing for rotary driving engagement by the actuator means,
and with reversible, toggle-shifted torque-transmitting pawl means for connecting the spider and the torque ring in rotary driving engagement selectively in a clockwise or counterclockwise direction,
and confining means radially outwardly of the arms restricting the lines of action of the forces transmitted by the actuator means to the spider arms to substantially tangential, non-radial directions.

3,372,612
PAWL TYPE RATCHET WRENCH
Matt T. Rozmus, Barneveld, N.Y., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 540,024
4 Claims. (Cl. 81—62)



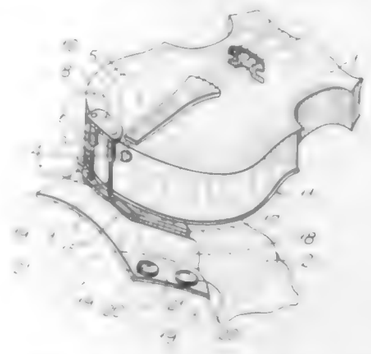
A ratchet wrench of the pawl type in which a driver is positioned within the head of a wrench body and carries a plurality of pawls to transmit torque between the driver and the wrench body. A selector is mounted on the driver and is angularly shiftable between two different positions to bias the pawls to a selected operating position. The selector is held in assembly with the driver by the engagement of the pawls with a shoulder on the selector. The driver is held in the wrench head by a shoulder on the selector and a retaining ring.

3,372,613
LATHE
Heinrich Feld, Kirchen (Sieg), Germany, assignor to H. A. Waldrich G.m.b.H., Siegen, Westph: lia, Germany, a German concern
Filed Aug. 23, 1965, Ser. No. 481,586
Claims priority, application Germany, Aug. 25, 1964, W 37,438
1 Claim. (Cl. 82—24)

A support for large lathes used for turning workpieces with large differences in diameter, wherein one or more cross slides are located between the lathe carriage and the compound slide carrying the rotary tool supporting member, the cross slide having guides upon its upper and lower surfaces which extend tangentially to the workpiece being treated.

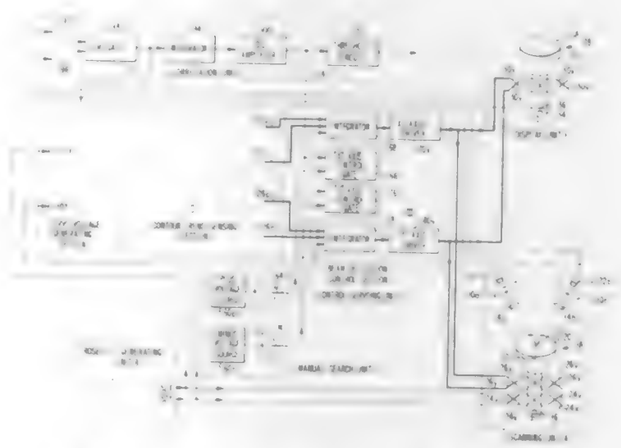
3,372,614
VIOLIN SUPPORT
Jon Galster, Solnavej 33, Copenhagen, Soborg, Denmark
Filed Nov. 28, 1966, Ser. No. 597,448
Claims priority, application Denmark, Nov. 30, 1965, 6,144/65
5 Claims. (Cl. 84—280)

1. A violin support for supporting a violin against the humeral region of a player and of the kind retained during the use by clamping means engaging the lower part of the violin body, characterised in that an adjustable leaf hinge is attached to the underplate of the clamping means, which underplate is resting against the bottom edge of the violin, one leaf of the said hinge being



screwed, soldered or welded to the said underplate, its other leaf being adapted to be retained detachably to a cushion which is attached to the humeral region of the player or to a piece of clothing surrounding the said humeral region.

3,372,615
APPARATUS FOR PLOTTING CONTOUR MAPS AUTOMATICALLY EMPLOYING A CATHODE RAY TUBE
Morris M. Birnbaum, Pasadena, Le Roy J. Ridenour, Burbank, and Phil M. Salomon, Sunland, Calif., assignors to General Precision Systems Inc., a corporation of Delaware
Filed Mar. 28, 1963, Ser. No. 268,802
10 Claims. (Cl. 88—14)

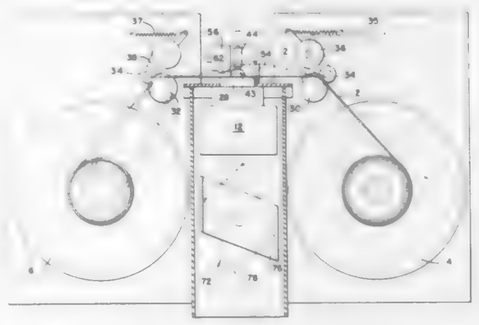


1. In an automatic contour plotter an arrangement comprising a cathode ray tube having a phosphor screen, means for projecting a beam of electrons onto said screen to produce a luminous point thereon, and means operable by the application of electric currents for deflecting said beam to shift the luminous point on said screen; means for scanning two stereoscopically related diapositives of a terrain including a pair of lenses placed to focus light rays from the luminous point in a predetermined relation upon said diapositives, and photosensitive devices exposed to the light rays focused upon said diapositives to produce output signals fluctuating in proportion to the transparency of the spots encountered by the light rays on said diapositives; first means for supplying such currents to said beam deflection means to shift said beam across said screen; means operative in response to correlation between the output signals of said photosensitive devices for generating signals indicative of the discovery of a spot of the desired contour on the diapositives; means operative in response to signals generated by said correlation signal generating means for disabling said first deflection current supply means; second means for supplying currents to said beam deflection means for deflecting said beam in a repetitive search pattern about a center point thereof to cause the light rays focused upon the diapositives to scan the areas around discovered contour spots; means utilizing said second deflection currents and the output of said correlation signal generating means for generating servo currents effective upon application to said beam deflection means to confine said beam to a position of deflection wherein the light rays focused upon the diapositives impinge upon corresponding spots of the desired contour; means for applying said servo currents to said beam deflection means; and means utilizing said second deflection currents and the outputs of said correlation signal generating means for sensing the direction of the desired contour and for curtailing the application of said servo currents to said beam deflection means so that the remaining servo currents shift the light point on the screen of said tube in such a manner that the light rays focused upon the diapositives follow corresponding contours of said diapositives.

3,372,616
OPTICAL REPRODUCTION APPARATUS
William E. Morrison, 3 Sleepy Oaks Lane, Houston, Tex. 77024
Filed Oct. 2, 1963, Ser. No. 313,237
16 Claims. (Cl. 88—24)

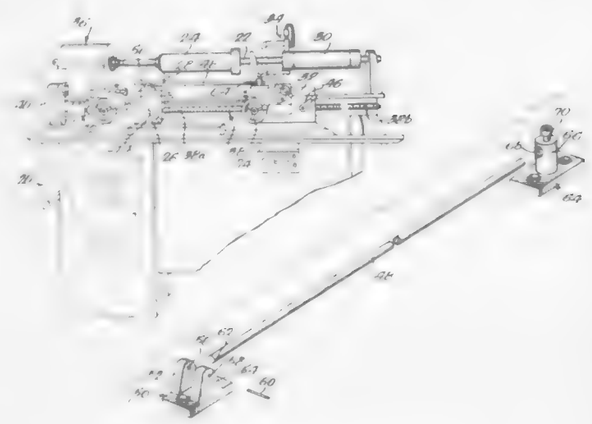
An optical apparatus for illuminating a selected area and for viewing and/or recording the area illuminated along the same line of sight.

3,372,617
PHOTOGRAPHING AND DEVELOPING APPARATUS
William A. Pfaff, 12 Mary's Lane, Centerport, N.Y. 11721
Filed July 15, 1965, Ser. No. 472,275
10 Claims. (Cl. 88—24)



7. Apparatus for microfilming documents, comprising in combination, a camera lens system, film feed and take-up reels, film developing means, a document support platform in alignment with said lens system, a radiant energy-emitting source, and mechanical convection means for directing a flow of air over said radiant energy-emitting source and downwardly upon said document support platform, photosensitive film being movable from said feed to said take-up reel, said film being arranged to pass behind said lens system for exposure and thereafter to pass spacedly beneath said film developing means, and lift means adapted to raise a portion of said film into contact with said film developing means subsequent to exposure of said portion of the film.

3,372,618
LEAD SCREW DRIVE MECHANISM
William J. Barron, Peru, Ill., assignor to Graphic Electronics, Inc., La Salle, Ill., a corporation of Delaware
Filed Jan. 18, 1966, Ser. No. 521,309
5 Claims. (Cl. 90—13.3)

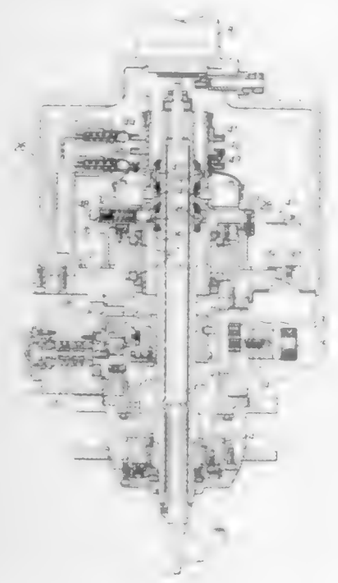


1. In an engraving machine of the type having a cutter carriage and a scanner carriage mounted on a common lead screw which is oppositely threaded at its two ends for advancing said carriages in opposite directions upon rotation of said screw, and manual control means on each carriage for selectively engaging and disengaging the same with said lead screw, the improvement comprising, in combination, first mounting means on one of said carriages, second mounting means on the other of said carriages, and a rigid connecting member extending between said first and second mounting means, one end of said connecting member being secured to said first mounting means, and the other end of said connecting member being releasably secured to said second mounting means, whereby upon engagement of a selected one and disengagement of the other of said manual control means and rotation of said lead screw the engaged one of said carriages will be advanced by said lead screw and will act through said rigid connecting member to advance the other of said carriages in the same direction.

3,372,619
TRACER VALVE CONTROL UNITS
Brian M. Clegg, Leeds, England, assignor to Hayes Engineers (Leeds) Limited, Leeds, England, a British company
Filed Apr. 29, 1966, Ser. No. 546,390
Claims priority, application Great Britain, May 11, 1965, 19,794/65
10 Claims. (Cl. 90—62)

1. Tracer valve control unit including a housing, a valve operating element mounted in bearing means in the housing, fluid flow control valve units operable by lateral deflections of said element, a stylus associated with one

end of the element to be engaged with a master profile and deflect the element, a hollow carrier member disposed about said element and rotatable about a constant axis, at least one electric motor for driving said member, electrical switches radially disposed about said carrier member and connected into a control circuit for said motor, bias applying means on said carrier member for constantly urging said valve operating element towards

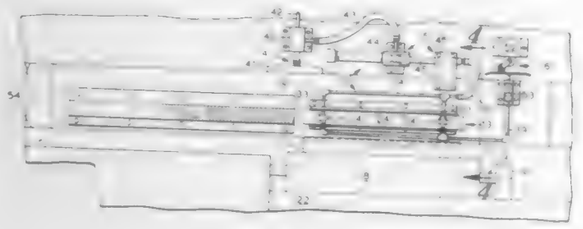


at least one of said switches, electrical supply means in said motor control circuit for said switches, said switches being adapted to co-act in controlling the supply of electrical power to the driving motor and thus rotation of the carrier member which varies the radial position of said bias applying means to control the lateral movements of the valve operating element in conjunction with the master profile.

3,372,620
INTERFERENCE DETECTION MECHANISM FOR MACHINE TOOLS

Charles F. Stuemer, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., a corporation of Ohio

Filed Mar. 25, 1966, Ser. No. 537,505
4 Claims. (Cl. 90—66)



1. In a machine having a pair of relatively movable members defining a base member and a slide member, one of said pair of members having apparatus for mounting a workpiece thereon for engagement with a tool fixed on the other member thereof, a mechanism for signalling excessive workpiece to tool interference before contact therebetween comprising:

(a) a probe mechanism attached to one member of said pair having a deflectable sensor adapted to engage the workpiece when said members are in a predetermined relative position,

(b) a power supply included in the other of said pair of members,

(c) a coupling unit having elements received on each member of said pair, said elements adapted to mate when the members of said pair are in said predetermined relative position,

(d) transmission means for connecting the elements of said coupling unit on the one and other of said pair, respectively, to the probe mechanism and power supply for transmission of power to said probe mechanism when the members of said pair are in the predetermined relative position,

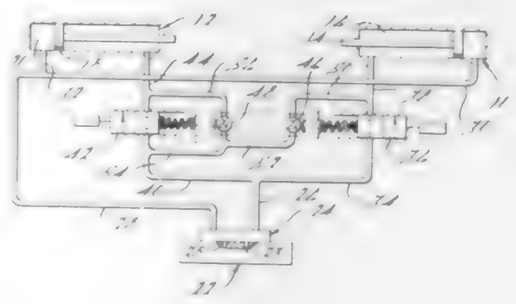
(e) control means for producing an interference signal when power is connected thereto, and

(f) circuit means for connecting power to said control means from said probe mechanism when said sensor is held in a predetermined range of positions by the workpiece.

3,372,621
PORTABLE POWER SUPPLY WITH SELECTOR VALVE

Louis E. Colosimo, Macomb, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan

Filed Apr. 5, 1966, Ser. No. 540,392
10 Claims. (Cl. 91—36)

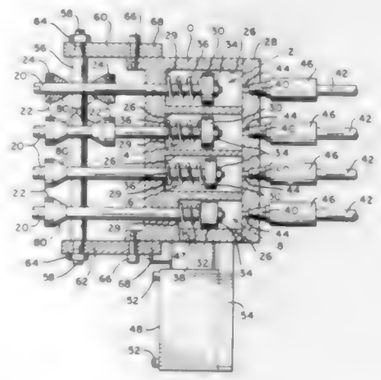


Apparatus for use with tools actuated from a common source of fluid pressure permitting actuation of only one tool at a time.

3,372,622
MULTIPLE PRESSURE RESPONSIVE CONTROL APPARATUS

Edward P. Bullard III, Fairfield, Conn., assignor to The Bullard Company, Bridgeport, Conn., a corporation of Connecticut

Filed May 18, 1966, Ser. No. 551,026
10 Claims. (Cl. 92—5)



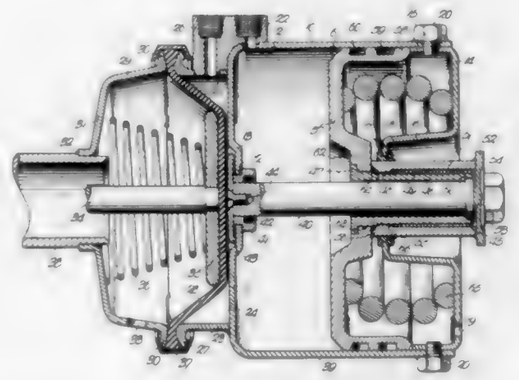
1. Multiple pressure responsive control apparatus comprising a plurality of fluid pressure-sensing devices, each

having a reciprocably mounted shaft; means for fixedly mounting said sensing devices with the axes of reciprocation of said shafts disposed in substantially parallel relation in a single plane; an actuator rod disposed in a first position adjacent to the plane of movement of, but spaced from, said shafts; means mounting said rod for limited movement from said first position to a second position in a direction away from the plane of movement of said shafts; a control device; means connected to said rod for actuating said control device when said rod is moved in said direction from said first to said second position; means for connecting each of said sensing devices to a separate source of pressurized fluid; pressure responsive means in each sensing device for moving the shaft thereof in response to changes in, and maintaining the linear position of said shaft in accordance with the magnitude of, the fluid pressure of the source to which the sensing device is connected; and at least one actuating member mounted on each of said shafts and having a surface engageable with said rod when its respective shaft is reciprocated to a predetermined position relative to said rod, said actuating member surfaces of said sensing devices being located on their respective shafts so as to be out of contact with said rod when said shafts are reciprocated between positions corresponding to predetermined magnitudes of the fluid pressure of their respective sources, an actuating member surface of any one of said sensing devices being adapted to engage said rod independently of the positions of the shafts and actuating member surfaces of the other of said sensing devices, and to independently move the rod in said direction from said first to said second position to actuate said control device when the shaft of said one sensing device is reciprocated to a position corresponding to a fluid pressure of its respective source which deviates from a predetermined magnitude irrespective of whether any of said actuating member surfaces of said other of said sensing devices is in contact with said rod.

3,372,623
BRAKE OPERATOR MECHANICAL RELEASE

Charles G. Wearden, Prairie Village, Kans., and Robert H. Kline, Cherry Hill, N.J., assignors, by mesne assignments, to Certain-Teed Products Corporation, Ardmore, Pa., a corporation of Maryland

Filed Jan. 19, 1966, Ser. No. 521,671
6 Claims. (Cl. 92—63)

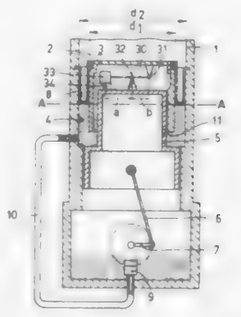


A spring emergency and parking brake of the "add-on" or "piggy-back" type—that is, the power spring chamber outboard of the service chamber with respect to the brake, per se, and a mechanical release for said brake comprising means for decoupling the brake from the expanded power spring, said means also providing fluid recompression of the power spring until the same is restored to its original condition.

3,372,624
ROLLING DIAPHRAGM DEVICE WITH INERTIA FORCE COMPENSATING MEANS

Johan Adriaan Rietdijk, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 30, 1965, Ser. No. 510,499
Claims priority, application Netherlands, Dec. 10, 1964, 64—14,339
7 Claims. (Cl. 92—84)



A cylinder with two out-of-phase pistons reciprocating therein having a rolling diaphragm seal between one piston and the cylinder and an inertia force compensating means connected to both pistons and being either a mass and a pivoting lever, or a cable-pulley system.

3,372,625
EXTERNAL GUSSETING PROCESS

Thomas E. Simecek and Ronald G. Simecek, Cleveland, Ohio, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 24, 1965, Ser. No. 458,214
3 Claims. (Cl. 93—35)

A method and apparatus for continuously producing one or two gusset folds in each of one or more flattened, continuous, tubular films wherein the film is internally inflated as it passes through a zone between two pinching seals and subjected to a gusset fold producing means while in that inflated zone.

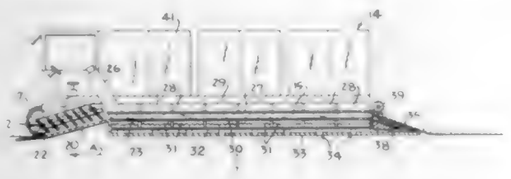
3,372,626
ROAD LAYER AND ITS MANUFACTURE

Richard Z. Smarzak, New York, N.Y., assignor of one-half to Jack Borgos, New York, N.Y.

Filed Aug. 5, 1965, Ser. No. 477,470
3 Claims. (Cl. 94—40)

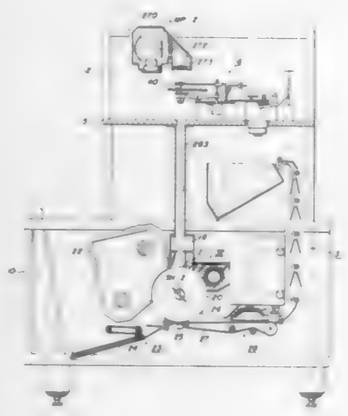
A machine for producing a hardening road layer includes a vehicle that scoops up sand placed in front, heats

and melts the sand and deposits the molten sand at the rear. The method provides for the scooping, melting of



the sand and the deposit of the molten sand as the top road surface.

3,372,627
MICROFICHE REPRODUCTION MACHINE
Thomas C. Murray, Rochester, and Russell R. Roberts, Ontario, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,325
4 Claims. (Cl. 95—1.7)



1. In an electrostatographic machine for producing enlarged reproductions of the microimages arranged in columns and rows on a microfiche card onto sheets of copy paper the combination of

an electrostatographic surface,

means for moving the surface at a predetermined rate,

holding means for supporting the microfiche card in a scanning plane,

first indexing means for moving said holding means in equal incremental steps each the width of a microimage along each row of the card,

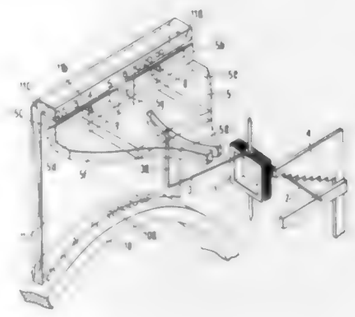
second indexing means for moving said holding means in equal incremental steps each the length of a microimage along each column of the card,

a projection system having an optical axis extending through the microfiche card adapted for projecting the illuminated images thereof onto the electrostatographic surface during movement thereof,

drive means arranged for producing relative movement between the optical axis and said holding means in said scanning plane for producing scanning of each of the microimages,

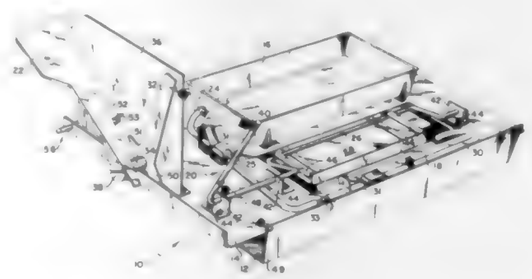
and control means connected to said indexing means and said drive means and adapted to activate the same automatically in a predetermined sequence of indexing movements coupled with scanning movements thereby effecting programmed reproduction of a preselected number of microimages.

3,372,628
OPTICAL APPARATUS
Franz W. R. Starp, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier G.m.b.H.
Filed Jan. 19, 1966, Ser. No. 521,610
Claims priority, application Germany, Jan. 21, 1965, G 42,621
11 Claims. (Cl. 95—44)



5. Optical apparatus for indicating the depth of focus of a photographic lens for a given aperture with respect to a focussing scale, comprising a pointer moving in accordance with the lens aperture, optical means for producing two virtual images of said pointer in a viewing field, a range scale moved by the focussing action of said lens, and means for viewing said scale simultaneously with said virtual images in said viewing field.

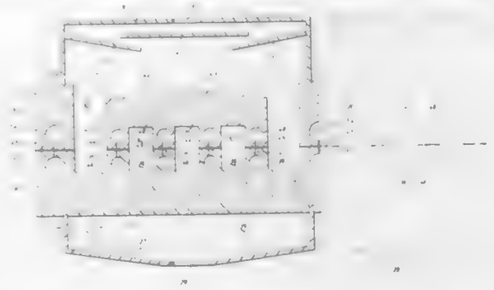
3,372,629
PHOTOCOPY DEVICE
Edson G. Moshier, Jamesville, N.Y., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed Apr. 15, 1965, Ser. No. 448,486
2 Claims. (Cl. 95—89)



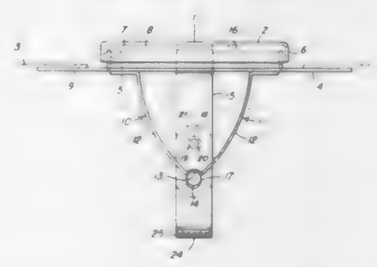
A photocopy machine having a chemical solution handling device for transferring the solution from a storage container to a processing tray and returning the solution back to the container. The device includes a handle operated spring system for biasing a pressure plate against a flexible container to force the solution into the tray at a predetermined rate.

3,372,630
APPARATUS FOR PROCESSING LIGHT SENSITIVE FILM
Gunther Schmidt, Scarborough, Ontario, Canada, assignor to Houston Schmidt Limited, Toronto, Ontario, Canada
Filed June 4, 1965, Ser. No. 461,463
15 Claims. (Cl. 95—94)

A strip of light sensitive film having two major surfaces and two side edges is processed in apparatus including a housing having walls that define at least one treating chamber. The strip is passed into the treating chamber through a slit in one wall and out of the treating chamber through a slit in another wall. A processing liquid is kept in the treating chamber. A gas is blown through the slits into the treating chamber and prevents the processing liquid from escaping via the slits, the gas being vented from the treating chamber. A dryer is positioned to receive the wet strip processed in the treating chamber. The dryer includes a number of spaced apart members having slits extending therethrough through which the strip passes. A strip drying gas is blown into the slits and is directed against the two major surfaces of the strip and causes the strip to float within the slits extending through the aforementioned members.



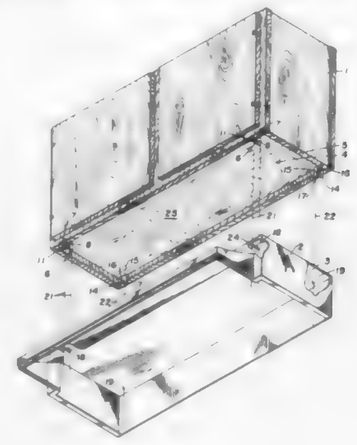
3,372,631
HINGELESS VENTILATOR
Daniel Allcott Kelly, Salem, Va., assignor to Graham-White Sales Corporation, Salem, Va., a corporation of Virginia
Filed Apr. 19, 1966, Ser. No. 543,737
7 Claims. (Cl. 98—2)



1. In a hingeless ventilator for ventilating a compartment through an opening in a wall thereof, the ventilator having a closure member swingable against a side of said wall for opening and closing said opening, spaced guide means fixed to and instanding from a side of said wall opposite said first-named side, guide rod means riding on said guide means, and spaced arm means fixed to said closure member and extending through said opening connecting said guide rod means to said closure member, the improvement comprising means spaced from said guide rod means and closure member and bridging said arm means therebetween, and means connecting said guide rod means and bridging means intermediate said arm means for producing a tensile force for urging said guide rod means and closure member respectively against said guide means and said wall and thereby holding said closure member in a selected position.

3,372,632
CABINET MOUNTED HOOD ASSEMBLY
James E. Stalker, Richardson, Tex., assignor to Home Metal Products Company, Plano, Tex., a corporation of Texas
Filed June 6, 1966, Ser. No. 555,447
6 Claims. (Cl. 98—115)

A kitchen hood which is attached underneath a cabinet by a bracket secured to the front of the cabinet bottom and by a malleable tab secured to the back of the cabinet bottom. Slots in the hood are received by a diverging recess in the bracket and receive a portion of the tab which is then bent to provide a secure attachment.



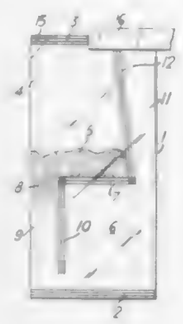
3,372,633
WHISKEY BARREL
Leo A. Horlander, Jr., Louisville, Ky., assignor to Brown-Forman Distillers Corporation, Louisville, Ky., a corporation of Delaware
Filed Aug. 19, 1966, Ser. No. 573,613
14 Claims. (Cl. 99—277.1)

This invention is directed to improved whiskey barrels capable of naturally acceleating the aging of whiskey by providing at least a portion of the internal surfaces with contours defining a multiplicity of spaced mounds, ridges, corrugations, lands or grooves prior to being charred to create greatly increased areas of char and of the underlying layer of red caramel in order to enhance the breathing of whiskey through the walls of the barrels.

3,372,634
COFFEE MAKERS
Georges Frank Brinkman, Tadworth, and Abram Games, London, England, assignors of one-half to Cona, Limited, London, England
Filed Apr. 6, 1964, Ser. No. 357,671
Claims priority, application Great Britain, Apr. 10, 1963, 14,375/63
15 Claims. (Cl. 99—292)

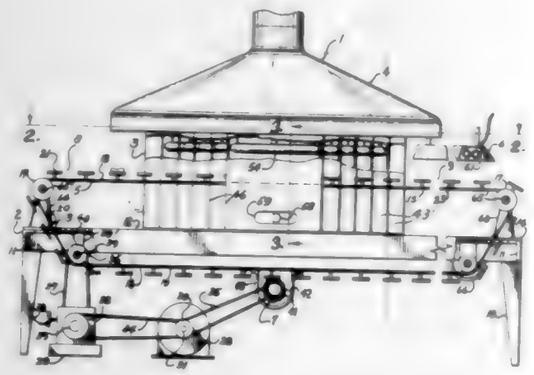
A device for the preparation of vacuum infused or percolated liquid coffee from ground coffee in the form of a pack having walls of flexible heat-resisting material and divided into an upper and lower compartment. Filter means separate the compartments and conduit means extend from the lower part of the lower compartment into the upper compartment. In one arrangement the device is self-contained and a quantity of ground coffee is packed into the upper compartment and an appropriate quantity

of water is inserted into the lower compartment. The pack is subsequently placed adjacent a heat source to heat the water which eventually moves up the conduit means into the upper compartment. Depending on the arrangement of the filter means and the conduit means, either vacuum in-



fused or percolated coffee flows into the lower compartment from which it is subsequently removed. In another arrangement the lower compartment forms a tube connecting the upper compartment to water in a separate container.

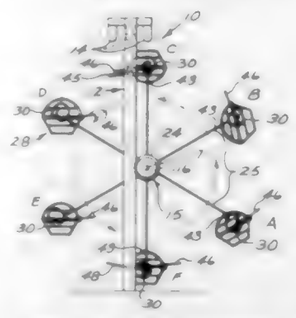
3,372,635
FOOD PREPARATION APPARATUS
Alvin Carroll Meyer, Parkville, Mo., assignor to The Gold Buffet Franchise, Inc., North Kansas City, Mo., a corporation of Missouri
Filed Feb. 28, 1966, Ser. No. 530,685
8 Claims. (Cl. 99—339)



Apparatus for cooking of foodstuffs, and particularly steaks, in a commercial eating place, wherein there are a plurality of parallel running conveyors having individual longitudinally spaced grill portions for the steaks and means for operating the conveyors past cooking burners in a housing and for operating the conveyors at different speeds so that when a party orders a plurality of steaks cooked rare, medium or well done, by starting the steaks through the cooking apparatus at the same time they will be deposited from the cooking apparatus cooked in the manner desired. There is also a holding space where the steaks may be kept warm or hot after they have gone through the cooking operation.

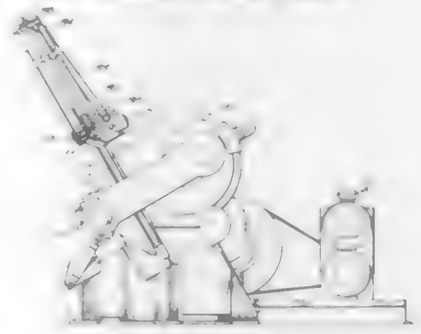
3,372,636
ROTISSERIE
Vincent Marasco, 1364 N. Western Ave., Los Angeles, Calif. 90027
Filed Oct. 20, 1965, Ser. No. 498,269
6 Claims. (Cl. 99—427)

A rotisserie of the Ferris wheel type has several rotatable baskets with hinged lids for holding food to be cooked. Pivot pins mounting each basket are split longitudinally, one half being on the hinged lid. A journal



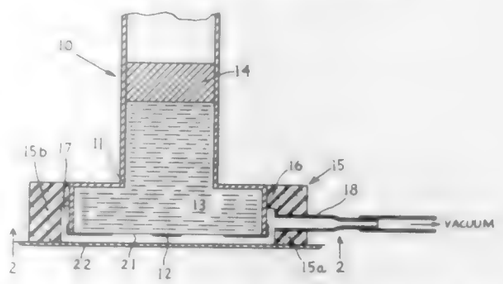
bearing receiving the pin endwise holds the pin together and the lid closed.

3,372,637
DELIVERY MECHANISM
Zeffro V. Gianetti, Franklin, Mass., assignor to Thomson National Press Company, Inc., Franklin, Mass., a corporation of Massachusetts
Filed June 27, 1966, Ser. No. 560,611
10 Claims. (Cl. 100—218)



A delivery mechanism for removing die-cut cardboard sheets from a platen press having a fixed platen extending upwardly and a movable platen adapted to be moved in pressing relation with the fixed platen. Impaling elements carried by a frame project between the platens when they are closed. When the platens open, the sheet is moved upwardly by the impaling means to a position in which the lower edge of the sheet is engaged by a laterally moving conveyor. This laterally moving conveyor moves the processed sheet from the press to a chute-like arrangement which permits the processed sheet to slide downwardly for further handling.

3,372,638
STENCIL PRINTER
Kenneth F. Tripp, Hancock, N.H., assignor to Markem Machine Company, Keene, N.H., a corporation of New Hampshire
Filed May 22, 1967, Ser. No. 640,049
6 Claims. (Cl. 101—114)



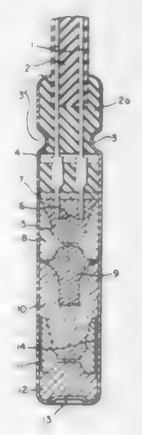
This invention relates to a stencil printing device in which a stencil member surrounded by a flexible wall is

brought into intimate contact with the surface being decorated by creating a vacuum in the space between the stencil and the surface, and simultaneously utilizing atmospheric pressure to transfer an inked image through the stencil, to the surface.

3,372,639
METHOD OF MAKING CURVED ELECTROSTATIC PRINTING SCREENS
James W. Edwards, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed June 11, 1965, Ser. No. 463,251
4 Claims. (Cl. 101—128.3)

1. The method of making electrostatic printing screens, said method comprising applying a photosensitive emulsion to the surface of an electrically non-conductive fabric, applying a mask of a desired print image to the surface having the photosensitive emulsion, exposing the emulsion to a source of light so that the portion not covered by masked areas receives light, removing the mask, removing the unexposed emulsion, metalizing the open areas of the fabric to render the fabric electrically conductive, metalizing the fabric in a second metalizing operation so that the metal is filled in the interstices of the open mesh portions of the fabric to provide a fairly rigid screen member, treating the screen member with an emulsion remover to convert the positive image to a negative image, and forming the screen member to a desired shape.

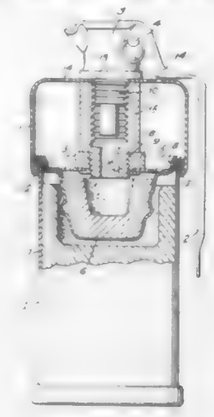
3,372,640
WATER-DESENSITIZED BLASTING CAPS
Richard Dow, Bloomingdale, and Carl R. Hutter, Pompton Lakes, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 3, 1966, Ser. No. 569,741
3 Claims. (Cl. 102—28)



A blasting cap for underwater use adapted to be desensitized after a predetermined period of exposure to water by the ingress of water through at least one hole in the casing after dissolution of a water-soluble granular material.

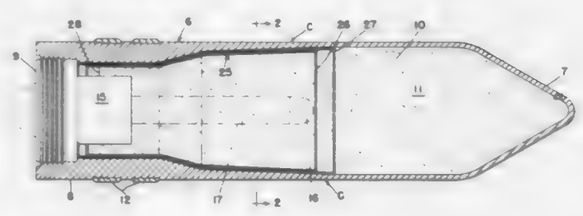
3,372,641
PRESSURE RETENTION CHAMBER FOR SMOKE MARKER GRENADE
John Edward Foster, Timonium, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Oct. 19, 1966, Ser. No. 588,676
3 Claims. (Cl. 102—65)

A pressure retention chamber fixed to the top of a smoke marker grenade which provides a larger volume with the canister of the grenade when the cover is ruptured due to impact and thereby reduces the pressure, yet re-



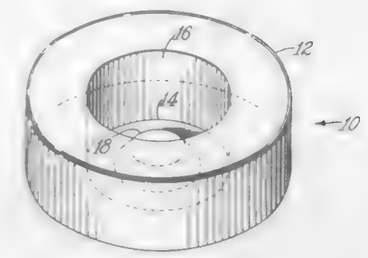
taining sufficient pressure to enable normal burning of the smoke mix in the canister.

3,372,642
INTERNAL FIRING SWITCH MEANS FOR ELECTRICALLY FUZED PROJECTILES
Jack Brothers, Succasunna, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 6, 1964, Ser. No. 388,352
2 Claims. (Cl. 102—70.2)



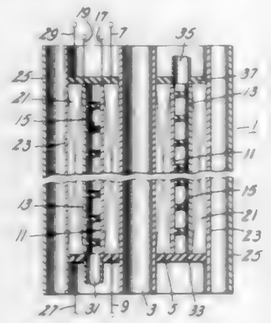
Crush-closable firing-switch means for electrically fuzed projectiles of the cylindrical casing or shell type provided as a relatively-thin tubular liner along and tightly fitting the inner casing wall rearwardly from an intermediate crush point or area on the shell to which it must penetrate to effect firing delay after impact through delayed rupture and closing of said switch means.

3,372,643
LOW EXPLOSIVE PRIMERLESS FORMED CHARGES
Robert C. Kvavle, Hillsboro, Oreg., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Feb. 1, 1966, Ser. No. 524,168
16 Claims. (Cl. 102—99)



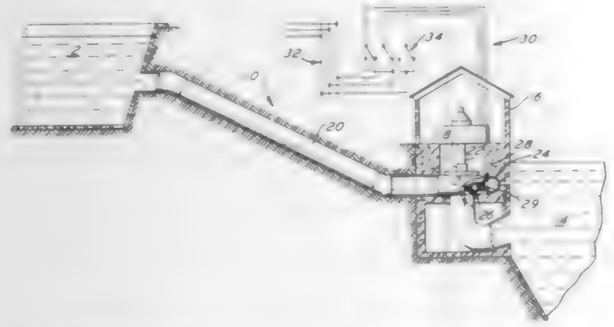
A primerless, low explosive nitrocellulose charge is adapted by its apparent density and preferably also by configuration, to be easily ignited in a substantially closed chamber by friction due to direct impact and without reliance upon diesel type ignition.

3,372,644
ELECTROMAGNETIC PUMP HAVING CONCENTRIC ELECTRODES
Ronald R. Nilson, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Mar. 21, 1966, Ser. No. 536,130
4 Claims. (Cl. 103—1)



An electromagnetic pump has a pair of cylindrical electrodes defining a cylindrical space therebetween, an insulative spiral deflector mounted in the cylindrical space, a pair of induction coils mounted interiorly and exteriorly of the electrodes, and means connecting the electrodes and the induction coils to an alternating current source.

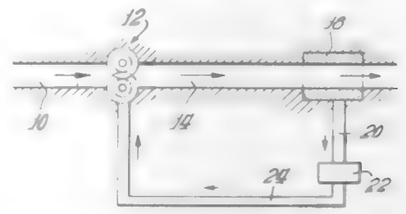
3,372,645
POWER-ACCUMULATION SYSTEM
Richard B. Willi, Norristown, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 16, 1966, Ser. No. 534,909
5 Claims. (Cl. 103—87)



A power-accumulation system utilizing a pump-turbine which can be operated as a pump wherein water can be delivered up to full pumping head when being operated with a motor-generator turning in a direction as for the generating mode. To accomplish pumping while the pump-turbine shaft is rotated in the generating mode, the wicket gates must be set at an opening less than that required to drive the unit as a turbine at rated speed under no load for a corresponding generating head. Smoothness of operation is greatly enhanced by filling the conduit interconnecting a high and low reservoir in a power-accumulation system in the described manner.

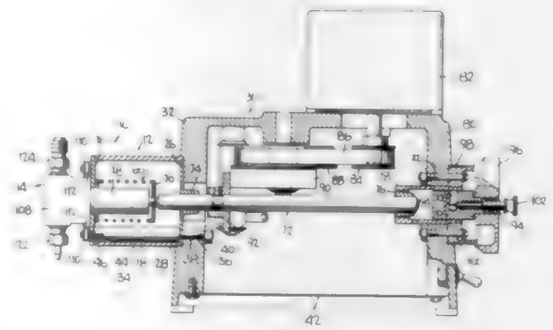
3,372,646
CONTAMINANT RESISTANT FLUID SUPPLY SYSTEM
Peter F. Pinkas, Cleveland, and Chester J. Brian, Jr., Chagrin Falls, Ohio, assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 385,206, July 27, 1964. This application Mar. 20, 1967, Ser. No. 641,080
8 Claims. (Cl. 103—126)

A pressure loaded gear pump including a contaminant resistant fluid supply system. The contaminant resistant arrangement includes means for cleaning a portion of the pumped fluid which is in turn utilized to pressure load the pump bearings and cleanse the relatively slidable surfaces of the bearings and pumping gears. Passages are formed



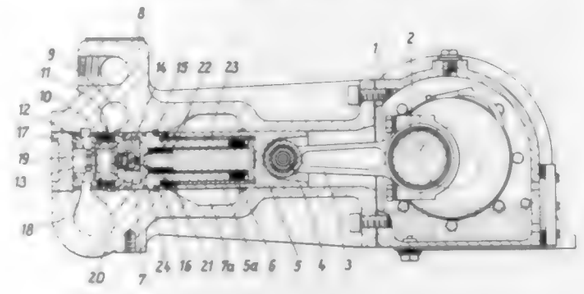
in the pump bearings to deliver the fluid to the relatively slidable surfaces, and slots, communicating with the passages are provided in the pumping gear side walls to distribute the cleansing fluid.

3,372,647
PUMP
Nelson G. Kling, Ringwood, N.J., assignor to Technicon Corporation, a corporation of New York
Filed July 8, 1966, Ser. No. 563,872
2 Claims. (Cl. 103—153)



A positive displacement, piston pump, has an eccentric driven operating rod which drives a spring loaded plunger and piston in a passageway in a pump head. The pump head is releasable from the body of the pump by externally accessible hold down means to expose the piston and its annular seal.

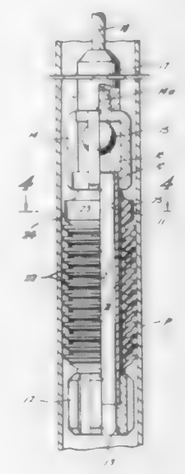
3,372,648
PUMP
Paul Hammelmann, 17 Zum Sundern, 474 Oelde, Westphalia, Germany
Filed July 6, 1966, Ser. No. 563,253
Claims priority, application Germany, July 7, 1965, H 56,510
15 Claims. (Cl. 103—153)



A pump including a reciprocatable crosshead having a front portion in form of a cylinder, a stationary hollow piston extending into the cylinder of the crosshead coaxially arranged therewith, and a pair of valves respectively arranged in a pair of passage means communicating

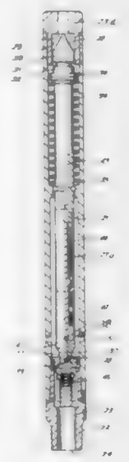
with the interior of said hollow piston and respectively opening and closing during movement of said crosshead along a suction stroke and a compression stroke.

3,372,649
WELL SWABS
Jack C. Webber, 353 Dolphin, Corpus Christi, Tex. 78411
Filed Apr. 25, 1966, Ser. No. 545,072
16 Claims. (Cl. 103—225)



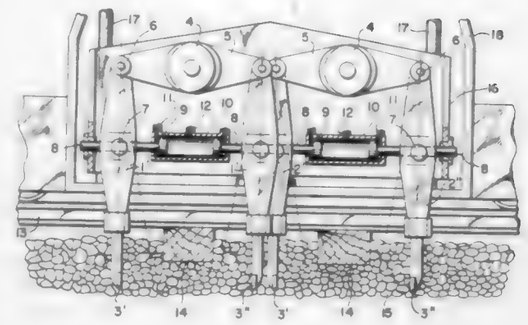
This patent discloses a well swab in which the swab element has a plurality of flexible lips which turn down from an upwardly and outwardly extending configuration to support a load and extend further down to bypass or dump an overload. The swab element includes a choke which limits the rate of flow past the swab element and protects the lifting ribs from excessive overload conditions.

3,372,650
GAS LIFT APPARATUS AND SYSTEM
Henry U. Garrett, Longview, Tex. (2205 Lee St., Houston, Tex. 77026)
Filed Apr. 6, 1966, Ser. No. 540,707
6 Claims. (Cl. 103—233)



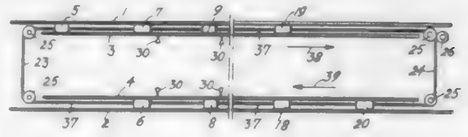
This patent discloses a gas lift method and system using casing pressure-responsive valves for loading tubing pressure-responsive valves to unload a well, and using the tubing pressure-responsive valves to thereafter lift liquid from the well.

3,372,651
TRACK TAMPING MACHINE
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria
Filed Mar. 19, 1965, Ser. No. 441,229
4 Claims. (Cl. 104—12)



A ballast tamping tool assembly comprising two adjacent pairs of tamping tools so spaced in the direction of track elongation that the adjacent tools of the adjacent pairs fit into the interspace between two adjacent ties. Preferably, the adjacent pairs of tools are staggered in the direction of the tie elongation.

3,372,652
RAILWAY CAR MOVING DEVICE
Ernst Garbers, 10 Dammannweg, Hamburg-Hochkamp, Germany
Filed Aug. 17, 1965, Ser. No. 480,390
Claims priority, application Germany, Aug. 22, 1964, G 41,373
9 Claims. (Cl. 104—26)

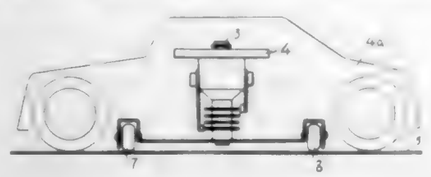


A pushing-off and braking arrangement for marshalling yards, including four-wheeled trolleys guided between the feet and heads of the rails of tracks and associated guide rails, the trolleys being movable by means of a fixedly connected endless transport means which is lead around the pulley of a driving engine, with raisable arms for engaging parts of a railroad car, e.g. a wheel set or axle bearing casing or the like, the transport means carrying out a to-and-fro motion the length of which corresponds at least to the maximum wheel base of a railroad car, the four wheeled trolleys being carried by the endless transport means in a closed path including a driving portion in which the raisable arm of each trolley engages and drives a railroad car and a return portion in which the raisable arm is disengaged while the trolley is returned to the driving portion of the closed path.

3,372,653
ELECTRIC CURRENT TRANSMISSION DEVICE, PARTICULARLY FOR ENTERTAINMENT ELECTRIC VEHICLES
Marino Montagna, Via Ludovico Pavoni 23, Brescia, Italy
Filed Apr. 22, 1966, Ser. No. 544,604
Claims priority, application Italy, Apr. 26, 1965, 9,406/65, Patent 761,383
11 Claims. (Cl. 104—148)

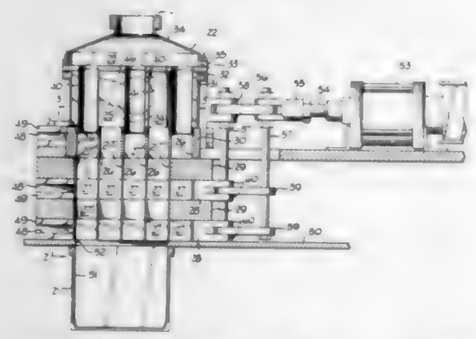
1. Electric current transmission device for electric vehicles, comprising in combination a plurality of strips consisting of an electrically conducting material and con-

nected to an electric current source, the strips being arranged juxtaposed to one another, mutually insulated and defining the vehicle runway, there being successively provided between a number of these strips respective grooves running parallel to the strips, and a contact device including a frame secured beneath the vehicle and swingable within a plane vertical to the runway plane and rotatable



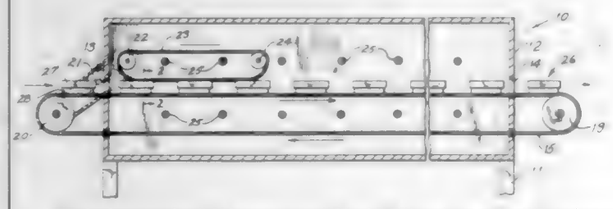
about a vertical axis with respect to the runway plane, said frame having an elongated extension carrying at the extremities thereof rolling members and a plurality of contact elements, said contact elements being arranged near the rolling members and adapted to come into contact with the strips when the corresponding rolling member is in one of said grooves.

3,372,654
METHOD OF AND APPARATUS FOR FORMING AN EDIBLE PRODUCT
Kenneth Bell, Marengo, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 1, 1965, Ser. No. 484,352
7 Claims. (Cl. 107—1)



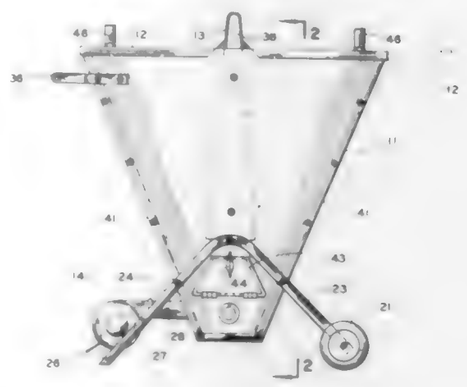
A method and apparatus for forming an edible product of different materials with similar sections of the materials arranged in contacting layers and with the sections in each layer arranged in parallel contacting rows, each section in each row in each layer contacting at least one section of a different material in the same row, at least one section of different material in at least one adjacent row, and at least one section of different material in at least one adjacent layer.

3,372,655
BAKING APPARATUS
Robert W. Williams, Brookville Road, Brookville, N.Y.
Filed July 22, 1966, Ser. No. 567,287
6 Claims. (Cl. 107—57)



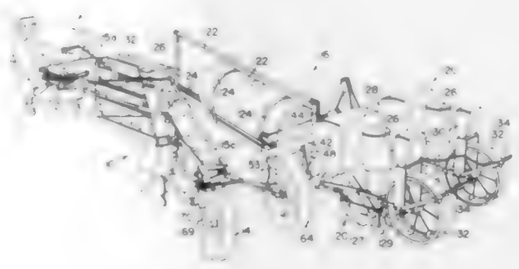
This invention is concerned with the use of a continuous hold down conveyor having a slack bottom portion within a baking chamber to use the force of gravity to produce a continuous downward force on the lids of the baking pans during an initial period of the baking cycle.

3,372,656
SMOKELESS YARD BURNER
Morris E. Lager, Box 114, Winnetka, Ill. 60093, and Raymond J. Miller, 6098 N. Newburg, Chicago, Ill. 60631
Filed Oct. 23, 1965, Ser. No. 504,019
4 Claims. (Cl. 110—18)



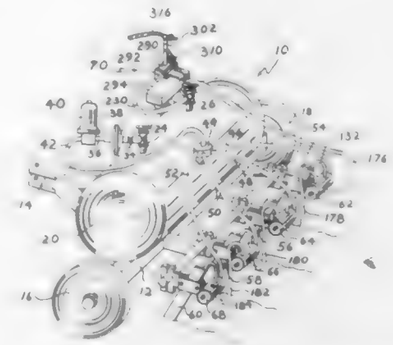
A burner for leaves and trash, which is designed to be wheeled about a yard, is provided with an electric blower for discharging air along a line extending the full width of a narrow-bottom hopperlike burning container. Spaced above the line of air liberation, and extending higher than the sides of the hopper, is a duct memebr of expanded metal which ensures free passage of the air and products of combustion while fully exposing the contents at opposite sides of the duct to the burning action. Covers can be closed to confine the exhaust to passing up through the duct. Wet leaves can be burned substantially without smoke.

3,372,657
MINIMUM TILLAGE APPARATUS
Harold V. Hansen, Hillsdale, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Apr. 6, 1964, Ser. No. 357,522
12 Claims. (Cl. 111—1)



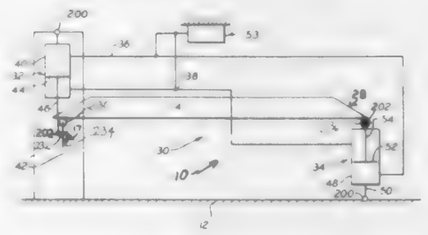
8. A method of planting comprising: forming a ridge in freshly worked soil at least the central portion of the ridge being at an elevation above the normal surface of the freshly worked soil, compacting the soil in the central portion of the ridge until it is no longer above the normal surface of the freshly worked soil, opening a furrow within the compacted soil, placing seed within said furrow, covering the furrow with soil, and pressing the soil over the furrow to form a good seed bed.

3,372,658
SOIL TREATING APPARATUS
William L. Ammann, Argonia, Kans. 67004
Filed July 21, 1966, Ser. No. 566,996
9 Claims. (Cl. 111—7)



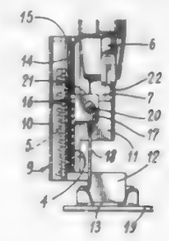
Apparatus for and a method of subsurface injection of anhydrous ammonia fertilizer wherein liquid is conducted from a source of liquid ammonia traversed over a field to a subsurface injection unit from which the ammonia is discharged, with the ammonia being maintained under a sufficient pressure throughout substantially its entire travel to the injector unit to hold the same substantially entirely in its liquid state during such travel. The apparatus includes a plurality of spaced injector units connected by individual conduits to a manifold, such manifold having communication with the liquid contents of a supply vessel by way of a single conduit provided with a pressure regulator, filter and shut-off valve. Each of the individual conduits is provided immediately adjacent its respective injector unit with a control valve which is normally closed, the arrangement being such that ammonia is supplied to the individual control valves as a liquid under a regulated pressure that is sufficient to maintain the same in a liquid state. Each of the control valves is provided with fluid pressure actuated means for opening such valves, and all of such means are connected by a common conduit to a master control valve, and the latter is such that the common conduit can be selectively vented and placed in communication with a source of fluid pressure, which can be the vapor space at the top of the ammonia storage vessel.

3,372,659
STABILIZING MEANS FOR SCHIFFLI EMBROIDERY MACHINES
Paul F. Bowman, Ridgewood, N.J., assignor to Joseph L. Schlesinger Incorporated, Ridgefield, N.J., a corporation of New Jersey
Filed Feb. 15, 1966, Ser. No. 527,564
9 Claims. (Cl. 112—91)



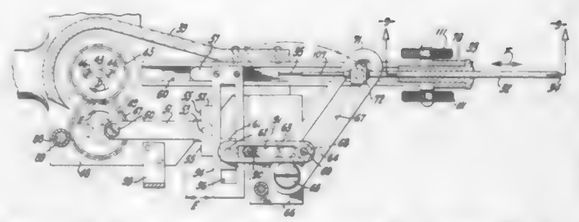
1. In combination with a Schiffli embroidery machine including a base, an elongated frame for supporting a work piece, embroidery tools, and means for moving said frame relative to said base; means providing for concurrent movement of both ends of said frame comprising a first piston and cylinder, means for connecting one of said first piston and cylinder to one end of said frame and the other of said first piston and cylinder to said base for relatively moving said piston and cylinder in accordance with the movement of said frame, a second piston and cylinder of substantially the same dimensions as said first piston and cylinder, means for connecting one of said second piston and cylinder to the other end of said frame and for connecting the other of said second piston and cylinder to said base for moving said other end of said frame in response to relative movement between said second piston and cylinder, an incompressible fluid filling the unoccupied space in said first and second cylinder, a first pipe line connected to said first cylinder on the side of said first piston containing fluid which resists movement of said one end of said frame in a given direction and connected to said second cylinder on the side of said second piston containing fluid adapted to exert a pressure on said second piston in a direction resulting in movement of said other end of said frame in said given direction, a second pipe line connected to said first and second cylinder on the sides of said first and second pistons opposite the sides thereof to which said first pipe line is connected, and incompressible fluid filling said first and second pipe lines.

3,372,660
DEVICE FOR BASTING APPLIED TO SEWING MACHINES OF THE ZIGZAG TYPE
Luigi Bono, Pavia, Italy, assignor to Necchi Società per Azioni, Pavia, Italy
Filed Oct. 5, 1965, Ser. No. 493,084
Claims priority, application Italy, June 3, 1965, 12,428/65, Patent 772,518
5 Claims. (Cl. 112—158)



An accessory device for selective mounting on a zigzag type sewing machine for adapting same to sew basting type stitches. The device requires that the machine needle be removed from the machine needle bar and remounted in a needle holder which forms part of the device, said needle holder being reciprocably mounted and traversing one of the two axes along which the needle bar reciprocates whereby said bar abuts against the holder while said bar is along only one of said axes but slides past the holder when the bar is along the other of said axes.

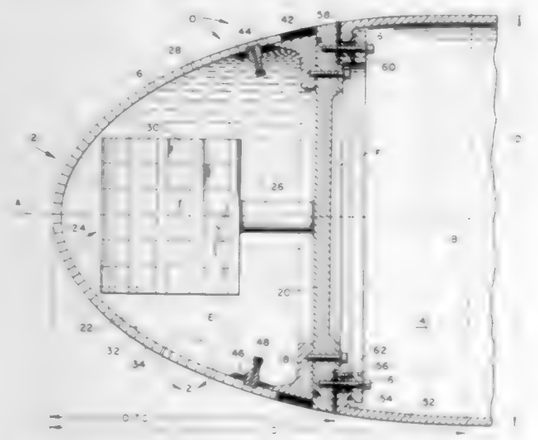
3,372,661
PORTABLE PILE-DEPOSITING MACHINE
Glenn Looper, Box 76, Dalton, Ga. 30720
Filed June 7, 1965, Ser. No. 461,948
17 Claims. (Cl. 112—80)



A portable pile-depositing machine is described in which the yarn is pulled forward by the forward end of the reciprocating needle on the forward stroke but is prevented from regressing on the rearward stroke by frictional engagement with a stationary yarn guide inside the

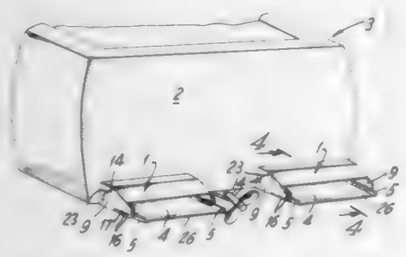
needle. Also described is an arrangement by which the stroke length of the needle can be remotely changed between two limit positions while the machine is running.

3,372,662
TORPEDO NOSE AND SONAR DOME CONSTRUCTION
Carrol R. Nisewanger, Arcadia, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Continuation of application Ser. No. 446,749, Apr. 8, 1965. This application Jan. 27, 1967, Ser. No. 613,069
2 Claims. (Cl. 114—20)



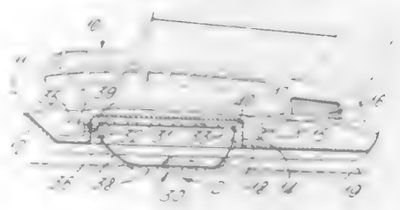
A wall construction for a sonar dome or a torpedo nose is of a bonded sandwich type consisting of inner and outer face sheets of impervious impregnated fiberglass laminae, and a honeycomb core therebetween. The walls of the honeycomb are made of pervious woven fiberglass, which is partially impregnated for stiffness. Several nipples extend through the inner face sheet of the bonded sandwich construction. A vacuum is drawn throughout the honeycomb core zone through the nipples. A liquid medium for providing an acoustic match is then introduced into the honeycomb core zone under influence of the vacuum, through the nipples.

3,372,663
BOAT STABILIZING UNITS
Louis Lo Bue, Paterson, N.J., assignor to Aqua Stables, Inc., Paterson, N.J., a corporation of New Jersey
Filed Oct. 5, 1966, Ser. No. 584,416
13 Claims. (Cl. 114—66.5)



1. A self adjusting trim tab adapted to be mounted on a water craft comprising, one portion adapted to be mounted on said craft, a stabilizing tab, a first stabilizing tab mounting means, a second stabilizing tab mounting means, said first and second stabilizing tab mounting means extending longitudinally with respect to said craft, a lower stabilizing tab stop, an upper stabilizing tab stop, means maintaining said first and second stabilizing tab mounting means in fixed relationship, and pivot means intermediate the length of said stabilizing tab mounting means adapted to allow said stabilizing tab to pivot between said lower and upper stops.

3,372,664
PROPULSION SYSTEM FOR A VEHICLE FOR TRAVELLING OVER FLUID AND OTHER SURFACES
David William Nicholas, Totton, Southampton, Rowland Delville Hunt, Hythe, and Edward Gunston Tattersall, Hythe, Southampton, England, assignors to Hovercraft Development Limited, London, England, a British company
Filed May 31, 1966, Ser. No. 554,144
Claims priority, application Great Britain, June 3, 1965, 23,826/65
15 Claims. (Cl. 114—67)

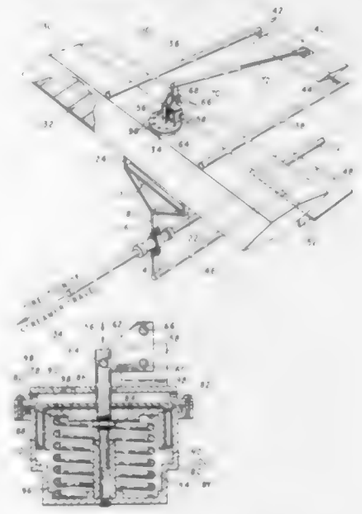


A propulsion system for propelling a vehicle, such as an air cushion vehicle, over water comprises a belt arranged in an endless loop and carrying a series of cleats adapted to thrust against the water. Each of the cleats incorporates a thrust surface which slopes outwardly from the loop in the direction of the leading edge of the cleat whereby, when the cleat enters the water, forces are produced which urge the cleat downwardly.

3,372,665
CABLE DISPENSING AND SECURING DEVICE
Lilburn L. Mesler, Palmyra, Mich., assignor to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 392,560, Aug. 27, 1964. This application Sept. 20, 1966, Ser. No. 593,251
15 Claims. (Cl. 114—206)

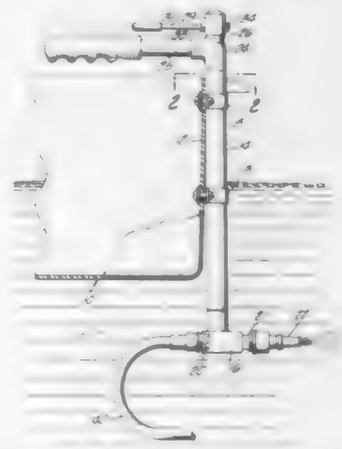
1. A device for dispensing and securing a cable comprising
(a) a main body portion;
(b) a flyer rotatable on the body portion;
(c) a reel fixed to the body portion coaxial with the flyer;
(d) a length of cable wrapped about the reel to be paid out from the end of the reel through the flyer to impart rotation to the flyer;
(e) locking means for preventing rotation of the flyer and pay out of the cable comprising
(i) positively engageable first and second locking elements mounted on the flyer and body portion respectively and biased toward locked position,
(ii) restraining means releasably holding said locking elements out of locked position, and
(iii) triggering means for disabling said restraining means to release said locking elements into locked position and prevent rotation of the flyer.

3,372,666
DEPTH CONTROLLER
Buford M. Baker, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,724
5 Claims. (Cl. 114—235)



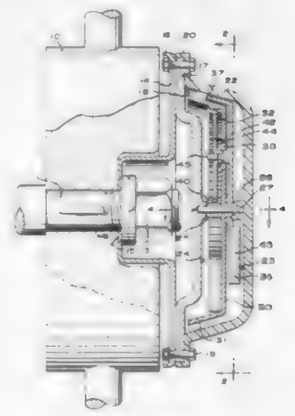
Apparatus for controlling the depth of a device such as a towed streamer in a fluid medium. A pressure responsive sensor is connected to a wing for controlling the variance of the deflection angle of an elevator and the wing in a linear manner related to the depth of the sensor within a predetermined range of depths and in a constant manner at all depths above and below the predetermined range.

3,372,667
JET PROPELLED BOAT
Theodore E. Sweet, 18026 Benbow, Covina, Calif. 91722
Filed Jan. 5, 1967, Ser. No. 607,436
4 Claims. (Cl. 115—12)



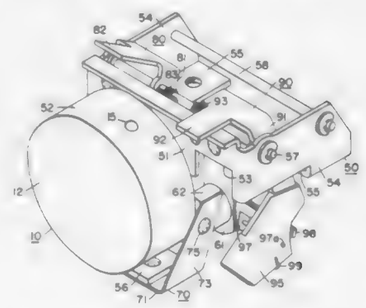
1. A device for use with a floating vehicle such as a boat or the like comprising: a tubular member for attachment to said vehicle; a sleeve rotatably mounted in said tubular member; an elongated horizontally extending body carried by said sleeve member at its lower end; means for attaching a hose to one end of said body and a jet nozzle at the other end of said body; and a handle attached to said sleeve for controlling the direction in which said nozzle is pointed.

3,372,668
RUDDER INDICATOR
Ralph F. Chambers, Seattle, Wash., assignor to Chambers & Chambers, Seattle, Wash., a partnership composed of Ralph F. Chambers and Jack E. Chambers
Filed Aug. 5, 1965, Ser. No. 477,418
5 Claims. (Cl. 116—31)



A device to indicate to the helmsman of a marine vessel the position occupied by the rudder, employing as a pointer a radial arm which carries the planet gear of an epicyclic train and with the directional bearing visible upon a floating disc weighted so as not to turn with the wheel, the planet gear being in mesh with internal teeth formed upon the disc and a sun gear rotating with the wheel. The entire working assembly is housed in an annular case so attached to the wheel that it can be applied to, adjusted on, or removed from the wheel bodily so as not to expose the working parts.

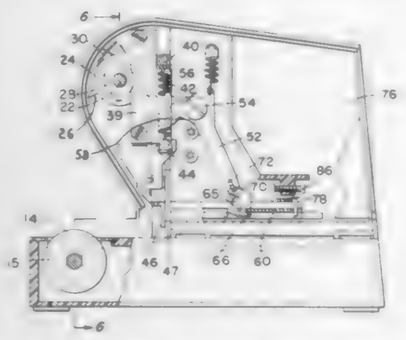
3,372,669
ULTRASONIC TRANSMITTER
Leon J. Sienkiewicz, Metuchen, and Harry T. Goldstein, Teaneck, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1964, Ser. No. 353,668
5 Claims. (Cl. 116—137)



1. An ultrasonic transmitter comprising, a housing, mounting means supported within said housing, a flexural mode vibrator supported by said mounting means and resonant to vibrate at a first frequency about a first nodal diameter and at a second frequency about a second nodal diameter, striker means supported by said mounting means adjacent said vibrator, actuating means operatively associated with said striker means to actuate said vibrator

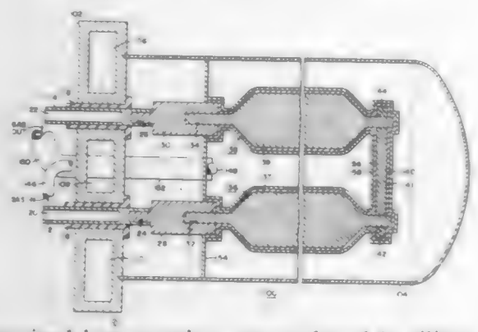
into vibration about said first nodal diameter, damping means supported by said mounting means to effect damping of vibrations of said second frequency of said vibrator about said second nodal diameter during said vibrations about said first nodal diameter, and means operatively associated with said actuating means for effecting operation of said damping means.

3,372,670
POSTAGE STAMP DISPENSER
Kenneth O. Frawley, 78 Sweetgum Road, Levittown, Pa. 19056
Filed Oct. 18, 1965, Ser. No. 497,293
4 Claims. (Cl. 118—42)



A compact manually operated stamp dispenser which includes scissor cutting means and a stamp feeding means, synchronized with respect to each other. Stamp wetting apparatus also is included.

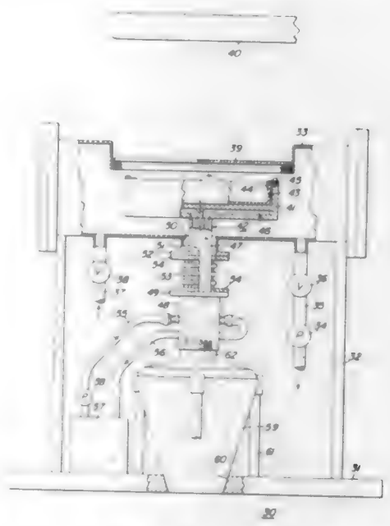
3,372,671
APPARATUS FOR PRODUCING VAPOR GROWTH OF SILICON CRYSTALS
Ting Li Chu, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 26, 1965, Ser. No. 458,937
2 Claims. (Cl. 118—49.5)



Siliconized heater strips are employed in silicon vapor growth apparatus. Silicon is deposited on a heater strip heated to a temperature higher than the melting point of silicon to form an impervious coating of a silicide of the material comprising the heater. A layer of silicon is then grown on the silicide coating.

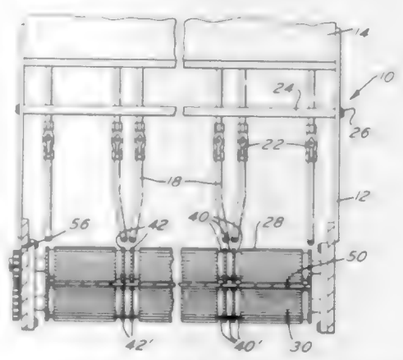
3,372,672
PHOTOPOLYMERIZATION MEANS IN A VAPOR DEPOSITION COATING APPARATUS
Archibald Nelson Wright, Schenectady, N.Y., and Wilfred F. Mathewson, Jr., Franklin, Mich., assignors to General Electric Company, a corporation of New York
Filed Mar. 21, 1966, Ser. No. 536,125
2 Claims. (Cl. 118—49.5)

1. Apparatus comprising an enclosure, a vacuum pump connected to said enclosure to evacuate said enclosure, an inlet line connected to said enclosure for supplying a photopolymerizable gaseous material to said enclosure, a control valve for said inlet line, a driver shaft comprising a driver portion and a driven portion, said driven portion with a narrower diameter than the driver portion, the end of the driven portion of said driver shaft located within said enclosure, a substrate support member within said enclosure connected to the driven end of said driver shaft, an ultraviolet light source having an effective wave length of 2,000 to 3,500 angstroms positioned within said enclosure in operative relationship to said substrate support member, the driven portion of said driver shaft extending outwardly from said enclosure through an aperture in the wall of said enclosure, a closure with a flange



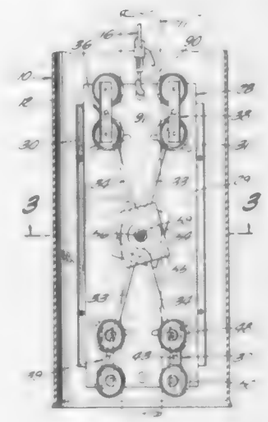
positioned around the shaft aperture in said enclosure, a vibratory device connected to the driver end of said driver shaft, a flange on said driver shaft at the junction of the driver portion and the driven portion, a diaphragm with a flange at each opposite end thereof, one of said diaphragm flanges connected to said driver shaft flange, the other of said flanges connected to said closure flange, a cooling tube imbedded in said substrate support member and extending through said driver shaft to a point outside said enclosure, a cooling unit positioned outside said enclosure and connected to said cooling tube, and a circulating pump connected to said cooling unit for circulating a coolant through said cooling tube.

3,372,673
COATING APPARATUS
Alfred DiMattia, Williamstown, N.J., assignor to Edward Stern Majestic Press, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 2, 1966, Ser. No. 591,485
10 Claims. (Cl. 118—221)



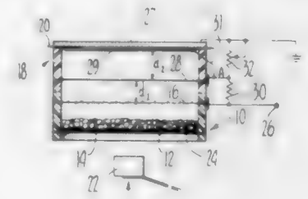
This disclosure is directed to a coating apparatus having a grooved roller which transfers coating material from a trough to a surface. The grooved roller receives the coating material directly from the trough, thus eliminating transfer rollers, and applies a consistent width thin strip of coating material to a surface.

3,372,674
FLAGPOLE PAINTING DEVICE
Keith R. Dickau, 1430 Emory Drive, Whittier, Calif. 90605, and Robert W. Miner, 1430 Hathaway Ave., Long Beach, Calif. 90800
Filed Aug. 15, 1966, Ser. No. 572,499
14 Claims. (Cl. 118—307)



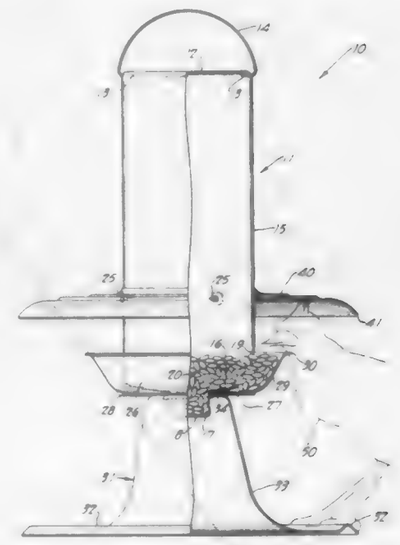
1. A painting device for painting an elongated member such as a flagpole or the like comprising
carrier means for encircling said elongated member and for supporting a plurality of paint sprayers,
supporting bracket means mounted within said carrier means for maintaining alignment of said painting device about the periphery of said elongated member, said assembly including plate means affixed to said carrier means and a plurality of rod members having wheel means mounted on said rod members for engaging the periphery of said elongated member, said rod members being arranged substantially in the form of a cross and pivoted substantially at the center thereof on said plate means, biasing means coupled between said plate means and said rod means for selectively biasing said wheel means toward the periphery of said elongated member, and
handle means coupled with said biasing means for selectively operating said biasing means.

3,372,675
ELECTROSTATIC IMAGE PROCESSOR
Willard J. Tressel, Berkeley, Calif., assignor to Friden, Inc., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,433
10 Claims. (Cl. 118—637)



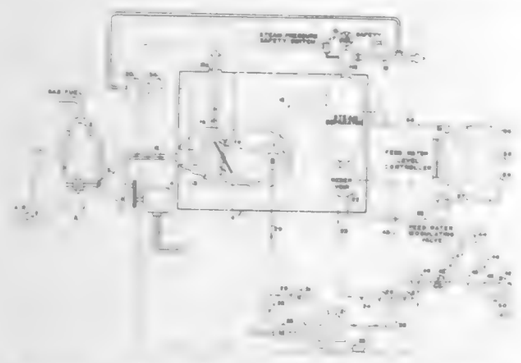
A toner applying apparatus for use in developing electrostatic images on a record medium wherein mechanical actuation is initially used to both charge the toner particles, due to friction with a carrier material, and to elevate the charged toner particles toward the record medium. The elevated toner particles enter a first electric field which accelerates them toward the record medium. Before reaching the record medium the accelerated charged particles enter a second electrical field which maintains the charged particles in an air slurry or cloud closely adjacent to the record medium, whereby the electrical fields associated with the latent image in combination with the uniform field of the drift region cause the toner particles to be gently deposited on desired portion of the record medium.

3,372,676
CARDINAL BIRD FEEDER
Robert H. Williams, Rte. 2, Bandera, Tex. 78003
Filed June 6, 1966, Ser. No. 555,520
2 Claims. (Cl. 119—52)



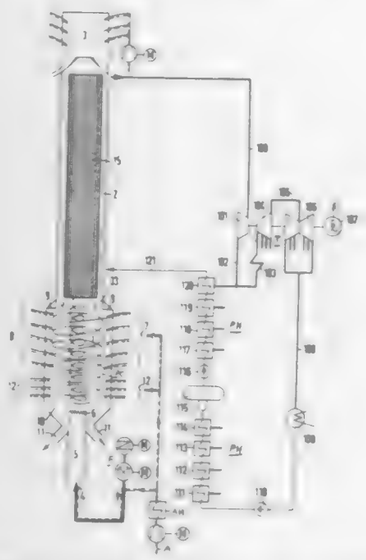
1. In a bird feeder for dispensing bird seed, the combination of:
(A) a thin walled seed containing bottle having an axial, externally threaded neck extending downwardly therefrom;
(B) a screw cap applied to said neck to close the latter,
(C) there being opening means in the wall of said bottle near the lower end thereof to allow bird seed to gravitate downwardly and outwardly through said opening means;
(D) a shallow circular feeding bowl having an axial hole in the bottom thereof fitting over said neck between said cap and said bottle;
(E) a feeder support formed of sheet plastic to include integrally an annular peripheral bird perch, and a hollow frusto-conical standard rising upwardly and having a horizontal wall at its upper end, said wall being axially apertured to receive said bottle neck,
(F) said cap rigidly clamping said feeding bowl and feeder support to said bottle when said cap is tightly screwed onto said bottle neck, and thus assembling said bird feeder,
(G) said bottle being adapted to receive bird seed by inverting the feeder and unscrewing said cap, said frusto-conical standard then providing a suitable hopper for funnelling grain through said neck and into said bottle, the cap then being reapplied to said neck and the feeder turned right end up for use.

3,372,677
TOTAL ENERGY CONSERVATION SYSTEM
John L. Boyen, Orinda, Calif., assignor, by mesne assignments, to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 419,615, Dec. 18, 1964. This application Dec. 27, 1966, Ser. No. 604,945
5 Claims. (Cl. 122—7)



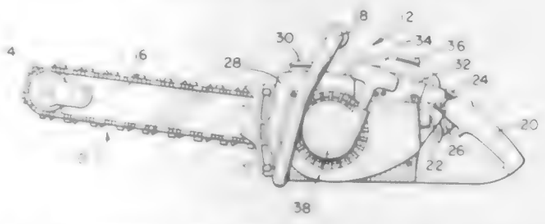
A system for recovering the energy in exhaust gases from a turbine or like heat generating apparatus by forcing such gases through a heat exchanger. A system for automatically controlling or bypassing exhaust gases into apparatus so that creation of excessive back pressure is avoided and so that temperatures in the heat exchanger are controlled. A heat exchanger having spirally formed water tubes in which water is directed from the inner end of the spiral to the outer end thereof and provisions for forcing the hot exhaust gases from the outer periphery of the spiral water tube radially inwardly toward the center of the spiral.

3,372,678
STEAM GENERATOR WITH HEAT EXCHANGE ON THE TORNADO-FLOW PRINCIPLE
Karl Rudolf Schmidt, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Aug. 5, 1966, Ser. No. 570,490
Claims priority, application Germany, Aug. 11, 1965, S 98,770
11 Claims. (Cl. 122—235)



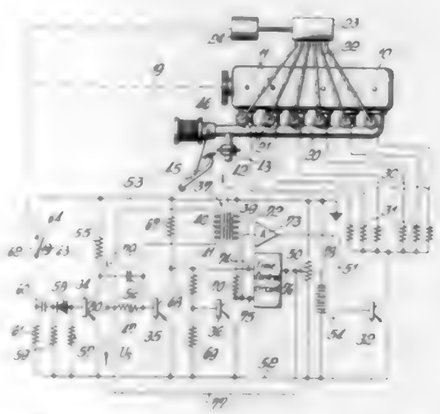
With a steam generator having a substantially rotationally symmetrical firing chamber with fuel supply means and combustion air supply means, a smoke-gas conduit structure forming a substantially rotationally symmetrical conduit path communicating with the chamber to receive hot combustion gases therefrom, and heating surfaces extending inside and along the conduit and forming longitudinal interspaces for the passage of the gases, tornado-flow excitation means joined with the chamber and including at least one of the supply means for producing and maintaining in the firing chamber a tornado flow of gas-entrained fuel particles to issue a twisting rotational flow of smoke gases from the chamber into and through the interspaces along the heating surfaces, the fuel supply means being located relative to the firing chamber so as to supply fuel thereto in a direction coaxial with the tornado flow.

3,372,679
FUEL TANK VENTING SYSTEM
William H. Aitken, Park Forest, Ill., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Apr. 27, 1966, Ser. No. 545,729
8 Claims. (Cl. 123—136)



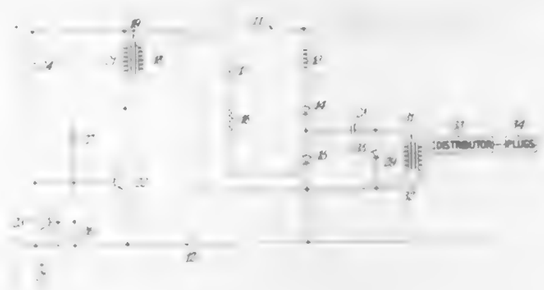
1. In a portable tool driven by an engine utilizing a volatile fuel, a fuel tank having an opening therein to provide access to the interior of said tank, removable cap means closing off said opening, an expansion chamber located outside of and adjacent to said tank, valve means through which said fuel and air can pass between said fuel tank and said expansion chamber, said valve means being actuated by predetermined pressure conditions within said fuel tank, air vent means having a first portion thereof in communication with said expansion chamber and having a second portion connected to a second chamber which is open to atmospheric pressure.

3,372,680
TIME CONTROL CIRCUIT FOR FUEL INJECTION SYSTEM
Hermann Scholl, Stuttgart, Germany, assignor to Robert Bosch, G.m.b.H., Stuttgart, Germany
Filed Feb. 8, 1966, Ser. No. 525,986
Claims priority, application Germany, Feb. 11, 1965, B 80,465
15 Claims. (Cl. 123—139)



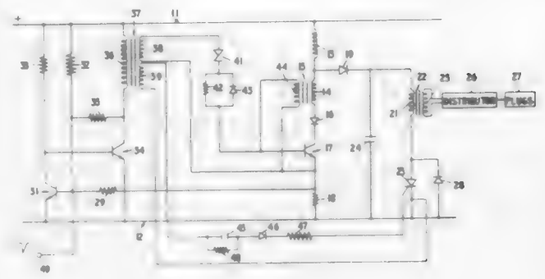
An electronic control arrangement for controlling the injection of fuel in internal combustion engines. A monostable multivibrator circuit actuated by a switching mechanism operated by the crankshaft of the engine provides a train of pulses transmitted to electromagnetic valves

used to control the amount of fuel injected into the cylinders of the engine. The duration of the pulses, and hence the duration of the opening of the electromagnetic valves, is regulated through a variable core displacement transformer. The core of the displacement is positioned as a function of the pressure within the intake manifold. A time control circuit further modifies the duration of the pulses for actuating the electromagnetic fuel injection valve, so as to obtain the desired pulse duration versus core displacement characteristic. The time control circuit includes a transistor and a resistor connected in series with the emitter-collector path of the transistor. A capacitor is connected in parallel with the series combination of the resistor and transistor path. The output pulses of the monostable multivibrator circuit are applied to the base of the transistor. The output of the time control circuit is, in turn, fed back to the input circuit of the monostable multivibrator circuit to modify the duration of the pulses in the desired manner.

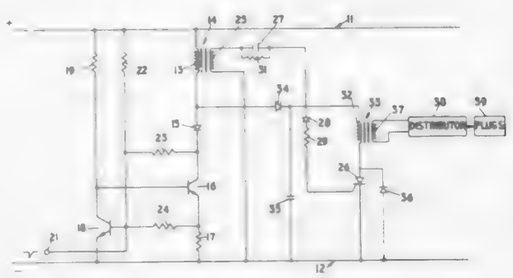
3,372,681
SPARK IGNITION SYSTEMS
Brian Leslie Phillips and Derek Stanley Adams, Birmingham, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Mar. 8, 1966, Ser. No. 532,629
Claims priority, application Great Britain, Mar. 10, 1965, 10,109/65
15 Claims. (Cl. 123—148)

In a spark ignition system for an internal combustion engine, an inductor is connected in series with a switch across a battery. The switch is closed at periodic intervals by the engine, and when it closes energy is stored in the inductor, this energy later being used to produce a spark at a plug of the engine in timed relationship thereto. Associated with the series circuit a switch and inductor is a saturable transformer in the primary winding of which current flows at the same time as current flows through the series circuit. When the saturable transformer saturates, the switch is turned off, and so the current flowing in the series circuit is always turned off at a predetermined value, so that the energy stored in the inductor each time the switch closes is constant.

3,372,682
SPARK IGNITION SYSTEMS FOR INTERNAL COMBUSTION ENGINES
Brian Leslie Phillips and Derek Stanley Adams, Birmingham, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Mar. 8, 1966, Ser. No. 532,639
Claims priority, application Great Britain, Mar. 10, 1965, 10,329/65
1 Claim. (Cl. 123—148)

In a spark ignition system, a transistor is turned on by means driven by the engine, and when it is turned on energy is stored in an inductor in series with the transistor. The transistor is turned off when the current flowing in the inductor reaches a predetermined value, and the energy is then transferred to a capacitor, which when the transistor is turned on again is discharged to produce the spark. In series with the transistor is a transformer, and the arrangement is such that as the current through the transistor increases, the transformer applies an increasing base drive to the transistor so as to ensure adequate base current in the transistor as the current in the inductor increases.



3,372,683
SPARK IGNITION SYSTEMS
Brian Leslie Phillips, Handsworth, and Derek Stanley Adams, Acocks Green, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Mar. 8, 1966, Ser. No. 532,694
Claims priority, application Great Britain, Mar. 10, 1965, 10,112/65
12 Claims. (Cl. 123—148)

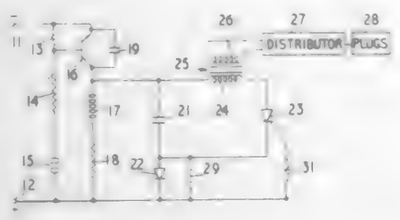


In a spark ignition circuit, means driven by the engine turns a switch on so that current flows through the switch to an inductor and is stored in the inductor. When the current flowing in the inductor reaches a predetermined value, the switch is turned off, and at this stage the energy in the inductor is transferred to a capacitor, where it is stored. The next time the switch is turned on again to store energy in the inductor, the controlled rectifier is turned on at the same time, the capacitor then discharging through an ignition transformer and the controlled rectifier to produce a spark.

3,372,684
SPARK IGNITION SYSTEMS
Brian Gilbert, Sutton Coldfield, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Mar. 9, 1966, Ser. No. 532,971
Claims priority, application Great Britain, Mar. 11, 1965, 10,331/65
1 Claim. (Cl. 123—148)

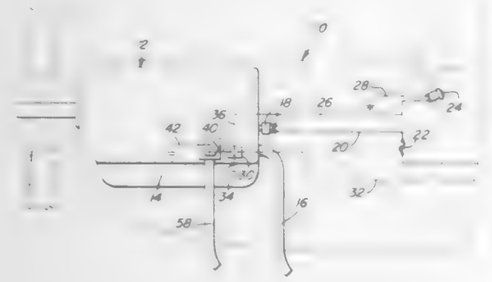
In a spark ignition system, switch means is driven by the engine and when closed permits energy to be stored in an inductor. When the switch means is open, the energy

is transferred from the inductor to a capacitor, and then a controlled rectifier is turned on to permit discharge of the capacitor through the controlled rectifier, this discharge producing a spark. The spark is produced while



the switch means is still open, and the circuit is so arranged that when the switch means closes again, the anode of the controlled rectifier will be connected to the negative terminal of a D.C. source, so ensuring that the controlled rectifier is reverse biased and turned off.

3,372,685
EXCESSIVE CRANKCASE PRESSURE WARNING SYSTEM AND RELIEF VALVE
Ardell T. Bestland, 1230 S. 9th St., and Thomas M. Breton, 1906 S. 19th St., both of Grand Forks, N. Dak. 58201
Filed Dec. 5, 1966, Ser. No. 599,072
8 Claims. (Cl. 123—198)

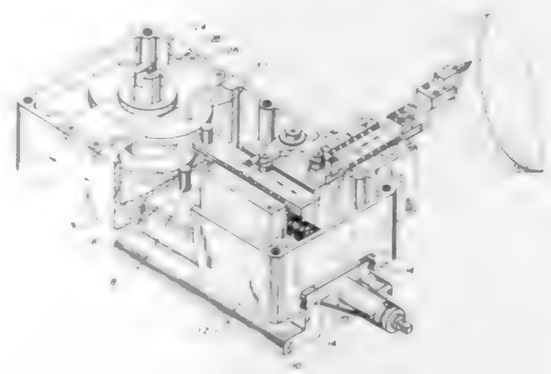


1. In combination with an internal combustion engine crankcase including a crankcase breather outlet pipe subject to blockage, pressure sensing means communicated with the interior of said crankcase and operative to render a signal at a remote location in response to a rise in pressure within said crankcase above a predetermined pressure.

3,372,686
ARCHERY BOW HANDLE WITH RESILIENTLY BIASED ARROW REST
Earl J. Losh, 437 E. 3rd St., Boyertown, Pa. 19512
Filed Sept. 30, 1965, Ser. No. 491,743
3 Claims. (Cl. 124—24)

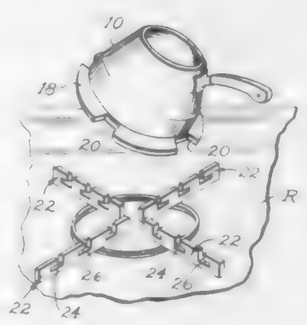
1. In an archery arrow rest, a bow handle having a permanent arrow shelf and a cutout window section, said rest being arranged in the cutout window section of the bow handle, said rest having a generally triangular formation and including upper and lower tapered edges, said rest further including a straight surface, and angularly arranged inclined surfaces, there being an aperture in said rest, and said aperture being arranged off center in the rest, a securing element extending through said aperture and into engagement with said bow handle to provide a pivot mounting for the rest, the lower portion of said rest having a horizontally disposed opening therein, a resilient member having a portion thereof extending through said opening and being affixed to the rest adjacent the straight surface thereof, and a retaining member for securing the other end portion of said resilient member to said bow handle.

3,372,687
WHEEL DRESSER
Jerzy Grabowski, 17 St. Charles Ave., West Caldwell, N.J. 07006
Filed Apr. 19, 1966, Ser. No. 543,581
10 Claims. (Cl. 125—11)



1. A wheel dresser adapted to move a diamond dresser point and the like along both X and Y axes and to and into the face of a rotary grinding wheel to precisely form the face of the wheel, the dresser comprising: (a) a base; (b) a body carried by and movable on the base and in the direction of the X-axis; (c) a cam shaft carried by and rotatable in the body; (d) means to rotate the cam shaft at a determined rate and direction; (e) a pair of cams removably mounted on the cam shaft and having their contours formed to a calculated and selected shape said cams having means for positioning the cams in a selected orientation on the cam shaft; (f) a cam follower carried by a member slidably retained in the base, the follower member movable in the direction of the X axis and to a selected position in response to a means for moving the member, the follower disposed so as to engage the outer contour of one of the cams as it is rotated and in response thereto to thereby move the body in the direction of the X-axis; (g) a first slide block movable in a guideway in the body and in the direction of the X-axis, said slide block having a cam follower on one end, said cam follower being adapted to engage the outer surface of the other cam as it is rotated so as to move the slide block; (h) a stop block carried by said slide block; (i) a bell crank arm pivotally mounted on and carried by the body, one portion of the arm extending to the first slide block and said end of the arm having means adapted to engage the stop block and to be moved by the stop block as it is moved on the X-axis; (j) a second slide block movable in a guideway in the body and in the direction of the Y-axis, said second block having an engaging face formed at one end and on the other end a dresser point holding means; (k) a second portion of the pivotally mounted arm extending to the second guide block, the outward end of said second portion having means adapted to engage and move the second slide block; and (l) means for maintaining the cam followers in engagement with their respective cam contours so that as the cams are rotated the cam follower carried by the base causes the body to move along the X-axis and the cam follower on the first slide block moves the arm to cause the second slide block to move along the Y-axis and as the cams are rotated the resultant movement provides a path of the dresser point along a combined X and Y axis in response to the contour of the rotating cams.

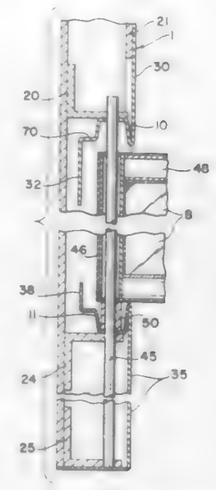
3,372,688
LOCKABLE COMBINATION OF COOKING GRATE AND VESSEL
Roland J. Moore, 104—23 113th St., Richmond Hill, N.Y. 11418
Filed July 5, 1966, Ser. No. 562,844
18 Claims. (Cl. 126—24)



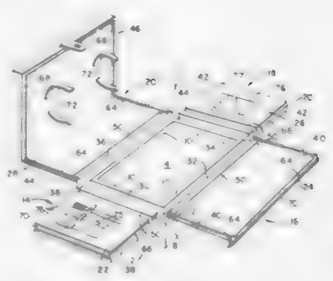
An interlocking cooking utensil and grate for use on stoves.

3,372,689
FIREPLACE DOOR
James A. Goudy, Akron, Ohio, assignor to Heritage Fireplace Equipment Co., Tallmadge, Ohio, a corporation of Ohio
Filed Aug. 6, 1965, Ser. No. 477,702
1 Claim. (Cl. 126—140)

1. In a fireplace with a front opening and doors each comprising a plurality of foldable panels hinged at their respective outer edges to opposite edges of the opening, and a track at the top and bottom of the opening, with projectable means in the top and bottom of the inside edge of each innermost door panel engageable in and disengageable from the respective tracks, the improvement in which each track is a portion of a one-piece shroud-and-track-forming trim which includes opposed channel-shaped track means, each of which is spaced vertically from the nearest horizontal edge of the doors when closed over the opening so as to provide a slit opening between the doors and the trim, with cams near the respective ends of at least one of said track means to move the projectable means when projected into the track outwardly as it approaches an end of the track, each of said shroud-and-track-forming trims being formed of a single sheet of metal and comprising as integral parts thereof: (1) trim means bent back vertically from the front edge of the track and covering a face of the fireplace adjacent said opening, and (2) a shroud which is horizontally offset inward from the inside edge of each of said tracks and prevents the interior of the fireplace from being visible from the front of the fireplace through either of said slit openings.



3,372,690
INSULATED LUNCH BOX
Noelia Ruiz, 477 Hicks St., Brooklyn, N.Y. 11231
Filed June 6, 1966, Ser. No. 555,462
7 Claims. (Cl. 126—261)



A portable lunch box for carrying a preheated prepared food tray having an insulated base portion, an insulated top and four sides, said sides having grooves which coact with the edge of the food tray to thereby secure the tray upon said base when the lunch box is closed.

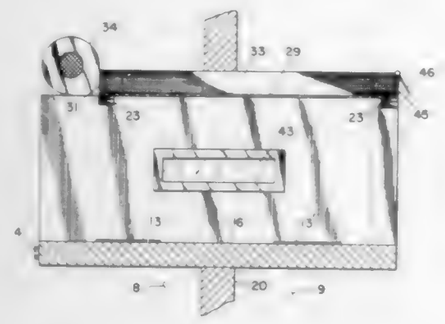
3,372,691
METHOD AND SYSTEM FOR MAINTAINING A VERTICALLY VARYING CONCENTRATION IN A LIQUID SOLUTION AND FOR CONVERTING BODIES OF WATER INTO EFFICIENT SOLAR COLLECTORS
Spraya Shachar, 15 Sderot Ben-Zion, Tel Aviv, Israel
Filed Aug. 2, 1965, Ser. No. 476,416
18 Claims. (Cl. 126—271)

A method and system are described for maintaining an inverse temperature gradient between an upper and a lower level in a liquid column, for example, a solar pond of saline water in which the pond has a dark layer to absorb radiations from the sun applied through the upper layer. A vertically varying concentration of the salt in the

solar pond sufficient to support the inverse temperature gradient is maintained by inducing a downward flow of the saline water counter to the diffusion flux of the salt. This counter flow is induced by extracting, from the lower

level, water having a smaller concentration of salt then at the upper level, both being regulated at rates so as to maintain the vertically varying concentration while avoiding excessive mixing.

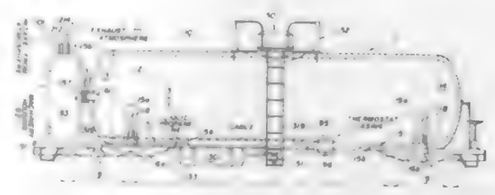
3,372,692
COOKING RANGE VENTILATING SYSTEM
Robert McGirr, Orwigsburg, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed May 31, 1966, Ser. No. 554,040
6 Claims. (Cl. 126—299)



A ventilating system is disclosed which includes a plenum chamber having a perforated portion with perforations between about 1/16 inch and 1/4 inch in diameter spaced from about 2/16 to about 5/16 inch apart center to center, opening or closing means at one end of the plenum chamber, and an air blowing unit operatively connected at the end opposite said opening or closing means. The ventilating system is desirably included as a component of a cooking range.

3,372,693
HEATING SYSTEMS AND RAILWAY TANK CARS INCORPORATING SUCH HEATING SYSTEMS
Gregoire Gutzeit, Highland, Ind., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Continuation-in-part of application Ser. No. 311,457, Sept. 25, 1963. This application Jan. 22, 1965, Ser. No. 427,223
The portion of the term of the patent subsequent to May 31, 1983, has been disclaimed
16 Claims. (Cl. 126—343.5)

1. A railway tank car comprising a mobile frame, heat-insulated tank structure carried by said frame and adapted to contain a liquid lading that is to be maintained in a hot condition, a heating conduit carried by said tank structure and arranged to be in good heat-exchange reaction with the lading contained therein, a flameless combustion heater carried by said frame and including a porous catalytic bed, means carried by said frame for supplying a combustible mixture in the gas phase into the catalytic bed of said heater, the catalytic bed of said heater being characterized by producing flameless catalytic combustion therein of the combustible mixture supplied thereto and the consequent production and discharge therefrom of hot flue gases, and means carried by said frame for



conducting through said heating conduit the hot flue gases discharged from the catalytic bed of said heater, thereby to maintain the hot condition of the liquid lading contained in said tank structure.

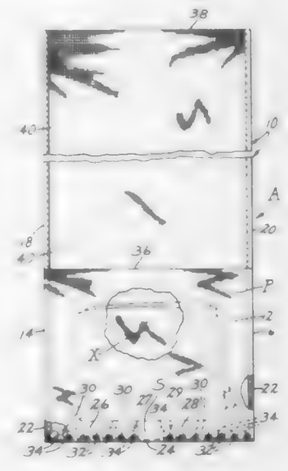
3,372,694
FOOD COOKING AND HEATING UTENSIL
Helmuth Vehse, 28 Oenekinger Weg, 588 Ludenscheid, Westphalia, Germany
Filed May 11, 1966, Ser. No. 549,404
Claims priority, application Germany, May 12, 1965, L 50,680; June 9, 1965, L 50,876; Aug. 12, 1965, L 51,360
10 Claims. (Cl. 126—369)

A cooking utensil comprising at least two separate containers, which are arranged and shaped with respect to each other so that, when both containers are at least partially filled with a cooking liquid, a pocket of air will form, which is at least partially enclosed by the inner container of said two separate containers. When the cooking utensil is heated, the air in the pocket of air expands and pushes the cooking liquid towards food, temporarily placed in the cooking utensil, where it may be cooked in the cooking utensil. When the cooking utensil is thereafter cooled, a partial vacuum forms in said pocket of air, which causes an evacuation of the cooking liquid from the area where the food is being cooked into said pocket of air.

3,372,695
METHOD OF OVERCOMING INCONTINENCE
Maurice Beliveau, Poughkeepsie, and Ferdinand A. Rocchi, Wappingers Falls, N.Y., assignors to Prosit Service Corporation, Wappingers Falls, N.Y.
Filed Apr. 27, 1965, Ser. No. 451,230
1 Claim. (Cl. 128—1)

A plug for insertion in the urethra to overcome incontinence of urination comprising an elongated stem of a length substantially greater than its thickness and width having a retainer member fixedly secured to the stem at one end thereof and projecting beyond said end of the stem. The retainer member has portions which are flexible and which extend away from each other from the stem. The plug is adapted to be inserted within the urethra with the retainer member extending into and engaging the walls of the bladder to retain the stem in position in the urethra. A fine cord may be attached to the other end of the stem and extend to the outer end of the urethra. The cord serves to properly position the stem in the urethra and to remove the plug from the urethra.

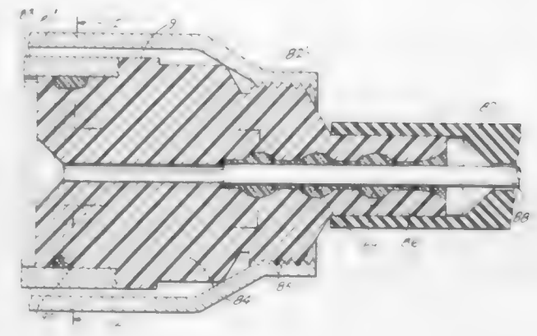
3,372,696
ABDOMINAL PAD USED IN SURGERY
Peter S. Rudie, 2002 E. 4th St., Duluth, Minn. 55812
Filed Jan. 22, 1965, Ser. No. 427,315
5 Claims. (Cl. 128—132)



The disclosure is an abdominal pad used in surgery and includes a flat thin flexible body member having a pocket formed on the lower end thereof, the remaining portion of the flat body member forming an apron. The lower edge of the body member has weight means secured thereto for maintaining the lower portion of the body member in the cavity of the abdomen to control the intestines therein.

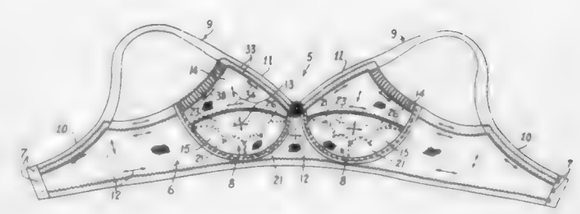
3,372.697
SYRINGE CARTRIDGE AND ASSEMBLY
George H. Keller, Ridgewood, N.J., assignor to Becton, Dickinson and Company, East Rutherford, N.J., a corporation of New Jersey
Filed Dec. 31, 1962, Ser. No. 248,370
1 Claim. (Cl. 128—221)

1. A medicament cartridge assembly including in combination an elongated hollow cylindrical barrel formed of glass, a hub of plastic material mounted upon an end of the barrel and having a part thereof extending into the barrel at said end, said hub having a bored tip extending outwardly of said barrel and having a substantially coaxially disposed bore, a cannula extending into said bore, a layer of bonding material interposed between the bore surface and the cannula with the bore surface of the tip defining a recess such that said bonding material keys into said recess, the part of said hub extending into the barrel being formed with a number of recesses in its surface with an encircling channel communicating with said number of recesses, and a bonding agent keying into said number of recesses and said channel and engaging with the barrel to prevent movement of the hub relative to the



barrel, said hub presenting upon its face a retaining surface to be engaged by a corresponding surface of a cartridge holder for securing the latter against movement with respect to the hub and said barrel, said retaining surface embracing screw threads encircling said hub.

3,372,698
BRASSIERE
Marcel Gingras, St. Foy, Quebec, Canada, assignor to Dominion Corset Company Limited, Quebec, Canada
Filed Oct. 14, 1965, Ser. No. 495,985
5 Claims. (Cl. 128—489)

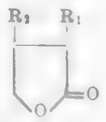


A brassiere in which the body encircling band and the cups are made of material stretchable in all directions. The cups are formed of upper and lower sections joined together by a ladder stitch and a zig-zag seam for maximum expansion and contraction and the straps are stretchably joined to inwardly facing upper edge portions of the cups, and the seams between the cups and adjacent portions of the body-encircling band are stabilized by an arcuate insert. The lower portion of each cup is reinforced by a reinforcing member made in two sections to provide flexibility in the horizontal plane and have their upper edges deeply scalloped and is covered in the inwardly facing side by a layer of material stretchable in all directions.

3,372,699
TOBACCO
Joseph N. Schumacher, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,672
15 Claims. (Cl. 131—17)

1. A tobacco product having added thereto an amount sufficient to alter the flavor or aroma of the tobacco

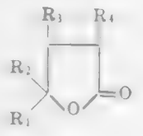
product of a compound selected from the group of compounds having the formula



wherein R_1 and R_2 are selected from the group consisting of hydrogen and alkyl groups with at least one of such substituents being alkyl.

3,372,700
TOBACCO
Joseph N. Schumacher, Donald L. Roberts, and Wilmer A. Rohde, Winston-Salem, N.C., assignors to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,709
15 Claims. (Cl. 131—17)

1. A tobacco product having added thereto an amount sufficient to alter the flavor or aroma of the tobacco product of a compound selected from the group of compounds having the formula

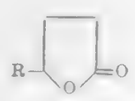


Formula

wherein R_1, R_2, R_3 and R_4 are selected from the group consisting of hydrogen, alkyl and alkenyl groups with at least two of such substituents being other than hydrogen and at least one of the latter groups being present in the gamma ring position.

3,372,701
TOBACCO
Claude E. Teague, Jr., Joseph N. Schumacher, and Wilmer A. Rohde, Winston-Salem, N.C., assignors to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,710
21 Claims. (Cl. 131—17)

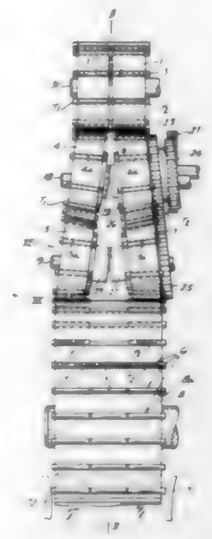
1. A tobacco product having added thereto an amount sufficient to alter the flavor or aroma of a tobacco product of a compound selected from the group of compounds having the formula:



where R is a straight-chain alkyl group of from 1 to 10 carbon atoms.

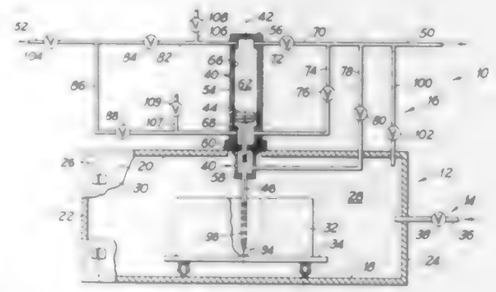
3,372,702
METHOD AND APPARATUS FOR MAKING AND MANIPULATING CIGARETTES AND SIMILAR ROD-SHAPED ARTICLES
Horst Bohn, Hamburg, and Karl-Heinz Schlüter, Hamburg-Bergedorf, Germany, assignors to Hauni-Werke Korber & Co. K.G., Hamburg-Bergedorf, Germany
Continuation-in-part of application Ser. No. 822,510, June 24, 1959. This application Mar. 26, 1964, Ser. No. 354,900
Claims priority, application Germany, June 28, 1958, H 33,677; Aug. 25, 1958, H 34,162
12 Claims. (Cl. 131—94)

An apparatus and method for making cigarettes wherein a continuous cigarette rod is severed into double lengths, moved sideways and severed into unit lengths, separated without touching the severed ends and has double filter mouthpieces inserted and attached between the ends,



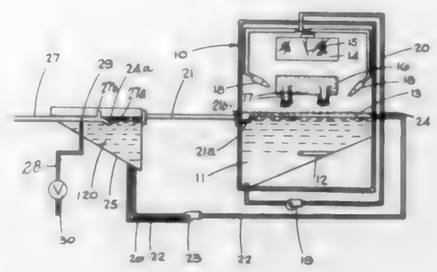
after which the newly joined double cigarette is severed into unit cigarette lengths at the mouthpiece.

3,372,703
TOBACCO MOISTENER
Arthur Bayard Conard, Jr., Shreveport, La., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed June 13, 1966, Ser. No. 557,051
9 Claims. (Cl. 131—133)



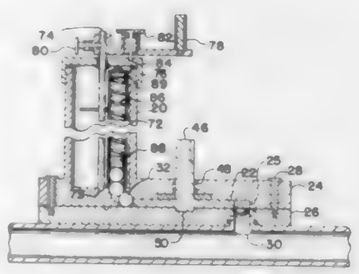
1. A tobacco moistening apparatus comprising:
a housing with a compartment for enclosing a tobacco body;
a steam supply system connecting to said compartment for moistening the tobacco body therein; and
a steam exhaust system connecting to said tobacco body for removing steam from the interior thereof, said exhaust system including:
a cylinder with a longitudinal axis mounted on said housing,
a piston disposed in said cylinder coaxially therewith and displaceable relative thereto,
a probe fixedly connected to said piston adapted to be retracted therewith into said cylinder and extended into said tobacco body, said probe having an axial passage,
a pressure header and an exhaust header connecting to said cylinder for actuating said piston and means coupled to said probe passage for evacuating said tobacco body when said probe is extended therein and for evacuating steam through said probe from said pressure header when in said retracted position.

3,372,704
DEGREASING
Norman Ives Ashworth, St. Martins, Guernsey, Channel Islands, assignor to Abrasive Developments Limited, Solihull, England, a British company
Filed Aug. 31, 1964, Ser. No. 393,031
Claims priority, application Great Britain, Sept. 14, 1963, 36,280/63
1 Claim. (Cl. 134—109)



A degreasing apparatus having a tank containing the degreasing liquid and nozzles arranged above the tank to direct the liquid on the contaminated object and return same to the tank. Means for skimming liquid and grease from the surface of the liquid in the tank, separating grease from the withdrawn liquid and returning the clarified liquid to the tank.

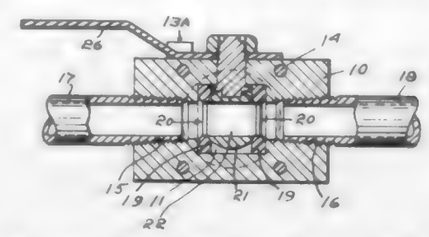
3,372,705
BALL SEALER INJECTOR
James A. Bodhaine, 1521 Pecos, Hobbs, N. Mex. 88240
Filed Dec. 13, 1966, Ser. No. 601,461
12 Claims. (Cl. 137—268)



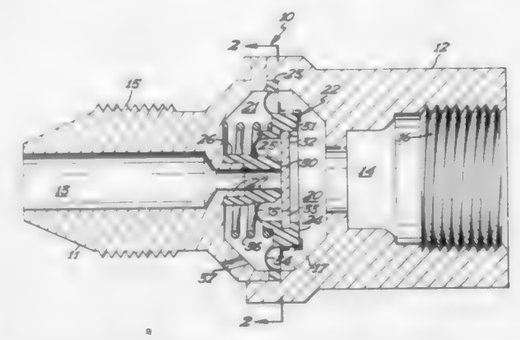
A ball sealing device having a reservoir containing a multiplicity of balls located in individual tubes above a main body that houses a rotating plate. The main body includes a ball inlet, a ball outlet, and a toroidal passageway that extends 180° and cooperates with the circular plate to positively feed balls from the inlet, through the toroidal passageway located in the body, to the outlet, and into a pipe line to thereby meter balls from the reservoir into the pipe line, where the balls then flow along inside the pipe line and into a casing located in a bore hole to thereby close off perforations located in the wall of the casing.

3,372,706
SIDE ENTRY VALVES
William A. Brice, South Portland, Maine, assignor, by mesne assignments, to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,841
14 Claims. (Cl. 137—329.03)

1. In a side entry valve, a body having a chamber opening through one of its sides and aligned ports in opposite ends in communication with said chamber, a side cover for said chamber detachably attached to said body, a pair of members each including concave seats that are resiliently yieldable, a spherical valve member between said seat members and having a passage extending therethrough, valve operating means including a valve stem rotatably supported by said body, said seats and said valve member being insertable as an assembly into said chamber through said side opening but requiring the yielding of said seats to enable such insertion to be effected, an annular portion of each seat close to its opening conforming to the engaged portions of said valve member when the assembly is inserted, and a connection between said valve member and said stem operable when said assembly is in place within said chamber.

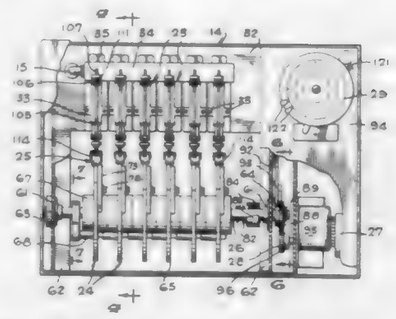


3,372,707
PRESSURE REGULATOR VALVE
William R. Dunn, Los Angeles, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,410
7 Claims. (Cl. 137—505.25)



A pressure regulator valve wherein the pressure responsive flexible wall, the valve carrying portion and the valve seat are all parts of a single or unitary member mounted within the valve body.

3,372,708
AUTOMATIC CAM OPERATED PLURAL VALVE CONTROL SYSTEM
Paul M. Hotchkin, 20448 Quedo Drive, Woodland Hills, Calif. 91364
Filed Apr. 25, 1966, Ser. No. 544,981
10 Claims. (Cl. 137—624.2)



1. An automatic control system comprising:
a plurality of three-way valves having a pressure inlet, an outlet communicating with a remote pressure operated valve, and a relief, and valve means

selectively movable between a first position wherein said outlet is connected with said inlet and a second position wherein said outlet is connected with said relief;

a cam shaft;

a first cam mounted on said cam shaft, secured thereto and driven thereby;

a plurality of second cams mounted to rotate freely on said cam shaft adjacent said first cam;

a dog and a lug formed on each of said second cams, each of said dogs being adapted to engage the lug on the next adjacent cam;

a dog formed on said first cam adapted to engage the lug on the one of said second cams next adjacent it;

a cleft in the profile of each of said cams;

means for selectively varying the length of each of said clefts;

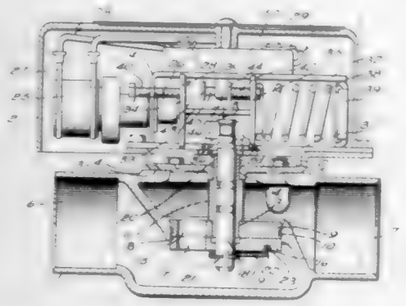
a cam follower associated with each of said cams and controlling the movement of one of said valve means between said first position and said second position in accordance with the profile of said cam;

means for rotating said cam shaft;

first switch means activating said rotating means; and

second switch means deactivating said rotating means after predetermined angular rotation of said cam shaft.

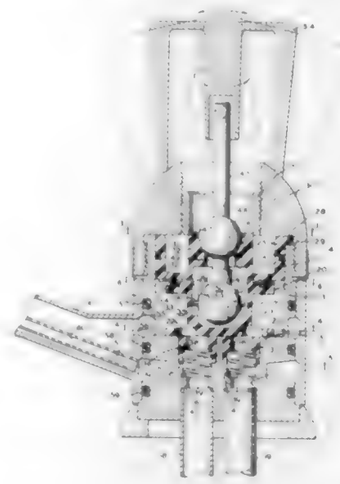
3,372,709
ZONE VALVE
Paul A. Dolter, Roselle, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Sept. 13, 1965, Ser. No. 486,668
4 Claims. (Cl. 137—625.31)



A fluid control valve having a pair of rotary valve members which move relative to each other to cover and uncover flow ports therein to control the flow of fluid from an inlet to an outlet. The rotary action of the valve members is accomplished by means of a thermal power unit which operates on a torque arm to generate the rotary motion required. The valve members have flow ports which may be either aligned to open the valve or misaligned to close the valve. Raised lands are formed about each of the flow ports on one of the valve members, and a constant biasing means is exerted between the valve members to maintain a fluid seal at the raised lands.

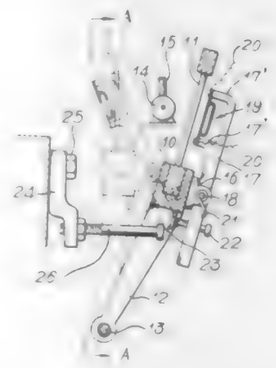
3,372,710
SINGLE HANDLE FAUCET VALVE
Larry J. Miller, 3810 Shoals, Drayton Plains, Mich. 48020
Continuation-in-part of application Ser. No. 456,311, May 17, 1965. This application Mar. 17, 1966, Ser. No. 537,257
29 Claims. (Cl. 137—636.3)

The single handle faucet valve disclosed herein comprises a body defining a chamber having a flat wall surface with hot and cold water inlets extending through the surface. A control disc with a complementary flat surface is provided in contact with the flat wall surface of the chamber and has spaced openings therein movable into and out of registry with the inlet openings. A sealing member is provided adjacent the control member and sealing means on the control member are interposed between the sealing member and control member. A lever is jour-



nalled for rotation in the sealing member and has an end thereof interconnected with the control member. Means are provided for limiting the movement of the lever to a reciprocating motion in a single plane at an angle to the flat surface of the chamber.

3,372,711
WEFT THREAD CUTTING DEVICE FOR USE IN SHUTTLELESS LOOMS
Toemon Sakamoto, 299 Hirosawa-cho, Shizuoka-ken, Hamamatsu-shi, Japan
Filed May 18, 1966, Ser. No. 551,107
Claims priority, application Japan, Aug. 4, 1965, 40/47,666
3 Claims. (Cl. 139—122)

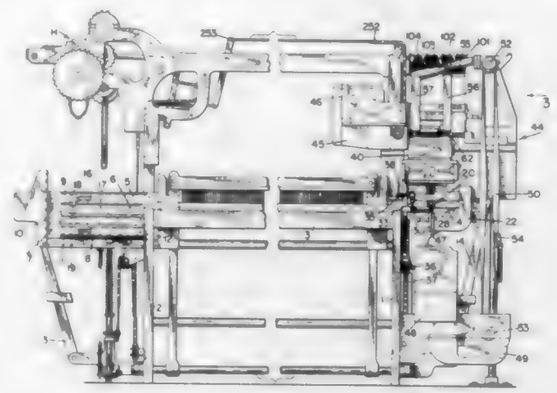


The invention relates to an electrically heated weft thread cutting device having a first sharp edge for sharply severing a rearmost end of a weft thread from a succeeding length of th ead, and a second curved edge for producing a spherical configuration on the forward end of the weft thread.

3,372,712
MEANS AND METHOD FOR WINDING DIVERSE WEFT BOBBINS ON A LOOM
Robert S. Schedin, East Brookfield, Mass., assignor, by mesne assignments, to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed July 22, 1963, Ser. No. 296,783
54 Claims. (Cl. 139—224)

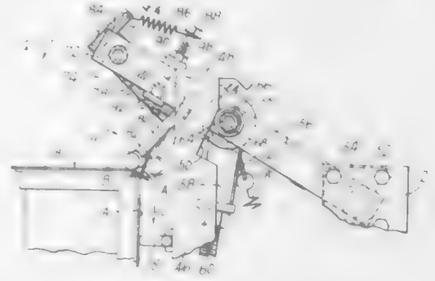
Automatic mechanism for use especially with multi-weft replenishing looms having a plurality of shuttles each of which normally carries a yarn differing from the others.

A winder is provided for winding on signal a selected one of the differing yarns on a bobbin for transfer to a selected magazine compartment for eventual use by the related shuttle. Memory means are included to provide indica-



tions signalling the depletion of the bobbins having the differing yarns wound thereon. Weft control means are included to present to the winder, for winding, yarn of the type which is wound on those bobbins having the greatest degree of depletion in the magazine.

3,372,713
WIREBOUND BOX ASSEMBLING MACHINE
Robert B. Fitch, Lake Valhalla, Montville, N.J., assignor to Stapling Machines Co., Rockaway, N.J.
Filed June 3, 1965, Ser. No. 460,976
6 Claims. (Cl. 140—113)



A self-adjusting machine for closing wirebound boxes with interengaged loop fasteners, having movable actuator assemblies with loop bending members resiliently mounted thereon on pivotal axes located so that said loop bending members move first downwardly to engage the top of the box, then forwardly to the closing corner of the box, then downwardly along the front of the box to bend the outer loop downwardly around said corner and the inner loop around the outer loop and downwardly against the side of the box.

3,372,714
METHOD OF CONTROLLING THE FLOW OF MOLTEN SLAG FROM A BLAST FURNACE
Merle H. Schmidt, Johnstown, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 530,015
1 Claim. (Cl. 141—1)

1. A method of controlling the continuous flow of molten slag from a blast furnace to slag receiving vessels comprising:

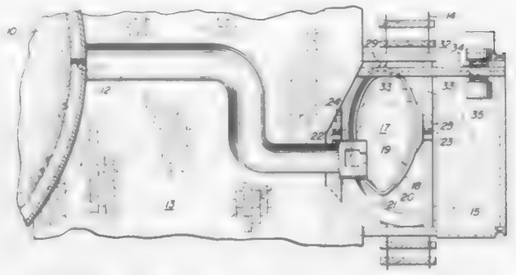
(a) tapping molten slag from a furnace,

(b) flowing said slag into a refractory-lined runner,

(c) flowing said slag from said runner to a first slag receiving vessel positioned directly beneath the discharge end thereof,

(d) positioning a pivotally tiltable vessel adjacent the discharge end of said slag runner,

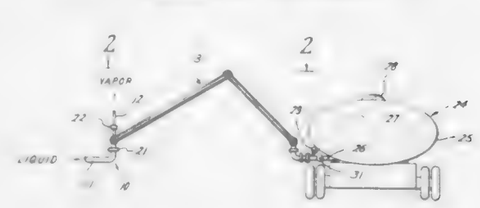
(e) tilting said pivotally tiltable vessel into a horizontal position in the path of flow of the slag to receive said slag from said slag runner when said first slag receiving vessel has received its load of slag,



(f) removing said first slag receiving vessel and replacing said first slag receiving vessel with an empty second slag receiving vessel,

(g) tilting said pivotally tiltable vessel out of the path of flow of the slag to allow the slag in the said pivotally tiltable vessel to flow into the said second slag receiving vessel and to allow the slag in the said slag runner to flow into the second slag receiving vessel.

3,372,715
BOTTOM LOADING ARM
Albert A. Ashton, Dallas, Tex., assignor to The Youngstown Sheet and Tube Company, Youngstown, Ohio, a corporation Ohio
Filed Oct. 25, 1963, Ser. No. 319,021
3 Claims. (Cl. 141—59)



1. A system for transferring liquid comprising,

a vehicular tank,

a liquid conduit attached to and in fluid communication with the lower section of the tank,

a vapor conduit having its inlet end in the top of said tank and its outlet end concentric with said liquid conduit,

a loading arm having a pair of inner conduits and a pair of outer conduits,

means for conducting liquids to and vapors from said loading arm,

a first elbow having two pipes with one pipe extending through the wall of the other pipe,

the ends of said one pipe having common central axes with the respective ends of said other pipe,

the ends of said pipes being concentric at one end of said first elbow,

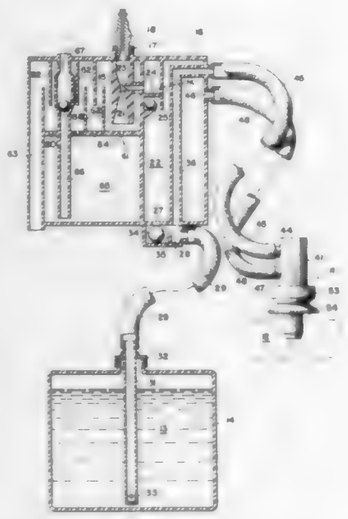
fittings sealingly and rotatably connecting the non-concentric end of said elbow pipes, respectively, to said pair of outer conduits,

a second elbow having an inner and an outer pipe with the ends of the pipes at each end of the elbow having common central axes,

means sealingly and rotatably connecting the pipes at one end of the second elbow to the concentric ends of the pipes of the first elbow,

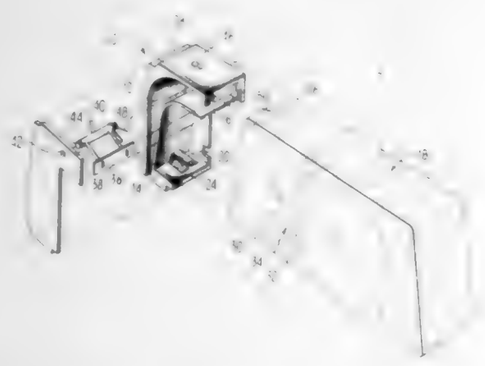
and means sealingly connecting the pipes of the other end of the second elbow to the said vapor and liquid conduit.

3,372,716
BATTERY FILLER DEVICE
Frederick H. Hommel, Mentor, and Howard T. Havlick, Willoughby, Ohio, assignors to The Electric Storage Battery Company, a corporation of New Jersey
Filed Sept. 15, 1965, Ser. No. 487,440
7 Claims. (Cl. 141—59)



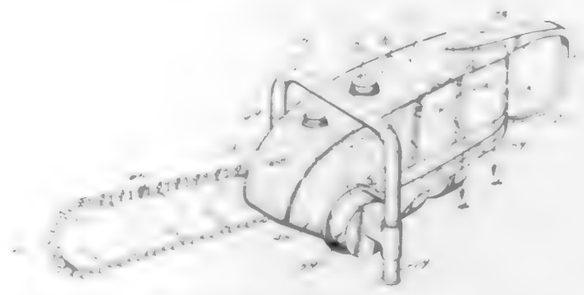
A compact battery filling device comprising a Venturi tube as vacuum source, multiple chambers and baffles to muffle and exhaust said Venturi, chamber hermetically connected to filler head and operating as overflow and vacuum chamber, and suitable pathway for electrolyte to be drawn from reservoir to filler head and battery and to be returned to reservoir upon removal of vacuum.

3,372,717
CHAD COLLECTION APPARATUS
Fenton M. Fisher, Oakland, Calif., assignor to Friden, Inc., a corporation of Delaware
Filed Jan. 26, 1966, Ser. No. 523,055
8 Claims. (Cl. 141—325)



A chad collection container having an overflow chamber is removably mounted to the outlet end of a chad chute such that the chute normally covers the overflow chamber. Removal of the chad container from the chad chute uncovers the overflow chamber to enable chad backed up against the outlet end of the chad chute to be deposited in the overflow chamber. Also, a door located at the outlet end of the chute is opened by attaching the chad collection container to the outlet end of the chad chute and is closed by removal of the chad container from the chute.

3,372,718
CHAIN SAW
Finn T. Irgens, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,905
8 Claims. (Cl. 143—32)

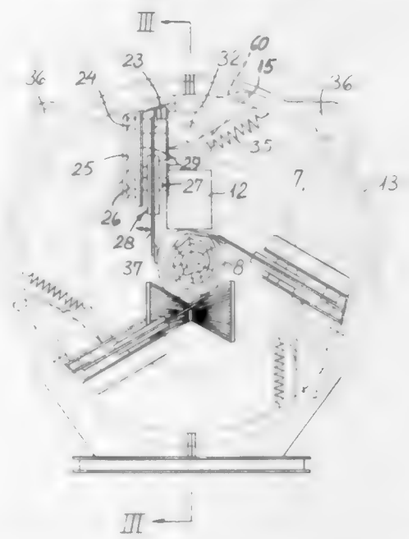


Disclosed herein is a chain saw having a frame, a cutter bar carried on the frame and an internal combustion engine mounted on the frame, together with elastomeric means interposed between the frame and the engine for vibrationally isolating the engine from the frame and from the cutter bar. Rotatably mounted on the frame is a chain sprocket which is connected to the engine crank shaft by elastomeric means also adapted for vibrationally isolating the engine from the sprocket.

3,372,719
CIRCULAR SAW AND INSERT TOOTH THEREFOR
August K. Shone, 2115 Cypress St., Vancouver, British Columbia, Canada
Continuation-in-part of application Ser. No. 476,983, Aug. 3, 1965. This application July 7, 1966, Ser. No. 565,050
10 Claims. (Cl. 143—141)

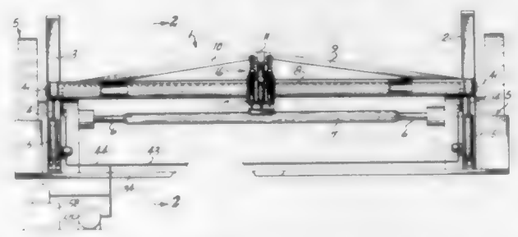
1. A tooth for a circular saw, comprising an elongated body adapted to be substantially in the plane of a saw blade and having an inner end to be secured to the blade and an outer end to project from an edge of the blade, said body having forward and rear edges with reference to the direction of movement of the tooth when in operation, and a solid cutting element integral with and on said outer end of the body and projecting forwardly from said outer end to form therewith a gullet, said cutting element projecting generally forwardly beyond the forward edge of the body and spreading laterally in a forward direction from one side of the body beyond the opposite side thereof, wherein the said portion of the element which projects laterally stabilizes the saw as the teeth cut a path for an object which path is greater in width than the body of the saw blade, said cutting element having a forward end perpendicular to the plane of the body and inclined rearwardly and inwardly towards said body, and a flat outer surface inclined inwardly transversely of the cutting element forming with said perpendicular forward end at the junction therewith a transverse cutting edge extending from said one side of the body angularly in a forward direction across the plane of the body to a side cutting edge beyond said opposite side, said side cutting edge extending rearwardly from and beneath said transverse cutting edge.

3,372,720
MACHINE INTENDED FOR BARKING AND PRUNING
Carl Gustaf Hard af Segerstad, Sandviken, Sweden, assignor to Transventor Aktiebolag, Sandviken, Sweden, a joint-stock company of Sweden
Filed Apr. 27, 1965, Ser. No. 451,140
Claims priority, application Sweden, Apr. 27, 1964, 5,211/64
10 Claims. (Cl. 144—208)



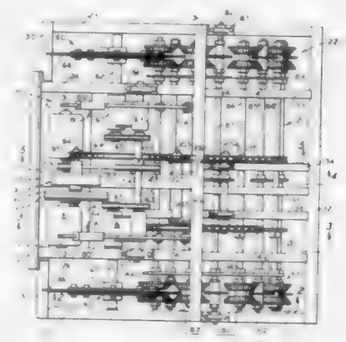
This disclosure relates to providing a novel machine for removing the bark from logs and the like, by providing a hollow rotatably driven rotor, with means defining an axial path of travel of a log through the rotor and with spring-biased bark-scraping members. The bark-scraping members are pivotally mounted on the rotor and are generally disposed equidistantly thereabout. The members each have a plurality of striking or cutting portions, mounted for rotation about a common axis and in a common plane. The cutting portions of each member thus have a common plane which is generally parallel to a longitudinal axis of a log being conveyed along its path of travel. The rotating cutting portions of each of the members are adapted for movement whereby their planes of rotation are biased generally toward the longitudinal axis of a workpiece, for tangentially engaging the periphery of a workpiece. The striking portions of each of the members may take on various configurations.

3,372,721
HYDRAULIC BACKUP ROLLS FOR ROTARY VENEER LATHE
Howard E. James and Jack A. Schikofsky, Marie, Ontario, Canada, assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Apr. 1, 1966, Ser. No. 539,484
7 Claims. (Cl. 144—209)



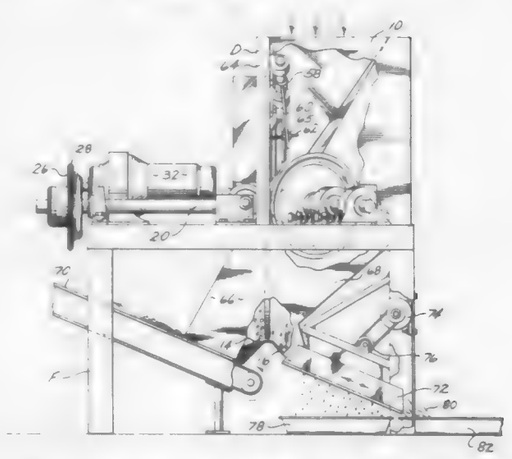
1. An apparatus for stabilizing a log core in a rotating veneer lathe, said lathe being provided with a knife mounted in a carriage that is moved relative to the log at a controlled rate per revolution of the log comprising: spaced-apart end stanchions; a cross support member; said cross support member being mounted between said end stanchions and movable toward and away from said log; at least one backup roll mounted on said cross support member engageable with said log only when the log tends to deflect; said backup roll comprising a hydraulic means associated therewith to move said backup roll toward and away from the center of said log; another hydraulic means responsive to the movement of said carriage; said hydraulic means being responsive to said another hydraulic means so that backup roll moves relative to said log at the same rate as said carriage moves relative to said log.

3,372,722
APPARATUS FOR DRUPE HALVING AND PITTING
Joseph A. Amori, 1596 Davis St., San Jose, Calif. 95100
Original application May 25, 1964, Ser. No. 369,707. Divided and this application Dec. 12, 1966, Ser. No. 607,349
16 Claims. (Cl. 146—28)



Apparatus for halving and pitting drupes characterized by a pair of annular members having parallel axes of rotation, one of said members being in the form of a disc having a peripheral edge adapted to impale the meat of a drupe and grippingly engage the pit thereof, the other of said members having a wedge-shaped channel into which the disc-like member extends, the upper peripheral portions of said members defining therebetween a drupe receiving and supporting pocket, and means for rotating said pair of members to rotate the meat of a received and supported drupe relative to the pit thereof.

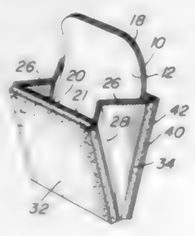
3,372,723
APPARATUS FOR SEPARATING FISH MEAT FROM BONES
Nick F. Elich, San Pedro, Calif., assignor to Star-Kist Foods, Inc., Terminal Island, Calif., a corporation of California
Filed Sept. 13, 1965, Ser. No. 486,605
8 Claims. (Cl. 146—76)



Apparatus for separating fish meat from bones utilizing a frame whereon is mounted a disc formed with a plurality of apertures smaller in width than the length

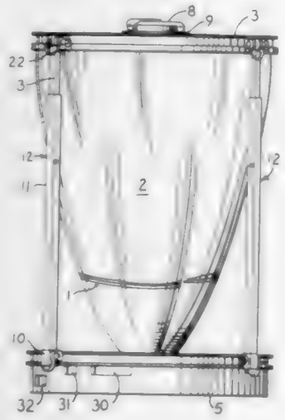
of the bones. The disc is power-operated. A pair of frusto-conical pressing rollers are rotatably supported on the frame, with the sides of the rollers abutting the front of the disc. Rotation of the disc effects concurrent rotation of the rollers. The angular relationship between the rollers and the disc is so selected that during rotation of the disc and the rollers the contacting surfaces of the disc and the rollers will move at substantially the same speed. A pair of back-up rollers are supported on the frame behind the pressing rollers in abutment with the rear surface of the disc to be rotated by the disc. A scraper is supported by the frame in engagement with the front surface of the disc to remove the bones from the front of the disc, with the fish meat being forced through the disc apertures. Preferably, a shaker table is disposed below the front of the disc to effect removal of any meat remaining on the bones scraped off the front of the disc.

3,372,724
PORTABLE SMOKER'S REFUSE RECEIVER
William R. Rouse, 5420 Rambler Way, Sacramento, Calif. 95841
Filed Feb. 2, 1967, Ser. No. 613,617
6 Claims. (Cl. 150—30)



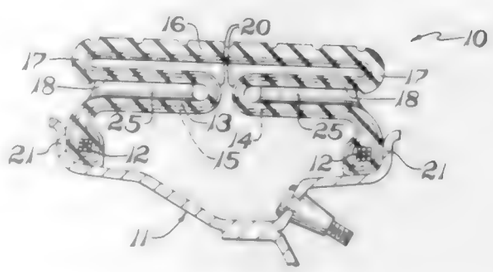
A portable smoker's refuse receiver. While suitable for repetitional use, it is made of lightweight optional throw-away components. It is pocket-size. Can be collapsed and carried in purse or pocket. Lined with fireproof foil. The walls are exteriorly covered with insulating plastic foam and expedite snuffing lighted butts in seconds. Optionally attachable to pack, match folder or other support surface.

3,372,725
COLLAPSIBLE CONTAINER MODIFIED
Frederick T. Voorhees, New York, N.Y., assignor to Barlow Manufacturing Company, Amsterdam, N.Y., a corporation of New York
Filed July 1, 1965, Ser. No. 468,882
20 Claims. (Cl. 150—49)



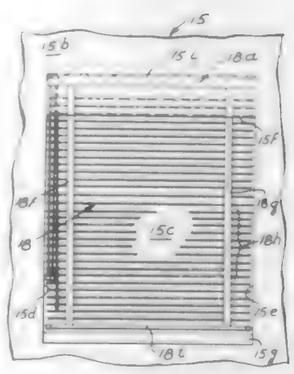
The present inventon comprises a collapsible container having a rigid base pan, a flexible tubular wall attached to the pan, a top cover attached to the wall and movable therewith toward and from the pan, and bracing means between the pan and the top cover for maintaing the container in an erect attitude, and for facilitating emptying the container when folded.

3,372,726
EXPANSIBLE PNEUMATIC TIRE WITH IMPROVED RUN-FLAT OPERATIONAL CHARACTERISTICS
James Sidles, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Apr. 1, 1966, Ser. No. 546,112
4 Claims. (Cl. 152—330)



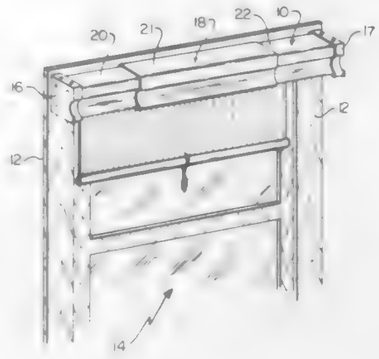
This application discloses an improvement in an expansible tire of the class in which the tire sidewalls are folded on themselves inside the tread so that they extend generally axially of the tire in its deflated condition and in which the tread is contracted when the tire is deflated so that it is only slightly greater in diameter than the diameter of the beads. To augment the "run-flat" capability of the tire (that is to say the ability of the tire to roll under load when it is deflated), a series of ribs are molded on areas of the folded sidewall portions to more firmly and stably support the tread margins against the underlying beads. The ribs further provide for cushioning the tread to minimize cutting of it and other portions of the tire on the beads or rim flanges when the tire is operated in deflated condition.

3,372,727
BUILDING-WALL-AND-WINDOW CONSTRUCTION
Hans K. Lorentzen, Montclair, N.J., assignor to Levolor Lorentzen, Inc., Hoboken, N.J., a corporation of New Jersey
Filed Feb. 8, 1966, Ser. No. 525,977
9 Claims. (Cl. 160—33)



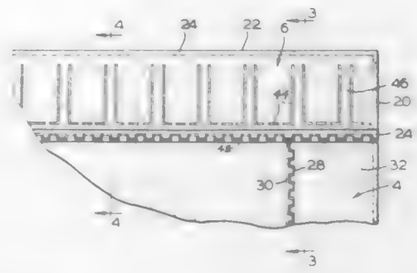
A Venetian blind and a window opening having a recess in the upper portion for receiving the blind in collapsed position. An operator for the blind communicating with the recess and separated therefrom by a partitioning structure.

3,372,728
SHADE CORNICE
Edward E. Schaefer, Winnetka, Ill., assignor to Central Specialties Co., Chicago, Ill., a corporation of Illinois
Filed Dec. 23, 1965, Ser. No. 515,969
3 Claims. (Cl. 160—39)



A window shade cornice which generally includes a pair of brackets and a cornice body portion which is formed of two end sections that are slidably retained within a center section so as to be adjustable in width. Preferably the cornice body portion is fabricated of a plastic which is flexible, to some degree, however, it also may be fabricated of wood or metal. The window shade cornice is easily installed by first mounting the two brackets and then assembling the cornice body portion and adjusting the width of it to fit between the brackets. In packaging the window shade cornices, the sections of the cornice body portion are disassembled and the complete cornice can therefore be packaged in a relatively small package which may be easily shipped and stored.

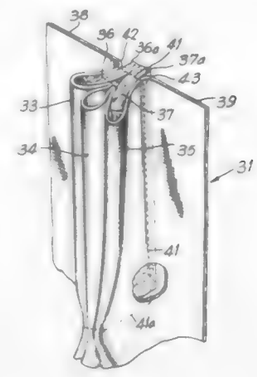
3,372,729
DRAPERIES AND DRAPERY MATERIAL
Carl E. Lindenmayer, 1501 Jennie Scher Road, P.O. Box 7677, Richmond, Va. 23231
Filed Sept. 22, 1965, Ser. No. 489,297
7 Claims. (Cl. 160—330)



Decorative draperies having high insulation properties so they may serve as efficient heat barriers for windows and other building openings are formed of a sandwich of a pair of outer flexible plastic films and an intermediate layer of resilient flexible foam having a thickness about 2.5 to 500 times the thickness of the front plastic film of the drapery.

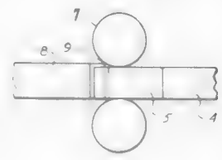
3,372,730
PLEATED CURTAIN CONSTRUCTION
Milton Kalder, 1333 51st St., Brooklyn, N.Y. 11219
Filed June 7, 1965, Ser. No. 461,613
2 Claims. (Cl. 160—348)

A curtain construction with a plurality of multi-pleated sections containing a short insert member simulating a pleat. The pleated sections are in the heading portion, there being an intermediate folded portion between two



flanking pleats and proportioned substantially like the other pleats but extending vertically only the height of the heading, thereby saving material.

3,372,731
METHOD OF WITHDRAWING THE STRAND FROM A CONTINUOUS CASTING MACHINE
Heinrich Pauels, Dusseldorf-Lohausen, Germany, and Walter Meier, Winterthur, Switzerland, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany, and Concast A.G., Zurich, Switzerland
Filed Aug. 30, 1965, Ser. No. 483,525
Claims priority, application Germany, Aug. 29, 1964, Sch 35,703
5 Claims. (Cl. 164—82)



During withdrawal of the dummy bar head and the strand attached thereto from a continuous casting mold, an abrupt dimensional discontinuity interrupts smooth withdrawal when the discontinuity enters a withdrawal roll. To prevent this, the applicant reduces the abrupt discontinuity by shaping of the dummy bar head and allowing the discontinuity to enter a smoothing roller in such manner as to make the transition from head to strand smooth.

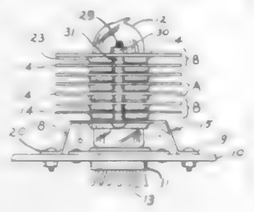
3,372,732
METHOD FOR BONDING ALUMINUM TO BORIDES
Alan C. Cocks, Surbiton, Surrey, and Anthony A. R. Wood, North Holmwood Dorking, Surrey, England, assignors to United States Borax & Chemical Corporation, Los Angeles, Calif.
No Drawing. Filed Sept. 30, 1963, Ser. No. 312,275
Claims priority, application Great Britain, Oct. 15, 1962, 39,010/62
3 Claims. (Cl. 164—102)

A method is provided for bonding aluminum to abrasion-resistant borides, such as titanium diboride. The method comprises heating molten aluminum in contact with the boride to a temperature of at least 1100° C. and then cooling the aluminum to below its melting point. Preferably a flux which dissolves any oxide layer present on the aluminum or boride is employed.

3,372,733
METHOD OF MAINTAINING ELECTRICAL CHARACTERISTICS OF ELECTRON TUBES AND TRANSISTORS AND STRUCTURE THEREFOR

Russell J. Callender, 115 Wildwood Beach Road, Mahtomedi, Minn. 55115

Filed Feb. 11, 1964, Ser. No. 344,019
6 Claims. (Cl. 165—1)

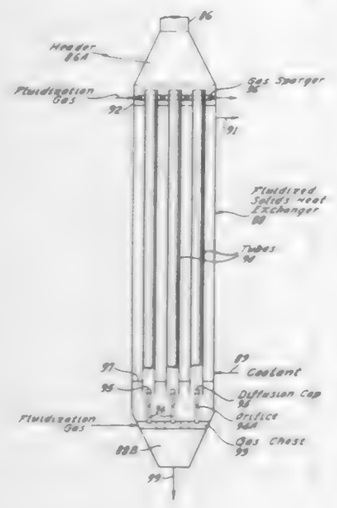


1. A method for controlling and maintaining the output power and electrical characteristics of an enclosed group of internal conductor elements operating at different temperature gradients within an enclosed electronic structure as described, consisting of the steps of positioning the independent rims of a plurality of gradient heat conducting fin means in relatively separate close spaced relationship to each other about the enclosure for said enclosed group of said internal elements, thereby separately and independently effecting the absorption, conduction, and radiation of the internally created heat of each of said internal conductor elements by independently conducting the accumulated heat away from each of the said internal elements, and thereby reducing and maintaining the internal heat pattern of said elements while uniformly maintaining the electrical characteristics and power output of said elements.

3,372,734
FLUID PROCESS USEFUL IN THE RECOVERY OF HYDROCARBONS FROM TAR SANDS

George C. Grubb, Little Silver, N.J., and Marvin F. Nathan, Westport, Conn., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Original application June 1, 1965, Ser. No. 460,367. Divided and this application Sept. 14, 1966, Ser. No. 601,243
2 Claims. (Cl. 165—1)

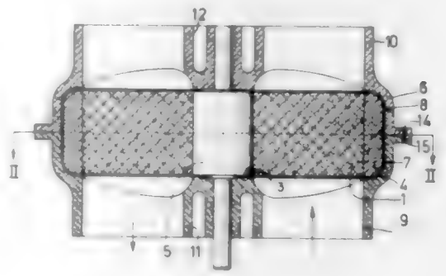


1. A method of extracting heat from fluidizable solid material in substantially vertically disposed multitubular heat exchange zone having an essentially unobstructed header zone situated immediately above the upper apertures of the tubes which comprises: introducing into an upper portion of said header zone fluidizable solid material, introducing fluidization gas into a lower portion of said header zone adjacent said tube apertures to maintain the solids in a fluidized condition and to evenly distribute the solids flowing into the tubes, introducing fluidization gas into the bottom aperture of each tube at substantially the same rate for each tube and flowing solid material downwardly as a plurality of confined streams of fluidized solids in the tubes, passing relatively cool fluid in external contact with the tubes to extract heat from the fluidized solids.

3,372,735
ROTARY HEAT-EXCHANGERS AND HOT-GAS ENGINES

Roelf Jan Meijer, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 7, 1966, Ser. No. 532,279
Claims priority, application Netherlands, Mar. 11, 1965, 65—3,087
6 Claims. (Cl. 165—9)

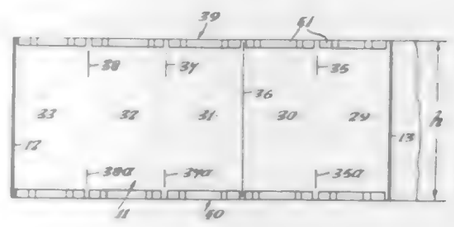


1. A rotary regenerator comprising a rotor having a glass ceramic material of a low coefficient of expansion adapted for the passage of gas therethrough, said ceramic rotor being provided with inlet and outlet passages for the heat exchanging media, a housing spaced from said ceramic rotor and constituted of a glass ceramic material having a coefficient of expansion which is substantially equal to the coefficient of expansion of said ceramic rotor and a seal between said housing and said ceramic rotor being a gap seal.

3,372,736
ROTARY REGENERATIVE HEAT EXCHANGERS

Herbert Brandt, Rothemuhle uber Olpe, 5961 Westphalia, Germany, and Gerhard Kritzler, 25 Fliessenhardtstrasse, 5905 Freudenberg, Kreis Siegen, Westphalia, Germany

Filed Sept. 29, 1965, Ser. No. 491,250
Claims priority, application Germany, Oct. 2, 1964, A 22,510
6 Claims. (Cl. 165—10)

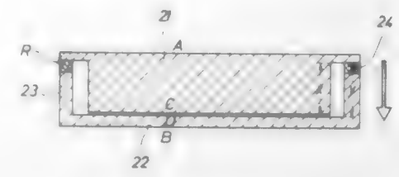


The number of gas-tight joints between the walls and plates in each sector of the regenerator of rotary regenerative heat exchangers is reduced by constructing at least some of the arcuately disposed partitions of smaller axial length than the regenerator. The structure also reduces the total length of sealing edges at the ends of the regenerator.

3,372,737
UNIDIRECTIONAL HEAT TRANSMITTER

Joachim Schnell, Haaren, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 27, 1965, Ser. No. 490,499
Claims priority, application Germany, Oct. 7, 1964, P 35,236
13 Claims. (Cl. 165—32)

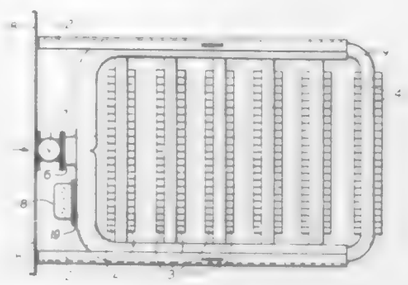


Apparatus for transferring heat between two external surfaces in one direction only. An external surface of a first member is connected to a body having a high heat conductivity and a body having a high coefficient of expansion. An external surface of a second member is similarly connected. Each of the members have confronting internal surfaces. The coefficients of expansion and the positioning of the members are related so that heat is transmitted from the first external surface to the second external surface only.

3,372,738
COOLING ARRANGEMENT FOR OIL-FILLED ELECTRIC TRANSFORMERS OR REACTORS

Wilhelm Jan, Graz, Styria, and Johannes Reitbauer, Weiz, Styria, Austria, assignors to Elin-Union Aktiengesellschaft fur Elektrische Industrie, Vienna, Austria

Filed May 17, 1965, Ser. No. 456,196
Claims priority, application Austria, May 20, 1964, 4,377/64
7 Claims. (Cl. 165—47)

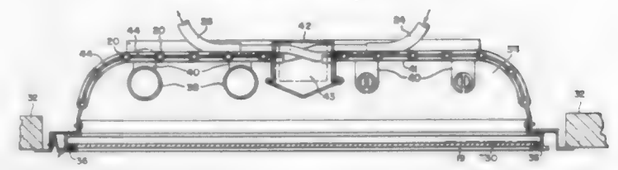


1. A cooling arrangement for dissipating the heat produced by losses in an oil-filled electric transformer or reactor, the latter including an oil tank, the arrangement comprising at least two groups of a plurality of substantially vertical riser sections to and from which the oil to be cooled is supplied from said tank in parallel connection, by way of at least two pairs of substantially horizontal, U-shaped upper distributing and lower collecting header members having each a base of the U and two flanking legs between which said riser sections are connected, upper distributing and lower collecting main header pipes in series communication between said tank and said header members, the latter being connected on opposite sides of said main header pipes, substantially at the middle of their bases, and facing in opposite directions, alternately laterally slanting pipe connections between said header members and at least one of said main header pipes, and means for supporting said header members from the wall of said tank.

3,372,739
LIQUID-COOLED LUMINAIRE

John C. Kastovich, Franklin Township, Delmont, and Jack D. Meess, Franklin Township, Export, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 12, 1966, Ser. No. 520,110
10 Claims. (Cl. 165—47)

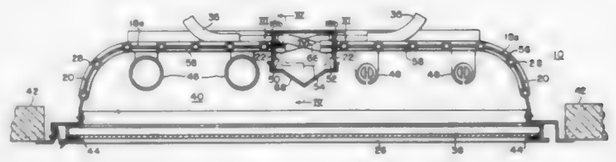


A liquid-cooled luminaire having a troffer body including a top member and downwardly extending side walls which are formed by a plurality of parallel conduits joined at their ends to form a continuous flow path and separated by intervening web portions. The continuous flow path including at one end a liquid inlet and at the other end a liquid outlet which may be connected to a closed heat exchanger and liquid reservoir system. The cooling liquid is maintained in a state of turbulent flow through the parallel conduits and the troffer body is dimensioned in a manner such that the maximum temperature differential between the hottest area of the web portion and the conduits is from about 2° to 4° F.

3,372,740
LIGHTING LUMINAIRE WHICH IS LIQUID COOLED

John C. Kastovich, Franklin Township, Delmont, and Jack D. Meess, Franklin Township, Export, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 12, 1966, Ser. No. 520,121
8 Claims. (Cl. 165—47)



1. A luminaire adapted to be liquid-cooled to remove heat generated by light-sources adapted to be supported therein, said luminaire comprising:

a generally horizontal and elongated housing longitudinally disposed along said luminaire, said housing having spaced longitudinal side walls;

a pair of generally similar cooling members each having a reflecting lower surface, each of said cooling members comprising: a top cover having two longitudinal edges, a depending side wall affixed to one longitudinal edge of said top cover, and a securing flange affixed to the other longitudinal edge of said top cover;

said securing flanges affixed to the longitudinal side walls of said housing with said top covers projecting generally horizontally away from said housing on the opposite sides thereof, and a portion of each longitudinal side wall of said housing extending above said top covers;

end walls affixed to the ends of said cooling members, a bottom light opening defined by said end walls and said depending side walls;

a solid light-transmitting closure member substantially covering said light opening;

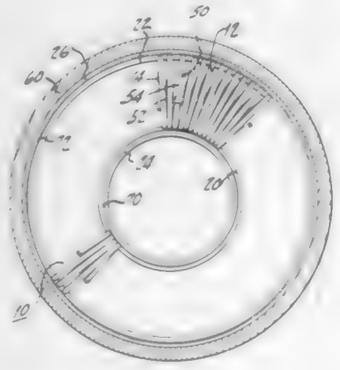
spaced conduit means and interconnecting web members forming substantially all of said top cover and

said depending side wall of each of said cooling members, an inlet conduit extension formed on each of said top covers and extending into said housing through the proximate one of the longitudinal side walls of said housing, said inlet conduit extension having a conduit inlet opening formed therein within said housing for the ingress of cooling liquid into said cooling members, an outlet conduit extension formed on each of said top covers and extending into said housing through the proximate one of the longitudinal side walls of said housing, said outlet conduit extension having a conduit outlet opening formed therein within said housing for the egress of cooling liquid from said cooling members;

a cooling liquid supply conduit means connected within said housing to at least one of said conduit inlet openings, said supply conduit means entering into said housing from the opposite side thereof as the said inlet conduit extension to which said supply conduit means connects; and

a liquid return conduit means connected within said housing to at least one of said conduit outlet openings, said return conduit means entering into said housing from the opposite side thereof as the said outlet conduit extension to which said return conduit means connects, and said supply conduit means and said return conduit means entering into said housing at locations higher than said top cover.

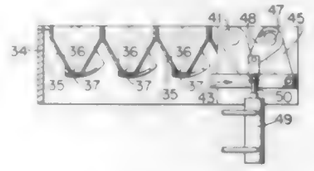
3,372,741
HEAT DISSIPATOR
Donald B. Kaiser and Robert Roth, Lancaster, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Filed Apr. 29, 1966, Ser. No. 546,254
5 Claims. (Cl. 165—80)



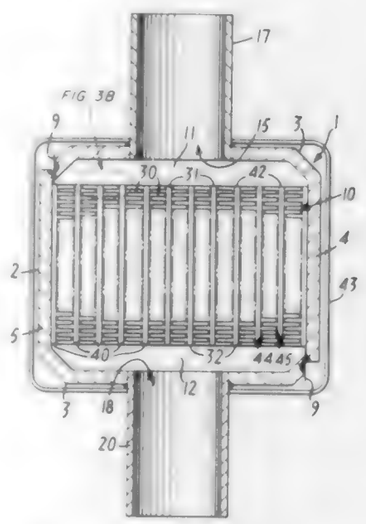
Heat dissipator comprising helices of wire formed into stacked closed loops and confined in an annular space defined by outer and inner concentric metal sleeves. The turns of each helix adjacent to the inner sleeve are in substantially mutual contact relation.

3,372,742
APPARATUS FOR HEAT EXCHANGE OF GRANULAR SOLIDS
James M. Forner, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 8, 1965, Ser. No. 512,367
2 Claims. (Cl. 165—96)

An apparatus for heating or cooling granular material in which a plurality of finned tubes are mounted transversely in a heat transfer chamber. Flow control means are provided at the bottom outlet of the heat transfer chamber to restrict and control flow of granules through the apparatus as desired in order to maintain the heat exchange chamber in full or choked condition. Continuous flow of granules is maintained in order to achieve the desired degree of heat exchange.



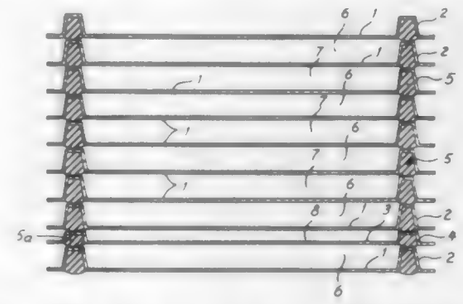
3,372,743
HEAT EXCHANGER
David B. Pall, Roslyn Estates, and Robert I. Gross, Roslyn Heights, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 434,519, Feb. 2, 1965. This application Jan. 25, 1967, Ser. No. 614,521
21 Claims. (Cl. 165—166)



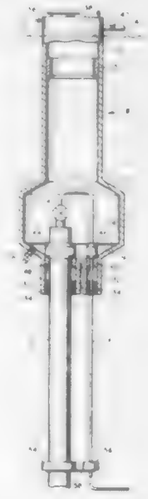
1. A counterflow or parallel flow heat exchanger of the plate type, comprising, in combination, a housing; openings in the houhing for inflow and outflow of fluides between which heat is to be exchanged; a heat exchanger plate formed in a plurality of convolutions arranged in juxtaposed spaced-apart relationship, and having a corrugated surface, the corrugations of said surface being small relative to the convolutions of the plate and being disposed across said convolutions, the heat exchanger plate being disposed in the housing such that the ends of the convolutions define separate flow paths for the fluids between which heat is to be exchanged; and a plurality of separators disposed between the convolutions of the heat exchanger plate, and holding the convolutions in such spaced-apart relationship, the separators, convolutions and corrugations together being shaped to define a plurality of passages which are interconnected at a plurality of points along their length.

3,372,744
PLATE TYPE HEAT EXCHANGER
Malte Anker Skoog, Lund, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden
Filed May 11, 1965, Ser. No. 454,885
Claims priority, application Sweden, June 18, 1964, 7,489/64
2 Claims. (Cl. 165—167)

1. In a heat exchange effected by flowing a first medium in a plurality of first parallel layers and flowing a second medium in a plurality of second layers parallel to and alternating with said first layers, said layers being substantially coextensive in area and each layer being separated from but in heat exchange relation to each adjacent layer over substantially its entire area, and directing the layers of each medium to a separate outlet for such medium, the method of controlling the outlet temperature of said first medium which comprises maintaining said second layers and a plurality of said first layers substantially alike and constant in thickness, and maintaining at least one of said first layers at a substantially different constant thickness, said first layers being directed to flow in parallel to said outlet for the first medium.



3,372,745
SUBMERSIBLE CAISSON FOR SUBSURFACE WELL COMPLETION
Billy G. Holmes, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Apr. 28, 1966, Ser. No. 545,905
8 Claims. (Cl. 166—.5)

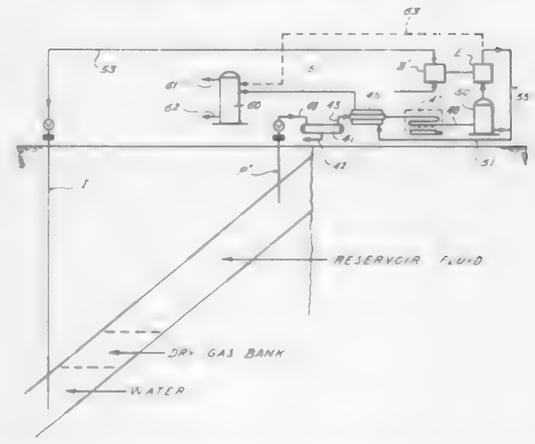


1. A submersible access caisson for providing a breathable atmosphere surrounding a wellhead of a subaqueous well, said wellhead being located beneath the surface of a body of water, and fixed on a conductor pipe protruding a substantial distance above the marine bottom, said access caisson consisting of: an upper tubular section adapted to slide over said conductor pipe and said wellhead; a sealable hatch means in the upper end of said upper tubular section; an enlarged working chamber operatively connected at its upper end to the lower end of said upper tubular section, said enlarged working chamber being adapted to permit a workman to move around said wellhead when said enlarged working chamber surrounds said wellhead; and a sealing means operatively connected to the lower end of said enlarged working chamber, said sealing means being designed to permit sliding movement between said caisson and at least a conductor pipe while maintaining a substantially watertight seal therebetween.

3,372,746
METHOD OF DETERMINING THE EXTENT OF RETURN TO THE SURFACE OF AN OIL WELL TREATMENT FLUID
Wilson I. Sanderson, Dallas, Tex., and Reginald M. Lasater, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Feb. 19, 1965, Ser. No. 434,133
9 Claims. (Cl. 166—4)

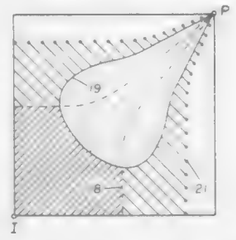
1. A method of determining the extent to which an aqueous oil well treatment fluid has returned to the surface, which comprises, first incorporating a predetermined proportion of a non-absorbed, oil-insoluble indicator into the aqueous oil well treatment fluid, injecting a known amount of the fluid into the well, removing the injected fluid together with any accompanying formation liquids from the well, and determining the proportion of indicator present in the fluid removed.

3,372,747
RESERVOIR PRESSURE MAINTENANCE PROCESS
William M. Reid, 4747 W. Alabama, Houston, Tex. 77027
Filed May 17, 1965, Ser. No. 456,344
2 Claims. (Cl. 166—7)



A method of controlling or maintaining reservoir pressure wherein pressurized gas recovered from the reservoir is expanded to drive a pump to pump water into the reservoir.

3,372,748
POLYMER REDEPOSITION PROCESS FOR WATERFLOOD
Evin L. Cook, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Apr. 14, 1966, Ser. No. 542,610
17 Claims. (Cl. 166—9)

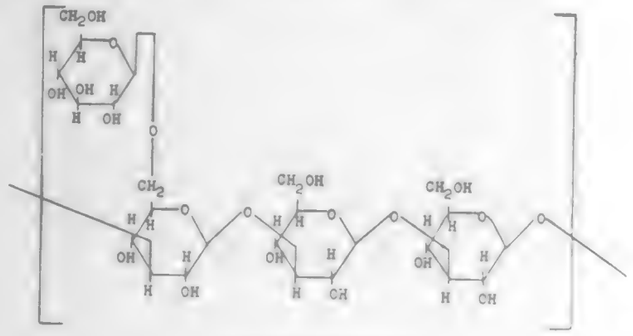


This specification discloses an oil recovery process in which a slug of a dilute aqueous polymer solution is injected into a subterranean oil-containing formation and then followed by a slug of a dilute aqueous caustic solu-

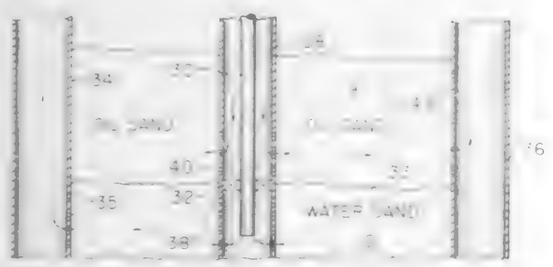
tion. Thereafter, water is injected to drive the polymer and caustic solutions through the formation and oil is recovered from the formation through suitable production means.

3,372,749
WATERFLOOD PROCESS EMPLOYING THICKENED WATER
Sherrod A. Williams, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Apr. 18, 1966, Ser. No. 543,012
15 Claims. (Cl. 166—9)

1. A method of recovering oil from an oil-containing subterranean formation penetrated by an injection means and a production means which comprises injecting through said injection means and into said formation flooding water containing a poly(glucosylglucan), the glucosyl-glucan having the following structural formula:

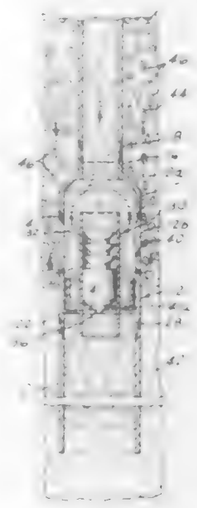


3,372,750
RECOVERY OF HEAVY OIL BY STEAM INJECTION
Abdus Satter and Lloyd E. Elkins, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Nov. 19, 1965, Ser. No. 508,791
5 Claims. (Cl. 166—11)

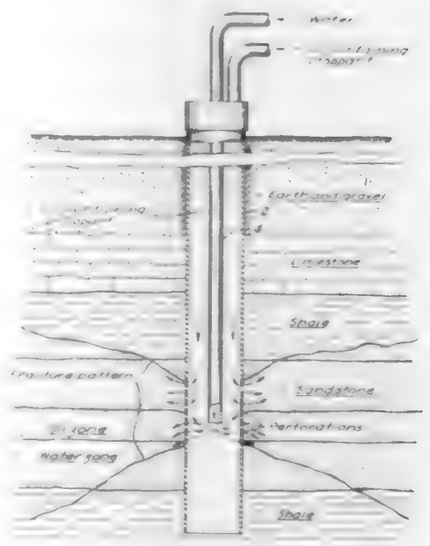


Steam is injected into an aquifer underlying a heavy oil reservoir to heat the reservoir and increase production, primarily by decreasing viscosity. A single steam injection-oil production well may be used along with a number of surrounding water-producing wells, or there may be a well-to-well displacement with one steam injection well, a set of surrounding water-producing wells, and another set of surrounding oil-producing wells, the two sets being respectively at the corners of the five-spot and at the mid-point of the border lines.

3,372,751
WELL CEMENTING METHOD
Augustin Louis Canut, 3947 Marshall Way, Long Beach, Calif. 90807
Filed Aug. 16, 1965, Ser. No. 479,790
1 Claim. (Cl. 166—27)

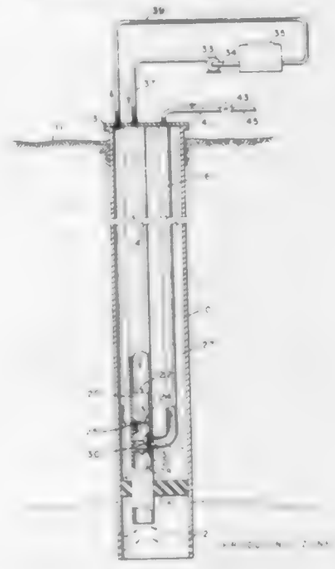
A method of cementing casing within the annulus of a portion of a well bore by first lowering the casing at the bottom of a pipe string. Cement is then forced down the pipe string and casing until it rises upwardly within the annulus above the casing. Openings are then unblocked between the lower portion of the pipe string and the annulus above the casing while flow through the pipe string below the openings is blocked. Liquid is

pumped under pressure through the pipe string and out the openings to break-up the unhardened cement and lift it to the surface. Finally, the upper end of the casing is disconnected from the pipe string below the point where it was blocked and the pipe string is lifted to the surface leaving the well bore unobstructed.

3,372,752
HYDRAULIC FRACTURING
Ronald R. Prater, Great Bend, Kans., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 22, 1966, Ser. No. 544,570
7 Claims. (Cl. 166—42)



A method of fracturing a well employing at least two piping systems or injection means which provide independent injection of different fluids simultaneously down the wellbore penetrating a formation being treated. Down one of such means is injected a fluid of a density which corresponds closely to that of the fluid in the formation desired to be produced and carries suspended therein a propping agent of about the same density as that of the fluid and down each of said other injection means is injected a fluid of a density which is either greater or less than that of the fluid sought to be produced and which contains substantially no propping agent in suspension.

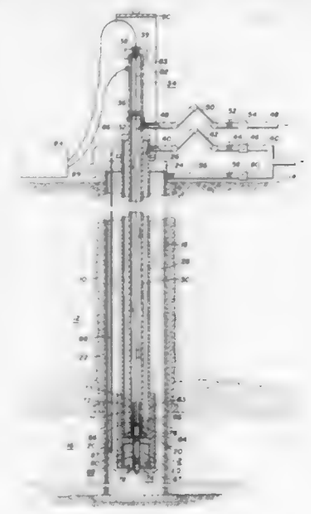
3,372,753
METHOD OF PREVENTING HYDRATE FORMATION IN PETROLEUM WELL PRODUCTION STRINGS
Robert N. Tuttle, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,598
3 Claims. (Cl. 166—45)



The formation of hydrates and deposition of solids in a production tubing string carrying petroleum well fluids having a high hydrogen sulfide, dissolved sulfur and water content may be prevented by maintaining the fluid pressure within the production tubing throughout the length thereof above the bubble point of said well fluids.

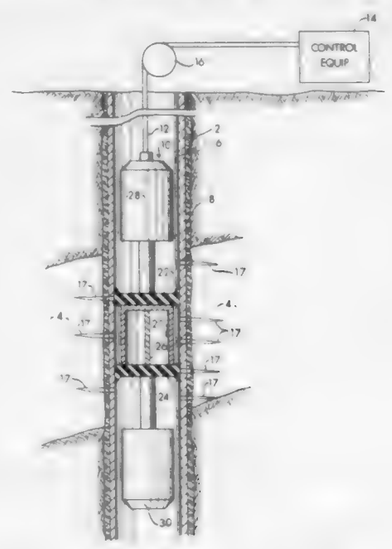
3,372,754
WELL ASSEMBLY FOR HEATING A SUBTERRANEAN FORMATION
Everette E. McDonald, Eagle Pass, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed May 31, 1966, Ser. No. 554,078
8 Claims. (Cl. 166—59)

1. A well assembly for effecting heating over portions of a subterranean formation penetrated by a well comprising:
(a) a casing within said well extending substantially the entire length of said well from a point in the vicinity of the surface of the earth to within the vicinity of said formation and communicating with said formation,
(b) cementing means bonding said casing to the wall of said well, allowing communication between the interior of said casing and said formation but preventing communication between said interior of said casing and other formations,
(c) a casinghead attached to said casing at the upper end thereof,
(d) an aperture having sealing means in said casinghead,
(e) a primary air conduit slidably positioned within said sealing means and said aperture in said casinghead,
(f) a fuel string concentrically located within said primary air conduit and extending substantially the entire length thereof,
(g) means preventing leakage of air from the upper end of said primary air conduit,
(h) means preventing leakage of fuel gas from the upper end of said fuel string,
(i) means for supplying primary air to said primary air conduit,
(j) means for supplying fuel gas to said fuel string,
(k) means for supplying secondary air to said casing,
(l) a heat shield positioned on said primary air conduit at the bottom thereof adjacent said formation,



(m) means for mixing said primary air and said fuel gas to form a combustible mixture only after reaching the vicinity of said heat shield,
(n) an electrical igniter located within said heat shield and positioned for flow thereover of fuel gas from said fuel string and of air from said primary air conduit, and
(o) electrical conductor means extending from the surface of the earth through said fuel string to provide electrical energy to said electrical igniter.

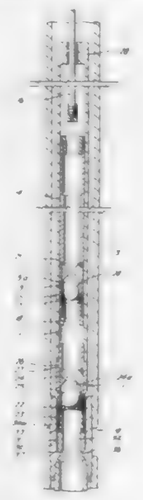
3,372,755
APPARATUS FOR WELL FLOW STIMULATION
Alexis A. Venghiattis, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed June 29, 1965, Ser. No. 467,942
7 Claims. (Cl. 166—63)



This apparatus for improving the flow of fluid from an earth formation tapped by a perforated cased borehole includes a chamber defining an air space. One end of the

chamber is closed, and the other end of the chamber is sealed with a detachable closure member. A propelling charge is provided for moving the two plugs in opposite directions for developing an implosion zone to open plugged perforations in the borehole.

3,372,756
HOLDDOWN FOR WELL TOOLS
Louis K. Muckleroy, Longview, Tex., assignor to U.S. Industries, Inc., a corporation of New York
Filed Apr. 21, 1966, Ser. No. 544,204
4 Claims. (Cl. 166—206)



1. A holddown for well tools comprising, a seating nipple having a longitudinal bore with a section thereof having a uniform diameter throughout its length, a hollow holddown body for connecting to a well tool for insertion into the bore of the seating nipple, means limiting the distance the holddown body can be inserted into the seating nipple bore, a friction ring comprising a continuous annular body of resilient material encircling a section of the holddown body, said ring having a length longer than its wall thickness with a flat outer surface to engage said section of uniform diameter of the bore of the seating nipple, said ring having an outside diameter greater than the diameter of said section and made of a material having non-galling compatibility with the material of the seating nipple and sufficient ductility and yield strength to be compressed into said section of the seating nipple without suffering permanent deformation whereby said ring is radially compressed in the bore of the seating nipple to form a metal-to-metal fluid tight seal between the ring and the bore of the seating nipple and create a frictional force therebetween, said section of the holddown body upon which the ring is located having a diameter sufficiently less than the inside diameter of the ring to allow the desired compression thereof, means holding the ring on the body for limited longitudinal movement relative to the body, and a seal ring positioned between the friction ring and the body to provide a seal therebetween when the ring is compressed by the bore of the seating nipple whereby said seal ring and the metal-to-metal seal between the friction ring and the seating nipple combine to provide a fluid seal between the seating nipple and the body.

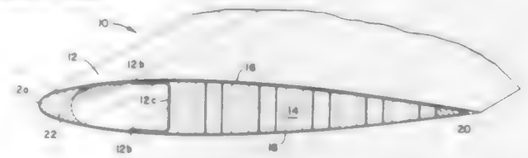
3,372,757
ROTOR BLADE AND METHOD OF FABRICATING THE SAME
Kenneth Krohncke, 919 S. 7th St., San Jose, Calif. 95112
Filed July 13, 1965, Ser. No. 471,545
1 Claim. (Cl. 170—159)

1. The method of fabricating a rotor blade which comprises the steps of:

squeezing an initially circular tube into a flattened generally elliptical cross section,

supporting the elliptical tube in a mold having surfaces corresponding to a desired bullet-shaped configuration of the rotor blade spar,

exploding interiorly of the tube to expand the same into contact with the mold to form the spar of the blade, and

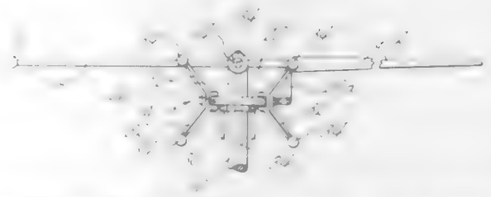


attaching rearwardly converging skins to the spar to form the trailing edge of the blade,

the ends of the elliptical tube being open and the tube being supported under water during the explosion step,

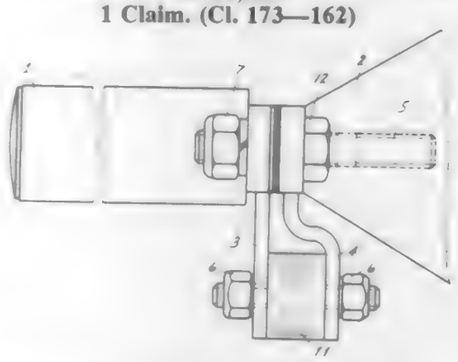
and finally securing a tapered balance weight to the wall surfaces of the formed spar.

3,372,758
VIBRATION ABSORBER
David S. Jenney, Stratford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 15, 1967, Ser. No. 616,308
8 Claims. (Cl. 170—159)



A centrifugally tuned vibration absorbing apparatus is provided for a helicopter rotor having pendulum type absorber weights mounted to rotate with the rotor. The absorber weights are mounted for pendulous movement about coincident vertical and horizontal axes and are tuned to absorb both vertical and horizontal vibrations.

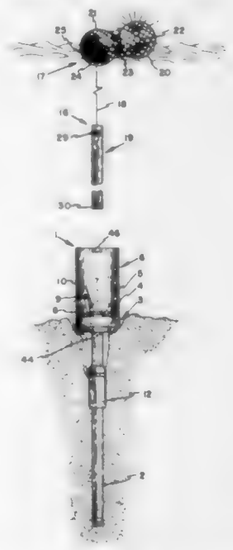
3,372,759
MEANS FOR SUPPRESSING BLOWS, SHOCKS OR VIBRATIONS IN THE OPERATION OF AN APPARATUS SUCH AS A POWER DRIVEN HAMMER OR TAMPER
Philipp Uebel, Munich, Germany, assignor to Hermann Wacker and Peter Wacker, Munich, Germany
Filed Oct. 21, 1965, Ser. No. 499,940
Claims priority, application Germany, Oct. 28, 1964, W 37,859
1 Claim. (Cl. 173—162)



Shock suppressing means for manually guided power driven hammers or tampers having a housing and a handle, where the handle is disposed at the center of

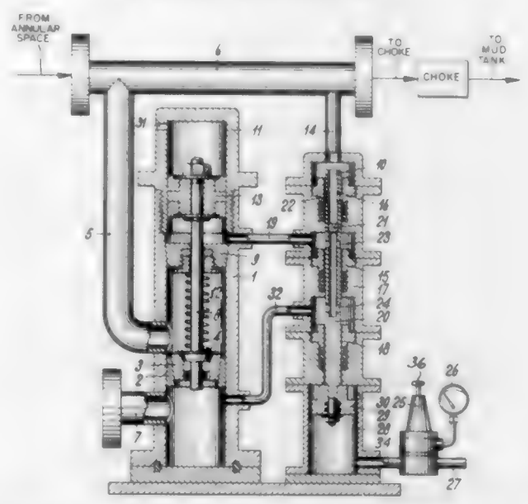
gravity at the end of one of two angular levers which are connected with one another at the other end by an oscillating element or shock mount.

3,372,760
FREE-FALL CORE SAMPLER
Samuel O. Raymond, North Falmouth, and Peter L. Sachs, Reading, Mass., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 30, 1965, Ser. No. 444,094
13 Claims. (Cl. 175—5)



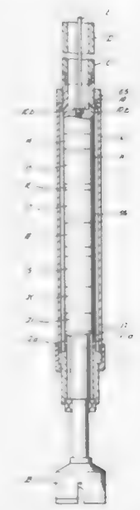
The free-fall corer apparatus of the present invention consists of an expendable, elongated casing having an annular-shaped ballast member secured thereto. A cylindrical housing surmounts this ballast member and accommodates a float which is tied to the core liner. During descent of the apparatus, the float is latched to the ballast element, but when the apparatus strikes bottom, a pilot weight suspended from the float latching means moves upwardly and allows the float to freely ascend within the ocean. This ascent unlatches the core liner from the expendable casing and the former is thereafter raised to the surface.

3,372,761
MAXIMUM ALLOWABLE BACK PRESSURE CONTROLLER FOR A DRILLED HOLE
Adrianus Wilhelmus van Gils, Seria, Brunei
Filed June 30, 1965, Ser. No. 468,475
8 Claims. (Cl. 175—25)



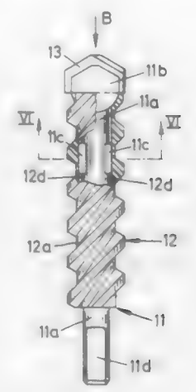
This invention relates to a relief device to be used with a well and drill pipe where there is a mud return pipe communicating with the annular space around the drill pipe with a choke in the pipe. The pipe has a relief port between the well and the choke and a relief valve controls the port by being responsive to the pressure of the mud in the mud return pipe.

3,372,762
DRILLING APPARATUS LOCKING ASSEMBLY
Roy H. Cullen, Charles H. Elliott, and Jimmie R. Aker, Houston, Tex., assignors, by direct and mesne assignments, to The Youngstown Sheet and Tube Company, a corporation of Ohio
Filed Apr. 26, 1965, Ser. No. 450,889
8 Claims. (Cl. 175—104)



Drilling apparatus wherein a housing having a plurality of rotatably releasable housing sections is surrounded by a locking sleeve having means for locking to the upper and lower ends of the housing to thereby prevent relative rotation and inadvertent release of the housing sections. In one form, the apparatus has means for placing the outer sleeve under compression and the housing under tension.

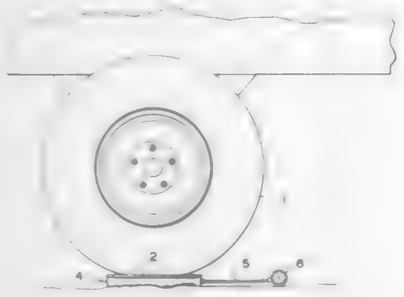
3,372,763
DRILL
Artur Fischer, 133 Grunmettstetterstr., 7241 Tumlingen, Germany
Filed June 14, 1966, Ser. No. 558,211
Claims priority, application Germany, June 14, 1965, F 46,325
10 Claims. (Cl. 175—323)



1. A drill, comprising a shank having a front end portion and a rear end portion; a drill bit carried by said front end portion; and an elongated jacket of synthetic plastic material extending between said front end portion

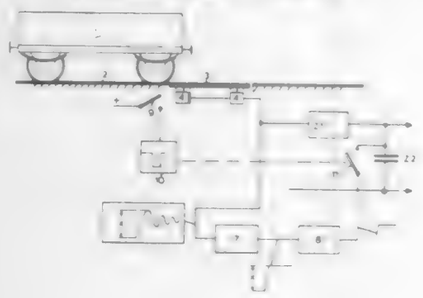
and said rear end portion, said jacket having an external face provided with at least one groove extending over the entire length of said jacket so that comminuted material resulting from drilling of a bore hole with said drill can escape from such bore hole along said groove.

3,372,764
HYDRAULIC LOAD SCALE
Howard D. Crotts, Cuyahoga Falls, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Dec. 16, 1966, Ser. No. 602,229
6 Claims. (Cl. 177—208)



A portable hydraulic load scale for placement directly on irregular ground surfaces, and adapted to indicate the weight of very heavy loads placed upon its top-plate. The scale has a flexible non-extensible bladder filled with a liquid, a top-plate, and a pressure gauge.

3,372,765
APPARATUS FOR WEIGHING VEHICLES IN MOTION
John Samuel Hatton, 28 Ebrington, West Bromwich, Staffordshire, Eng'and
Filed Nov. 9, 1965, Ser. No. 507,017
Claims priority, application Great Britain, Nov. 21, 1964, 47,486/64
8 Claims. (Cl. 177—211)



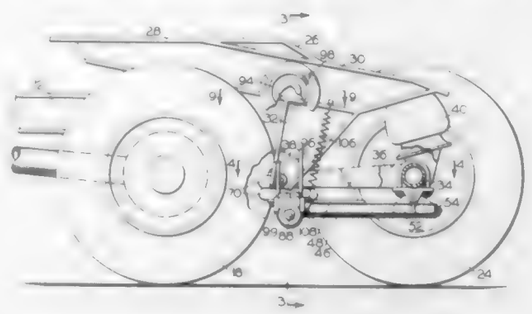
Apparatus for weighing vehicles in motion comprises an electrical transducer responsive to dynamic weight of a vehicle, and preferably including at least one strain gauge bridge responsive to weight imposed on a railtrack section, an inductance-capacitance filter connected to the output of the transducer, circuit means responsive to the peak value of the output of the transducer to effect rapid charging of a capacitance element of the filter circuit to a voltage proportional to the peak value, and switching means operative both to connect said circuit means between the transducer output and the filter circuit to receive the peak value of the transducer output, and to break this connection substantially immediately following receipt of the peak value. The switching means is preferably a switch actuated by the moving vehicle and it further comprises a single pulse generator controlled by the switch to give a pulse whose commencement and cessation respectively initiate and terminate rapid charging of the condenser from said circuit means. The circuit means preferably includes a variable attenuator to provide adjustment of the proportionality of the rapid charging voltage to the peak response. A time delay circuit is operative to switch the capacitance from the transducer output to a voltage responsive indicator and/or recorder.

3,372,766
COMBINATION TRACTIVELY AND THRUST PROPELLED VEHICLE FOR OFF-HIGHWAY AND ON-HIGHWAY USE AND TRACTIVE RUNNING GEAR THEREFOR
Henry R. Lifferth, Fortine, Mont., assignor to Lifferth International Corporation, Fortine, Mont., a corporation of Utah
Continuation-in-part of application Ser. No. 356,549, Apr. 1, 1964. This application May 23, 1966, Ser. No. 551,970
25 Claims. (Cl. 180—7)

An off-highway vehicle, employing both tractive and thrust propulsion for traveling over soft and slippery terrain ash well as on surfaced highways, comprises a series of cam members mounted as propulsive running gear on respective eccentric axes of rotation extending transversely of the direction of travel. The axes may be longitudinally aligned, so the cam members form one or more series extending transversely across the vehicle, with the cam members of each series being arranged side-by-side on a common axis and with the several series being arranged in succession longitudinally of the vehicle, or the axes themselves may be arranged in succession longitudinally of the vehicle, so the cam members are arranged in series longitudinally of the vehicle. The individual cam members are each formed to have a protrusive portion at one side of the mounting axis and a recessive portion at the opposite side. The protrusive portions of the several cam members have arcuate tractive surfaces at substantially equal distances along a radius from the respective axes, and the cam members are so arranged that a plurality of the tractive surfaces are bottomed at all times for vehicle support and tractive propulsion. By making the center of arc of each cam member coincident with the axis of rotation, the vehicle will ride smoothly on hard-surfaced roads. The cam members may be ordinary wheels with offset axes, but are preferably eccentric off-circular wheels having rims mounting eccentric off-circular annular pneumatic tires.

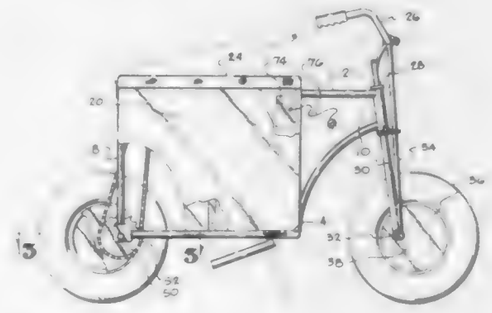
3,372,767
FRICTION MEANS FOR CONNECTING DRIVE AND SECONDARY WHEELS OF VEHICLES
Larry D. Keegan, Rte. 2, Box 66, Clackamas, Oreg. 97015
Filed May 31, 1966, Ser. No. 554,000
8 Claims. (Cl. 180—22)

The invention includes friction wheels adapted to be engaged between a pair of vehicle wheels for transferring driving power from one of the wheels in the pair to the other. To accomplish such purpose, a supporting arm supports one friction wheel in edge alignment with a pair of the vehicle wheels and also supports air bags which



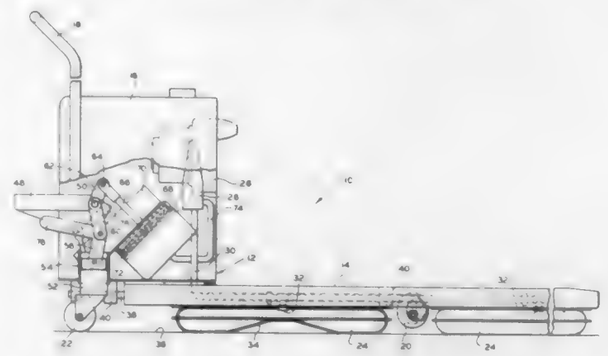
when inflated bear against the vehicle frame and force the support arm down to engage the friction wheels with the vehicle wheels.

3,372,768
BUCKING CYCLE
Richard C. Wresch, San Bernardino, Calif. (Box 842, Loma Linda, Calif. 92354)
Filed Oct. 24, 1965, Ser. No. 504,387
1 Claim. (Cl. 180—34)



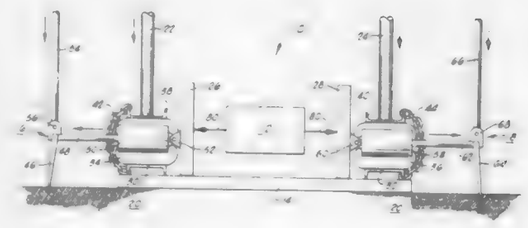
Motor-driven cycle with eccentric wheels and particularly a type that is compact in arrangement but still simulates the bucking antics of a broncho so close to the ground as to be safe.

3,372,769
MATERIAL HANDLING VEHICLE
Richard R. Jung, Robert R. Rabbitt, and Johnny T. Watters, Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Apr. 29, 1966, Ser. No. 546,395
3 Claims. (Cl. 180—119)



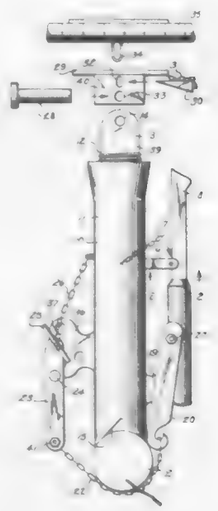
A material handling machine having at least one fluid inflatable load supporting and friction reducing pad connected thereto, a first retractable wheel and a pair of retractable wheels. Toggle linkage is connected to the first wheel and is operable to extend the first wheel. Other toggle linkage is connected to the pair of wheels and is operable to extend the pair of wheels. A lost motion connection is provided between the linkages so that extension of the first wheel also causes extension of the pair of wheels, but the pair of wheels can be extended without extending the first wheel. A fluid actuator is connected to the source of pressurized fluid for the pad and also connected to the linkage for the pair of wheels so that whenever the pad is inflated the actuator is energized to cause the pair of wheels to extend.

3,372,770
SHEAR WAVE TRANSDUCING APPARATUS
Frank Clynch, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Jan. 21, 1966, Ser. No. 522,099
14 Claims. (Cl. 181—.5)



A shear wave vibrator coupled to the surface of the earth by applying weight to a base plate and further coupled by earth engaging members attached to the base plate and hydraulically depressing into the ground.

3,372,771
SCAFFOLD HOLDER
Joseph Capozzi, 129 Montvale Road, and Antonio Gatta, 12 Poole St., both of Woburn, Mass. 01801
Filed June 20, 1966, Ser. No. 558,856
4 Claims. (Cl. 182—229)



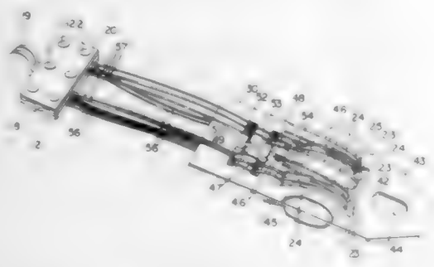
A scaffold holder comprising a cylindrical housing having a threaded hollow opening therein, an adjustable support having a threaded portion on one end thereof and being adapted to longitudinally travel within the housing,

means on the other end of the housing for securing the housing to a column of a scaffold, a holder insert adapted to be mounted in the wall of a structure and provided with means for attaching same to the adjustable threaded support member.

3,372,772
SAFETY GUARD
Murray Singer, 307 Hickory St., Massapequa, N.Y. 11762
Filed May 9, 1966, Ser. No. 548,489
1 Claim. (Cl. 182—230)

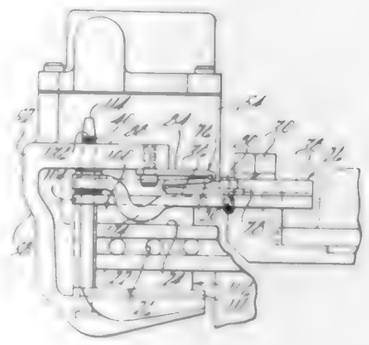
This invention relates to a self-locking guard for a swimming pool ladder wherein the self-locking feature is a spring loaded tongue adapted to engage the underside of a swimming pool ladder step.

3,372,773
LOAD LIMITER DEVICE
Albert Russo, Drexel Hill, and Robert H. Greeley, Kennett Square, Pa., assignors to All American Engineering Company, Wilmington, Del., a corporation of Delaware
Filed July 29, 1966, Ser. No. 568,906
14 Claims. (Cl. 188—1)



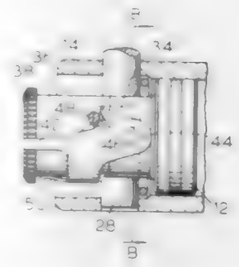
A plurality of wire strands are looped in and out of longitudinal apertures in a platen. One connector is attached to the strands and another to the platen. These connections provide means for connecting the device between a load and a support to cause the force required to pull the looped strands through the apertures to limit the dynamic force that can be applied to the load. The strands may be prebent and inserted into the apertures through a longitudinal slot. A bar is inserted into the slot to lock the strands into the apertures. The strands may be looped around a curved guide upon the platen to provide a substantial length and working stroke in a compact form. The ends of the strands remote from their connection may be substantially free of projection to cause them to freely pass through the apertures to positively limit the load transmitted through the device.

3,372,774
FLEXIBLE SUPPORT MEANS FOR A BRAKE CALIPER
Harvey C. Swift, Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,794
15 Claims. (Cl. 188—73)



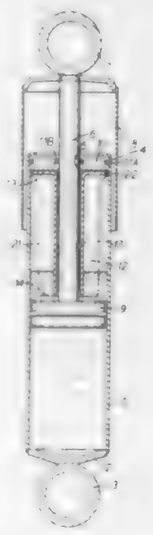
This invention relates to a disk brake and mort particularly to a disk brake having novel means for supporting a slidable caliper upon a stationary torque plate. This invention relates generally to a disk brake of the sliding caliper type in which a caliper having a fluid motor portion and a reaction portion is mounted on a stationary torque plate by yieldable means in the form of flex straps. A piston is mounted in the fluid motor portion of the caliper for moving a brake shoe having a brake lining thereon into engagement with a braking face of a rotary disk that is attached to a wheel to be braked. When this happens, the reaction portion of the caliper moves the other brake shoe so that the lining positioned thereon moves into engagement with the other face of the disk to be braked. Relative movement between a stationary torque plate and the caliper in a direction perpendicular to the plane of rotation of the disk is permitted by the use of the flex straps that not only permit such movement but also support the caliper upon the stationary torque plate.

3,372,775
DISC BRAKES
Hans Albert Beller, Koblenz-Asterstein, and Heinrich Bernhard Rath, Koblenz-Luetzel, Germany, assignors to Girling Limited, Birmingham, England, a British company
Filed July 20, 1966, Ser. No. 566,632
Claims priority, application Great Britain, July 30, 1965, 32,601/65
5 Claims. (Cl. 188—73)



A caliper type disc brake which includes an automatic adjuster for compensating for wear of the frictional elements of the brake wherein the automatic adjuster comprises an axially extendible member whose length is altered by relative rotation of two constituent members brought about by a ratchet and pawl mechanism, the pawl member of which is generally U-shaped to straddle the forward end of a hydraulic piston and includes a resilient biasing finger which serves to retain the pawl in an operative position.

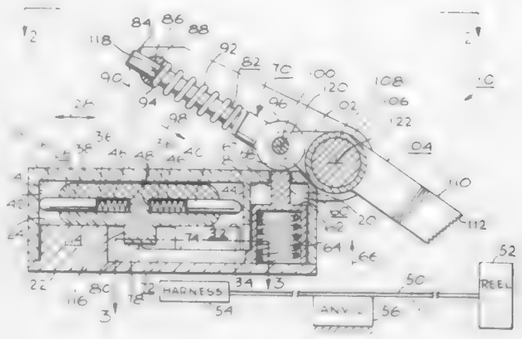
3,372,776
LUBRICATING MEANS FOR PISTON ROD SEAL
David Alan Avner and Douglas Bryan Wilkins, Tyseley, Birmingham, England, assignors to Girling Limited
Filed Mar. 2, 1966, Ser. No. 531,154
Claims priority, application Great Britain, Mar. 2, 1965, 8,859/65
5 Claims. (Cl. 188—100)



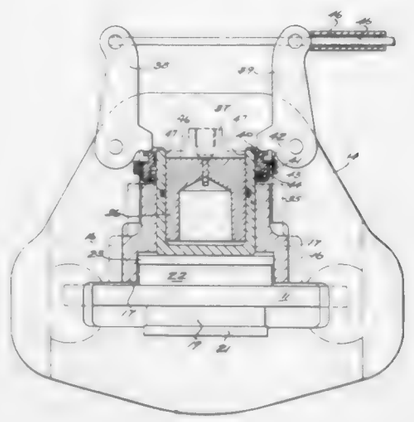
The invention is concerned with the lubrication of a piston rod seal in a telescopic damper in which the working space within a cylinder contains both damper fluid and gas under pressure, and the piston rod extends through the end of the cylinder which is normally uppermost in use, so that the cushion of pressurized gas is disposed adjacent the piston rod seal. This is achieved by the provision of means defining a passage which extends from below the general level of damper fluid, upwardly to the vicinity of the piston rod seal, the passage being of such narrow dimensions that damper fluid can rise upwardly in the passage and remain therein due to a form of capillary action. In the specific embodiments, this is achieved by the provision of a tubular body which in one case, is closely spaced from the piston rod itself leaving a narrow clearance which forms the passage, and in the other embodiment the tubular body is closely spaced from the internal surface of the cylinder. In each case, a transverse flange at the upper end of the body is narrowly spaced from a piston rod guide to provide a horizontal portion of the said passage.

3,372,777
INERTIA-OPERATED STRAP LOCK
Ernest A. Filippi, Northbridge, and Donald H. Herbert, Rolling Hills Estates, Calif.; said Filippi assignor to Special Devices, Inc., a corporation of California
Filed Mar. 28, 1966, Ser. No. 549,737
(Filed under Rule 47(a) and 35 U.S.C. 116)
9 Claims. (Cl. 188—136)

There is disclosed herein a strap locking arrangement that automatically locks a strap or belt upon subjection to certain forces acting in pre-selected directions, when the forces have at least a predetermined magnitude. This is achieved by having a normally restrained belt snubbing means rotatably mounted on a housing and the belt snubbing means includes an over-centered spring actuated shaft in which an over-centered compression spring exerts a force to restrain the belt snubbing means in a normally restrained or open position. The belt snubbing means is movable from the normally restrained position through the center position, which is the position of maximum force, to a belt locking position by an actuator means. An inertia mass means is slidably mounted adjacent to the actuator means and, when the inertia mass means is subjected to the pre-selected forces there is relative movement between the inertia mass means and the actuator means so that the inertia mass means slides free of the actuator means to allow movement of the actuator means under the influence of a spring. The movement of the actuator means by the spring moves the belt snubbing means from the restrained position through the center position and into the belt locking position when the inertia mass means has been subjected to the pre-selected forces.

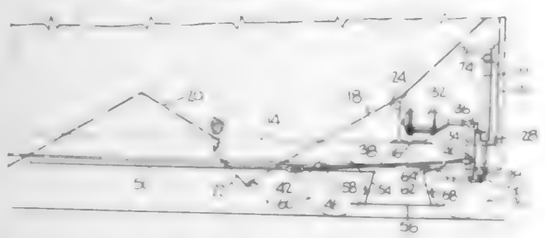


3,372,778
ACTUATING MEANS FOR SPOT-TYPE DISC BRAKES
Stewart K. Hambling, Tamworth, England, assignor to Girling Limited, Tyseley, England, a British company
Filed Apr. 13, 1966, Ser. No. 542,356
Claims priority, application Great Britain, Apr. 13, 1965, 15,592/65
7 Claims. (Cl. 188—152)



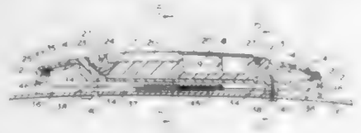
In a disc brake of the sliding yoke reaction type provided with an hydraulic actuator, the actuator comprises a hollow piston working in a bore in a stationary member and a second piston working in the first piston, one piston applies one friction pad directly to the disc and the other piston acts on the yoke to move it axially and bring a second friction pad carried by the one into engagement with the opposite face of the disc when fluid under pressure is supplied by the pistons.

3,372,779
BRAKE REGULATOR INSTALLATION
Charles F. Roselius, Bethpage, N.Y., and George A. Pelikan, Closter, N.J., assignors, by mesne assignments, to Robert M. Holloway and Robert L. Ludington, Michigan City, Ind.
Filed Aug. 31, 1966, Ser. No. 576,336
31 Claims. (Cl. 188—198)



A braking system for a railway car including a brake cylinder which is mounted on a railway car frame adjacent one end of the car, a double acting automatic brake regulator disposed adjacent thereto and connected therewith, triggering means for the regulator, and brake rigging for applying brake shoes to the wheels of the railway car.

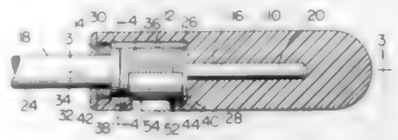
3,372,780
LUGGAGE HANDLE ASSEMBLY
Robert K. Fujioka, Los Angeles, and Tim M. Uyeda, South San Gabriel, Calif., assignors to Samsonite Corporation, Denver, Colo., a corporation of Colorado
Filed Aug. 22, 1966, Ser. No. 574,206
11 Claims. (Cl. 190—57)



1. In a handle assembly for a luggage case and the like, having a handle and a base:
means at each end of the handle movably connecting the end of the handle with the base and permitting at least the central portion of the handle to be lifted above the base for gripping and also permitting the handle to be lowered upon the base to a retracted position, at least a portion of each said means moving outwardly from the central portion of the base whenever the handle is lowered upon the base;
a pair of overlapping members, each connected at its outer end to said movable portion of one of said connecting means and extending past the inner end of the other member; and
resilient means extending between said inner ends of said members for moving said members outwardly and thereby urging said handle to said retracted position.

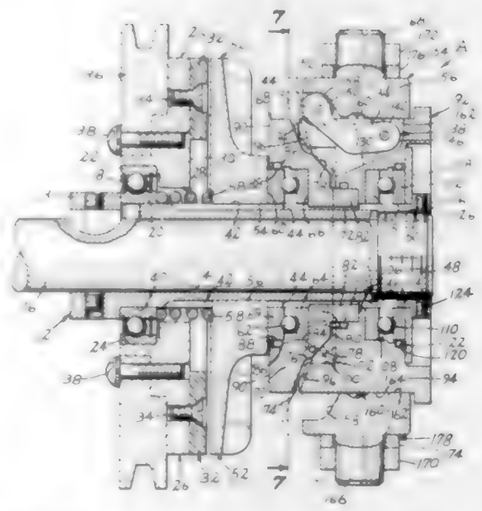
3,372,781
REVERSIBLE FRICTION DRIVE DEVICE
Robert T. Fulton, deceased, late of Logansport, Ind., by Alberta M. Fulton, executor, Logansport, Ind., assignor of one-third to Standard Fiscal, Inc., and one-third to Carolyn S. Fulton, Logansport, Ind.
Filed Jan. 6, 1966, Ser. No. 519,180
8 Claims. (Cl. 192—43)

A reversible friction drive device having a support and a drive member mounted for rotation therein. A helical spring is positioned between the support and the drive member, and is coaxial of the drive member. The spring is slidable with respect to both the support and the drive member. The support and the spring have detent means thereon adjacent to the opposite ends of the spring for urging the spring into frictional engagement with the drive member upon rotational movement therebetween. The spring fits the drive member in a manner such that when one end of the spring is held against relative rotational movement with respect to the support, the spring holds the drive member against rotation in one direction



but permits rotation in the other direction. The support has reversing means mounted thereon for selectively holding the opposite ends of the spring against movement therebetween whereby the direction in which the spring holds the drive member against rotation relative to the support can be selected as desired.

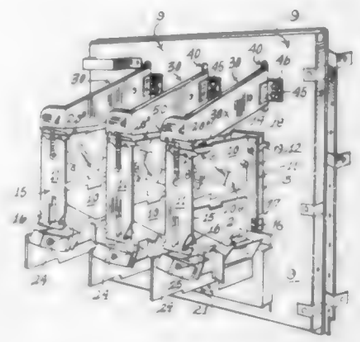
3,372,782
CLUTCH WITH NON-ROTATABLE CAM ACTUATOR
Paul J. Nieland, South St. Paul, Minn., assignor to Horton Manufacturing Co., Inc., Minneapolis, Minn.
Filed Jan. 3, 1966, Ser. No. 518,455
1 Claim. (Cl. 192—93)



This disclosure relates to a mechanical clutch which includes a hub mountable on a shaft with an annular driving member rotatably mounted on the hub together with a friction disc member slidably mounted on the hub. Further included is a pressure ring slidable axially on the hub for pressure engagement with the friction member together with an annular carrier member carried by the hub which mounts a plurality of pivoted spaced finger pressure members for pressure engagement with the pressure ring, and a cam ring carried by the carrier member and slidable thereon for pressing the finger members which move the pressure ring to move the friction member into engagement with the driving member to cause rotation of a shaft secured to the hub.

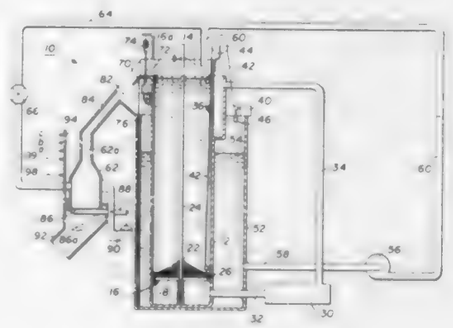
3,372,783
COIN CHUTE STRUCTURE
Terrence A. Reedy, Jr., Skokie, Ill., assignor to Lion Manufacturing Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 26, 1966, Ser. No. 575,404
11 Claims. (Cl. 194—1)

The coin drop or guide comprises assembled plates of a particular configuration defining a coin passage having an exit to overlie the coin entrance to a removable type of coin testing chute, with formations adjacent such exit for separable interfit with a part of the testing chute



whereby to stabilize the coin drop or guide and maintain the exit thereof in alignment with the coin entrance while permitting ready removal of the testing chute.

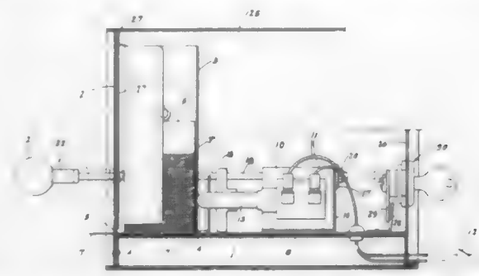
3,372,784
MINNOW VENDING METHOD AND MACHINE
Billy H. Ross, Corsicana, and Jerry D. McMahon, Tennessee Colony, Tex., assignors of one-half to said Ross and one-half to said McMahon, Tennessee Colony, Tex.
Filed Dec. 2, 1965, Ser. No. 511,029
19 Claims. (Cl. 194—2)



A machine for vending a predetermined quantity of minnows from a bulk container having a primary receptacle for the minnows and having a restricted outlet. The minnows are concentrated adjacent the outlet and additional water supplied to the primary receptacle from a secondary receptacle to cause the water to overflow through the outlet and carry the minnows, essentially one at a time, through the outlet. The quantity of minnows passing through the outlet is measured, either by counting or by volume, and passed into a delivery receptacle which also contains a predetermined measure of water. After the predetermined quantity of minnows has passed into the delivery container, the measured quantity of minnows plus the measured quantity of water are delivered to the customer.

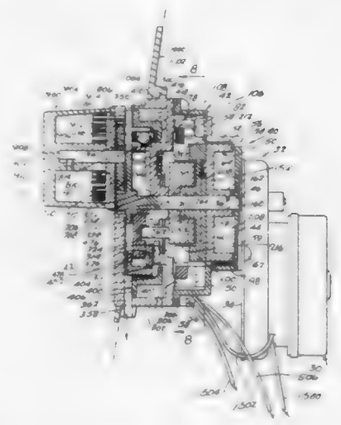
3,372,785
COIN SWITCH CONTROLLED TICKET DISPENSER
Norman L. Bei, 156 Hagemann Ave., Santa Cruz, Calif. 95060, and T. J. Scott, 537 Cathedral Drive, Aptos, Calif. 95003
Filed Oct. 10, 1966, Ser. No. 585,378
8 Claims. (Cl. 194—10)

A ticket dispenser embodying a magazine for a stack of tickets, and a manually operated slide arranged to dispense the tickets one at a time from the bottom of the



stack; a coin-controlled electrical device being employed to reset such slide.

3,372,786
COIN-CONTROLLED APPARATUS WITH CONCENTRIC, COIN-CONNECTED, TURNING PARTS
Jiri J. Hovorka, Miami, Fla., assignor to U.S. Coin Controls, Inc., Miami, Fla., a corporation of Florida
Filed Mar. 9, 1966, Ser. No. 532,982
24 Claims. (Cl. 194—84)

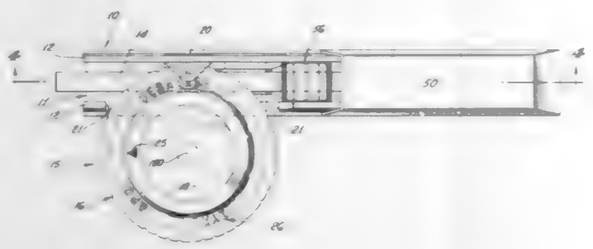


Coin-control apparatus for accepting one coin or a plurality of coins of the same aggregate value as said one coin in which one or more rotors propel one or more coins around the periphery of a stator; radially movable locking means carried by the stator and one or more peripherally spaced means carried by the rotor whereby to disable the locking means of the stator if the coin (or such plurality of coins) subtend an arc on said stator within predetermined tolerances for acceptance of the coins, or for rejection of the coins if such tolerances be not met. Rejection of such coins is accomplished by the reversal of the rotor to expel the coins through the same channel by which they entered. Said mechanism optionally includes means preventing rejection of any of the coins once they have been found acceptable. In short, once the coins are found to be acceptable, the operation *must* be completed and the coins delivered to their proper depository.

3,372,787
TAPE EMBOSSING APPARATUS WITH TAPE VISIBLE PROXIMATE THE EMBOSSING MEANS
John H. Humphrey, Los Angeles, and Harry F. Scheirer and Leonard W. Cheslak, Garden Grove, Calif., assignors to Apsco Products, Los Angeles, Calif., a corporation of Illinois
Filed Dec. 22, 1966, Ser. No. 603,859
15 Claims. (Cl. 197—6.7)

This invention concerns a hand operated tape embossing apparatus incorporating several improvements. The latter

include the provision of: a finger or thumb adjustable roller to controllably advance and retract the tape along

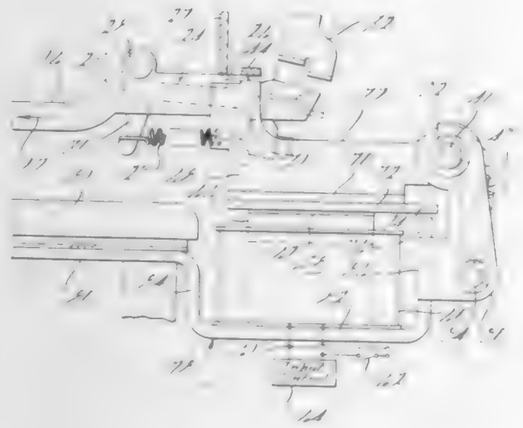


a feed channel: a pivoted actuator forming a tape supply roll magazine; and simplifications in tape feeding, guiding and embossing structure.

3,372,788
PRINTER FUNCTIONAL OPERATION CONTROL MEANS

Martin Siegel, Oak Park, and Roy G. Mason, Detroit, Mich., assignors to Dura Corporation, Oak Park, Mich., a corporation of Michigan

Filed July 22, 1966, Ser. No. 567,259
5 Claims. (Cl. 197—19)



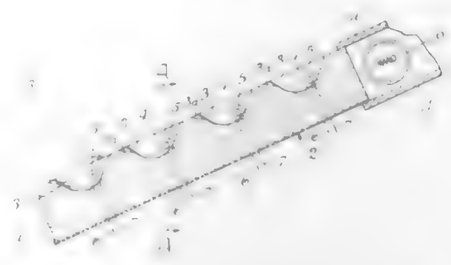
There is herein disclosed an operational control system for a printer having manually operable selection means for selecting various operations and comprising electrically operable control means for selecting the various operations, switch means operable by the manually operable selection means to actuate the electrically operable control means, and input signal means operable by an associated input device to selectively actuate the electrically operable control means.

3,372,789
KEYBOARD WITH IMMOBILE TOUCH SWITCHES

Heinz Thiele, Leinfelden, near Stuttgart, and Gerhard Borner, Musberg, near Stuttgart, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany

Filed Dec. 15, 1966, Ser. No. 602,008
Claims priority, application Germany, Jan. 29, 1966, Z 12,007
6 Claims. (Cl. 197—98)

A keyboard comprising a transparent plate is provided with immobile touch switches consisting of concave touch cavities, each of which is associated with a light barrier means including a photoelectric transducer embedded in the plate which is adapted to be energized by a light beam transmitted by the plate across said cavity. This light beam is interrupted by a finger of the operator when it enters

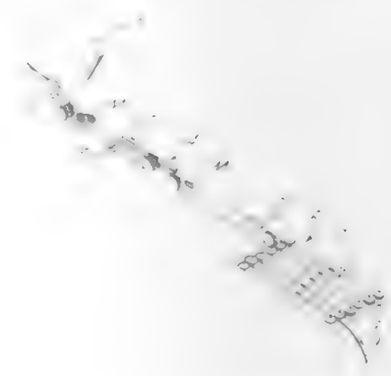


and touches the concave surface of the cavity, thereby producing an electric control impulse which is used in known manner to operate a control device or the like.

3,372,790
APPARATUS FOR FEEDING MOUTHPIECES FOR CIGARS, CIGARETTES AND THE LIKE

George Frederick Pembroke, James George Edward Hillman, and John Elliott New, Deptford, London, England, assignors to Molins Machine Company Limited, London, England, a corporation of Great Britain

Filed Sept. 12, 1966, Ser. No. 578,800
Claims priority, application Great Britain, Sept. 16, 1965, 39,623/65
5 Claims. (Cl. 198—33)



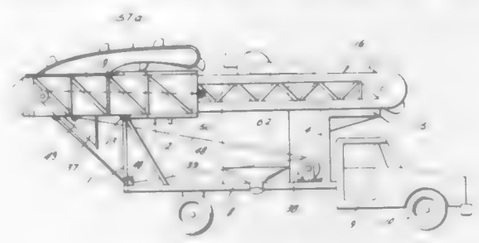
1. Apparatus for feeding and orientating mouthpieces having flattened end portions, which comprises means for extracting a succession of randomly oriented mouthpieces from a bulk supply and delivering them in succession onto at least one pair of elongated generally parallel elements which support said mouthpieces as a column and which are spaced apart sufficiently to permit the flattened end portions of said mouthpieces to pass between them, the mouthpieces being supported by said elements engaging the larger portions of the mouthpieces, said apparatus further comprising a reservoir to receive from said elements mouthpieces which have been orientated in the same direction, said reservoir comprising a plurality of parallel conveyors operatively associated in end-to-end relationship on which the mouthpieces are moved in a sinuous path towards an outlet.

3,372,791
MOBILE ELEVATOR TOWER

Alvin B. Kennedy, Jr., 1802 Meadowview, Alvin, Tex. 77511

Filed July 25, 1966, Ser. No. 567,771
1 Claim. (Cl. 198—121)

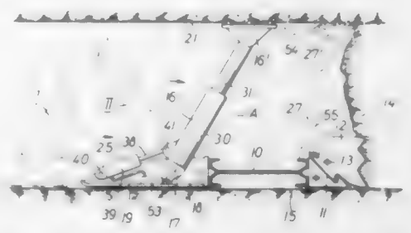
An elevator for particulate material including a powered, continuous belt conveyor mounted in sealingly telescoping, enclosed casing parts pivotally mounted on a truck chassis and which can be collapsed for compact carriage on the chassis, and means to cause a gaseous flow through the casing parts to separate dust from material being elevated.



3,372,792
APPARATUS FOR BRACING A LONGITUDINAL MINING CONVEYOR

Armin Löbbe, Oberaden Post Kamen, Germany, assignor to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a corporation

Filed Mar. 1, 1965, Ser. No. 436,397
Claims priority, application Germany, Feb. 28, 1964, G 39,974
12 Claims. (Cl. 198—126)

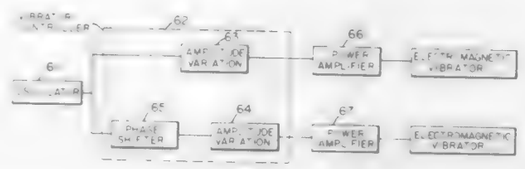


This specification discloses a novel prop means adapted to brace a mining conveyor against the floor and roof of a mine, so constructed that the mining conveyor is capable of moving toward and away from the mine seam plane without disturbing the propping action. This apparatus consists of a mining conveyor having an elastically extensible prop member pivotally connected to the side thereof away from the mine face, which prop member has a cap pivotally connected therewith which impinges upon the mine roof as the mining conveyor proceeds towards or away from the mine face, the prop member extends or retracts elastically without altering the contact thereof with the roof.

3,372,793
VIBRATORY CONVEYOR SYSTEMS

Alan Harry Redford, Whitefield, Manchester, and Geoffrey Boothroyd, Prestwich, Manchester, England, assignors to National Research Development Corporation, London, England, a British corporation

Filed Sept. 14, 1966, Ser. No. 579,272
Claims priority, application Great Britain, Sept. 16, 1965, 39,601/65
2 Claims. (Cl. 198—220)

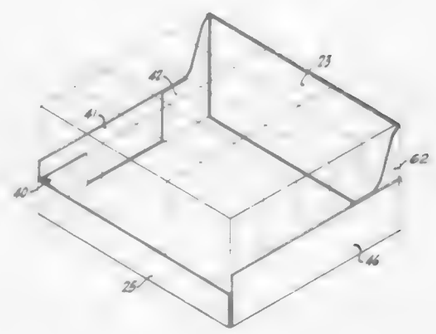


Vibratory conveyors for conveying elements along a rectilinear or curvilinear path and including two independently controllable suspension means, one for producing substantially vertical agitating vibrations and the other for producing substantially horizontal conveying vibrations.

3,372,794
END-LOADING DISPLAY TRAY FORMING SHIPPING CARTON

Frank A. Kohlhaas, Minneapolis, Minn., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed Jan. 16, 1967, Ser. No. 609,555
9 Claims. (Cl. 206—44)

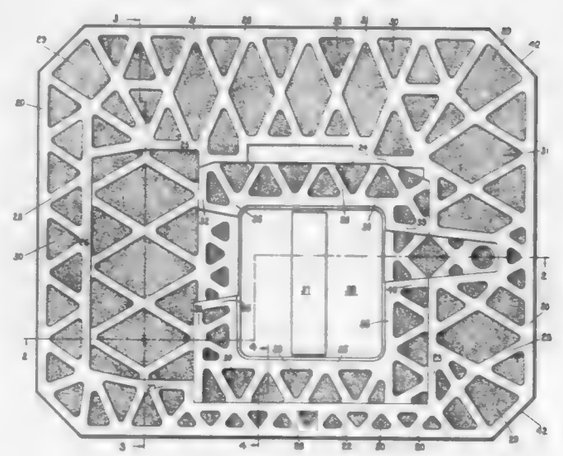


A regular slotted shipping carton having a conventional flap-type end closure modified to be convertible into a display tray. The front wall panel overlaps a front tray-wall panel and is secured thereto with a tear-string tape. The two rear-wall flaps are provided with a perforated score and a particular glue pattern for cooperation with the top and bottom wall flaps which results in the tearing away of a portion of the rear wall flaps with the cover portion as it is removed during the conversion of the carton to a display tray.

3,372,795
PACKAGING PAD

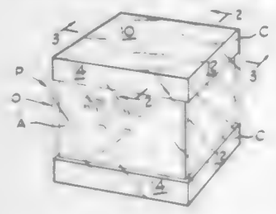
Frank G. Logan II, Framingham, and Harry William Thatcher, Mendon, Mass., assignors to Worcester Moulded Plastics Company, Worcester, Mass.

Filed Nov. 23, 1966, Ser. No. 596,610
9 Claims. (Cl. 206—46)



The invention provides positioning and protective cushioning means for suspending and supporting a fragile product within a common shipping container. The pad may be molded of expanded thermoplastic material to form a centrally positioned receiving enclosure matching the external contours of one end of a proposed product. The receiving enclosure is framed on all four sides by a truss suspension framework and backing plate.

3,372,796
INTERCHANGEABLE CAP FOR PACKAGE
Allan E. Foote, Naperville, Ill., and Arthur W. Tower, Wayne, Pa., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Jan. 13, 1967, Ser. No. 609,119
11 Claims. (Cl. 206—46)



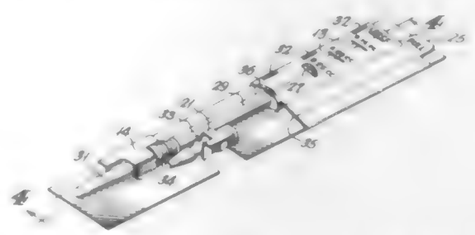
A composite package for an article having end portions with dissimilar contours, including a pair of caps formed from identical, unitary blanks of foldable paperboard each having at least one auxiliary section adapted to be folded in different ways to provide different contours for enclosing respective end portions of the packaged article.

3,372,797
PERFORATED STRIP PACKAGE AND METHOD OF MAKING THE PACKAGE
John J. Grevich, Star Prairie, Wis., assignor to Doughboy Industries, Inc., New Richmond, Wis., a corporation of Wisconsin
Filed May 17, 1965, Ser. No. 456,123
4 Claims. (Cl. 206—56)

A strip package with articles contained in compartments separated by rows of closely spaced apertures separated from each other by small rupturable unsealed panels and formed by piercing the laminae with rods moving endwise through the laminae to also heat seal the laminae together at the peripheries of the apertures, and periodically moving the strip to a new location by tension applied along the strip and through the rows.

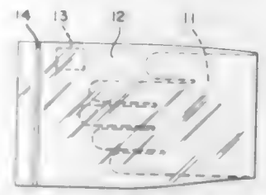
3,372,798
CARD MOUNT PACKAGE FOR HYPODERMIC SYRINGE ASSEMBLY
John Warrick Thomas, % The Thomas Clinic, 2031 Monument Ave., Richmond, Va. 23220
Filed Oct. 31, 1966, Ser. No. 590,920
6 Claims. (Cl. 206—63.2)

1. A card mount package for a hypodermic syringe assembly, said assembly comprising in combination a flange-headed plunger, a syringe barrel, a hypodermic needle and a needle cover, which card mount comprises an elongated flat main body for supporting said assembly, a retaining flap extending from the main body and foldable inwardly over said plunger and said main body and sufficiently beyond said plunger as to permit fastening of the flap when in folded position at a point beyond said plunger to the main body, a plurality of parallel, aligned



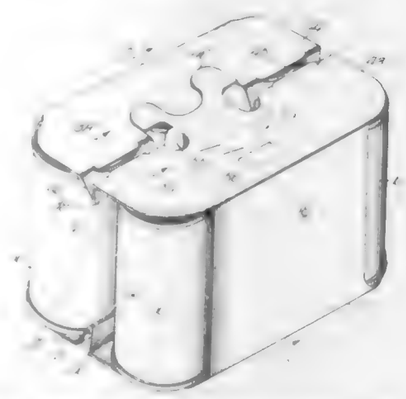
slots in at least one of said main body and said retaining flap disposed transversely to the main body for insertion therein of said plunger head, and retaining means on the main body for holding said syringe barrel immovable relative to said plunger resulting in a fixed measured volume of drug.

3,372,799
SELF-PACKAGED STERILIZED GLOVE AND METHOD
William H. Abildgaard, Los Altos Hills, Calif., assignor to Becton, Dickinson of California, Inc., Los Gatos, Calif., a corporation of California
Filed Jan. 30, 1967, Ser. No. 612,415
4 Claims. (Cl. 206—63.2)



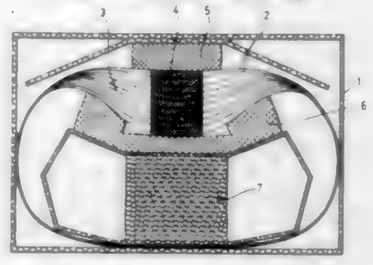
A self-packaging glove for use by surgeons, physicians, and the like, and the method of making thereof. The glove has its exterior surface sterilized and the wrist and arm portion of the glove is folded back over the hand and finger portion to encompass and extend beyond the hand and finger portion. A closure forms a closed package at the wrist and arm portion of the glove so that the exterior sterils surface of the glove is completely enclosed against contamination.

3,372,800
ARTICLE CARRIER
Edwin L. Arneson, Morris, Ill., assignor to Federal Paper Board Company, Inc., Bogota, N.J., a corporation of New York
Filed Sept. 13, 1961, Ser. No. 137,892
11 Claims. (Cl. 206—65)



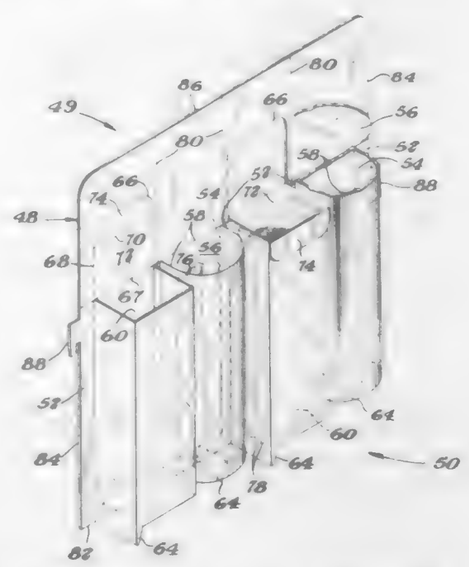
1. A can package comprising two rows of cans having chines at opposite ends thereof and a paperboard carton tightly enclosing the cans so as to form an open ended tubular carrier with portions of the carton walls at the ends of the cans being folded inwardly between the ends of the cans so as to form longitudinal partitions each having an outwardly opening V-shaped cross section and said partitions having apertures cut therein which receive portions of the chines of the cans in each row thereof whereby to firmly anchor the cans against movement in both vertical and longitudinal directions and to restrain the cans against movement out of the open ends of the carrier.

3,372,801
PACKING FOR CYLINDRICAL FOILS AND A METHOD FOR PACKING THESE CYLINDERS
Hendrik Wagter, Mook, Netherlands, assignors to Gebr. Stork & Co's Apparatenfabriek N.V., Amsterdam, Netherlands
Filed Feb. 23, 1967, Ser. No. 618,210
Claims priority, application Netherlands, Mar. 31, 1966, 66—4,317
4 Claims. (Cl. 206—65)



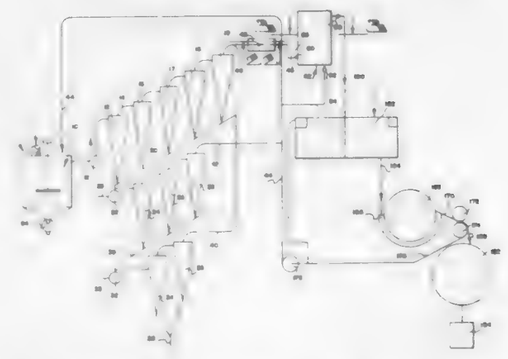
A number of cylindrical metal stencils slid into each other and packed in a box, said stencils contacting each adjacent stencil over at least one half of their circumference, the remaining part being spaced by means of soft resilient material.

3,372,802
DISPENSING CONTAINER FOR DISPLAYING ARTICLES ON A SURFACE
John P. Repko, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 12, 1966, Ser. No. 578,556
3 Claims. (Cl. 206—78)



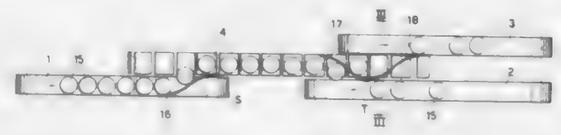
A disposable dispensing container comprising a backing having one or more pockets secured thereto for display of unit packages. Several types of covers for the pockets are disclosed.

3,372,803
MEANS AND METHOD FOR REMOVING IRON FROM ASBESTOS ORE
Auguste Louis de Lisle, Scottsdale, Ariz.; Frances S. de Lisle, executrix of said Auguste Louis de Lisle, deceased, and William Courtland Kinnon, Phoenix, Ariz., assignors to Chembestos Corporation, Phoenix, Ariz., a corporation of Arizona
Filed July 30, 1964, Ser. No. 386,226
15 Claims. (Cl. 209—5)



15. A process for removing iron from asbestos ore comprising the steps of mechanically reducing asbestos ore to a pulp state in a liquid having dispersing reagents therein which chemically loosens iron and minerals from the fibers of the asbestos thereby forming a slurry of relatively free asbestos fibers; said asbestos fibers and said liquid in said slurry ranging in proportions by weight from 1 to 40 asbestos fibers and liquid, respectively, to 1 to 100; then forcing said slurry at high velocity through a separator means and moving said slurry in a manner to cause separation of iron particles from the fibers of said pulp due to a difference in specific gravity between the iron and the fibers, whereby a substantial portion of the heavier iron particles are separated from said fibers; then passing said slurry with the fibers from which said portion of the heavier iron particles have been separated through an intense magnetic field to thereby magnetize unseparated particles of iron, to thereby force iron particles in the slurry magnetically to coalesce, thereby forming relatively large magnetic particles in said slurry; then passing said slurry carrying said relatively larger particles into contact with collector magnets and thereby collecting said coalesced particles thereon and thus removing coalesced particles from said fibers; then filtering said asbestos fibers from said slurry and then drying said fibers; and gravitationally removing iron from said first mentioned separator means.

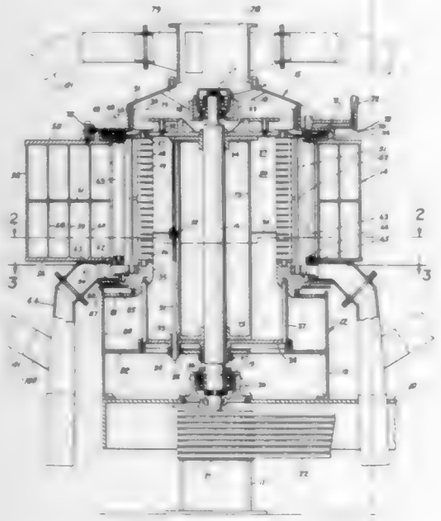
3,372,804
AUTOMATIC MACHINE FOR CHECKING THE WEIGHT OF OPEN CANS CONTAINING LIQUID OR SEMILIQUID SUBSTANCES
Lionello Puoti, Via Confalone 7, Naples, Italy
Filed Nov. 19, 1965, Ser. No. 508,777
Claims priority, application Italy, Sept. 30, 1965, 21,533/65
6 Claims. (Cl. 209—74)



A machine for checking the weight of open filled cans includes scales for individual cans mounted upon a movable conveyor, the cans being transferred from another movable conveyor individually upon the scales by a deviator. Another deviator shifts cans having the proper

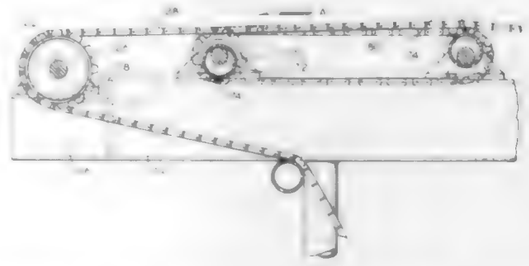
weight from the scales to a third conveyor, while cans of insufficient weight are moved by a third deviator to a fourth conveyor.

3,372,805
FINE PARTICLE CLASSIFIER
William H. Lykken and James W. Bercaw, Springfield, Ohio, assignors to The Microcyclomat Co., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 29, 1965, Ser. No. 517,387
7 Claims. (Cl. 209—144)



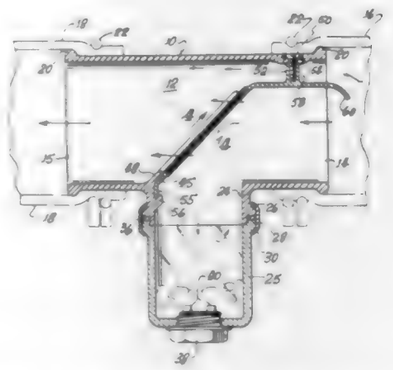
1. A vertical classifier apparatus for dry pulverulent material which comprises:
(A) a peripheral inlet-axial outlet centripetal extraction classifier rotor journaled for rotation on a vertical axis within a rotor housing, said rotor comprising a plurality of spaced apart horizontal annular discs and a plurality of vertical blades between the discs,
(B) an annular axial discharge duct extending through said rotor,
(C) a material feed inlet at the top of said housing,
(D) means for distribution of feed for gravitational flow about the cylindrical periphery of said rotor,
(E) an air inlet to said rotor housing,
(F) a fan housing and fine product discharge in communication with the axial discharge duct of said rotor,
(G) fan means on said rotor within said fan housing,
(H) an annular coarse particles discharge chamber disposed about said rotor between the bottommost of said annular discs and said fan housing and in direct communication with the annular space surrounding the cylindrical periphery of the rotor,
(I) a vertically bladed horizontal ring extending from said rotor for rotation in said coarse discharge chamber,
(J) at least one coarse particle discharge duct in communication with said chamber,
(K) an annular pneumatic seal chamber disposed around said rotor between said coarse particle discharge chamber and said fan housing,
(L) an air inlet to said pneumatic seal chamber, and
(M) a horizontal barrier disc extending from said rotor for rotation in said pneumatic seal chamber, said disc dividing said chamber into a top portion in communication with said last named air inlet and said coarse particle discharge chamber and a bottom portion in communication with said air inlet and said fan housing, whereby passage of particles from said coarse particle discharge chamber to said fan housing is effectively prevented.

3,372,806
HARVEST SHAKER
Wellington W. Porter, R.D. 2, Waterloo, N.Y. 13165
Filed Apr. 27, 1966, Ser. No. 545,623
11 Claims. (Cl. 209—247)



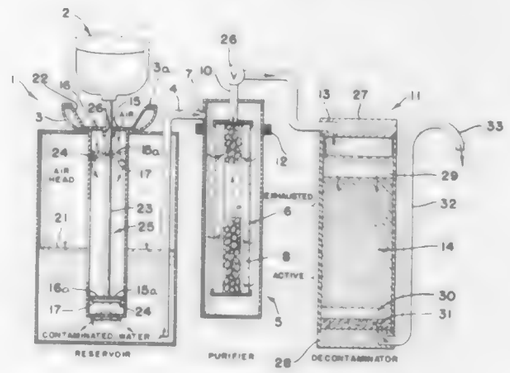
Harvest apparatus comprising an elevating conveyor having a counter rotating drum with tines disposed thereabove to limit the thickness of harvest conveyed, and a shaker apparatus comprising an endless conveyor of course mesh, providing a flexible bed grid disposed to receive harvest from the elevating conveyor, the shaker apparatus including means to advance the bed grid in a direction away from the elevating conveyor, at a selected speed, and shaker rolls disposed beneath the bed mounted eccentrically on axes uniformly spaced and lying in a common plane beneath the bed grid, each roll having a shaker cam rod affixed thereto on the most eccentric side, and means for driving all of the rolls in the same direction, and at a speed independent of the conveyor bed grid movement.

3,372,807
FILTER
Charles A. Barnard, 813 W. J St.,
Ontario, Calif. 91762
Continuation-in-part of application Ser. No. 409,776, Nov. 9, 1964. This application Dec. 19, 1966, Ser. No. 602,779
7 Claims. (Cl. 210—94)



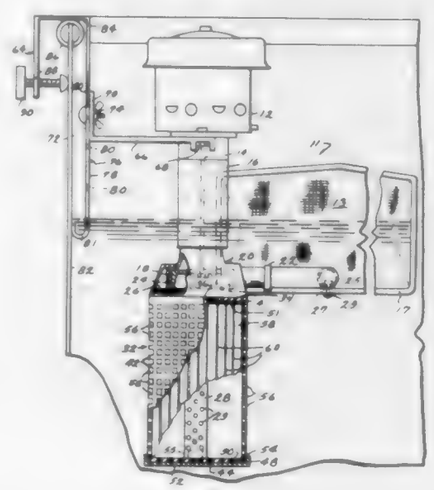
An accessory for installation in the engine cooling system of an automotive vehicle to trap foreign material entrained in the engine coolant, the accessory having a main coolant conduit removably mounting a filter bowl, and an inclined filter within the conduit for separating out foreign material from the coolant and diverting the foreign material into the filter bowl, the filter being removable for cleaning and spanning a portion only of the coolant passage in the conduit, whereby sufficient coolant is permitted to flow through the engine to prevent overheating even though the filter is clogged.

3,372,808
APPARATUS FOR REMOVING RADIOACTIVE MATERIALS FROM WATER
Joseph F. Sabo, 8680 Lewis Road,
Olmsted Falls, Ohio 44138
Continuation of application Ser. No. 157,750, Dec. 7, 1961. This application June 9, 1966, Ser. No. 556,521
4 Claims. (Cl. 210—95)



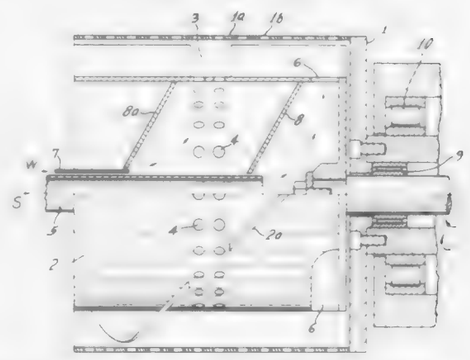
A physically integrated filter unit for purifying and removing radioactive materials from water which includes a closable reservoir having an inlet port and an outlet port. A pump is provided in the reservoir for creating a pressure head in said reservoir. A silver impregnated ceramic filter having an outlet port and an inlet port is in fluid communication with the outlet port of said reservoir means and ion-exchange means is likewise in fluid communication with the outlet port of said ceramic filter through which water to be purified is passed. The water to be purified is passed from the reservoir to the ceramic filter and then into and through the ion-exchange means. A variable fluid flow control valve is provided at the outlet of the filter unit to regulate the output flow of filtered water under pressure from said unit.

3,372,809
SWIMMING POOL SURFACE SKIMMER
Carroll F. Spitzer, Rte. 3, Hagerstown, Md. 21740
Filed Apr. 29, 1965, Ser. No. 451,808
3 Claims. (Cl. 210—169)



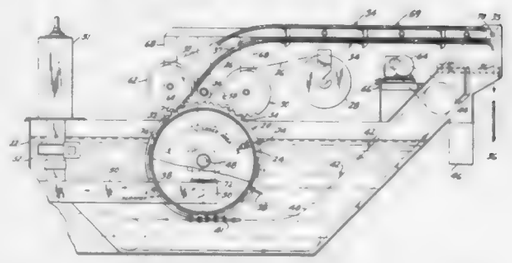
Apparatus for bringing water up from the lower region of a swimming pool, filtering this water to remove submerged debris therefrom, jetting the filtered water tangentially to the pool water surface and into a reticulated structure only partly submerged below the pool water surface in order to establish and maintain water circulation in the pool and to catch floating debris in the reticulated structure.

3,372,810
SIEVE CENTRIFUGE
Hans Kletschke, Wiesbaden-Biebrich, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany
Filed Sept. 1, 1964, Ser. No. 393,533
Claims priority, application Germany, Sept. 3, 1963, K 50,717
1 Claim. (Cl. 210—210)



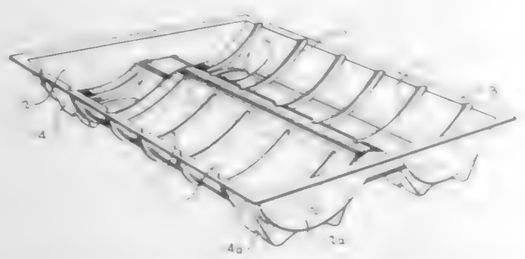
The present invention relates to a sieve centrifuge, for washing solid flowable material, including a rotatable cylindrical drum having sieve apertures in the curved periphery thereof and a relatively rotatable generally cylindrical feed screw mounted coaxially within the drum, the thread or threads of the feed screw being interrupted to provide at least one free annular space between the circumference of the feed screw and the drum, the feed screw having peripheral apertures through which wash liquid can be supplied from a passage within the screw to the annular space, and the arrangement being such that by relative rotation of the feed screw and the drum during operation of the centrifuge, material supplied at one end of the drum can be fed between the feed screw and the drum in a direction parallel to their common rotational axis, passing across the annular space and out of the the other end of the drum.

3,372,811
ROTATING DRUM FILTER APPARATUS
Orlan M. Arnold, Grosse Pointe Park, Frederick W. Koepke, Jr., Detroit, Sark Pashaian, Monroe, James M. Stewart, Dearborn, Emil Umbricht, Northville, and Henry Joseph Laslo, Detroit, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.
Filed Apr. 16, 1964, Ser. No. 364,352
4 Claims. (Cl. 210—387)



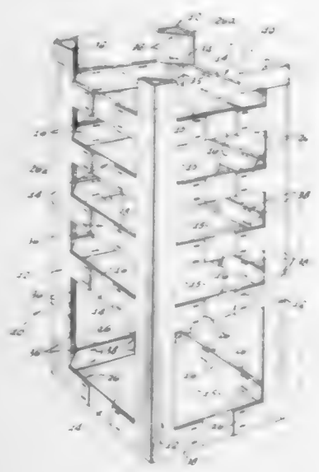
A rotatable filter drum having a pervious filter face and a hollow hub. Suction is applied to the interior of the drum through the hub and liquid is filtered through the filter face. An arcuate wall, stationary relative to rotations of the filter drum, is positioned to seal off that portion of the pervious face which at any time is exposed above the level of the liquid being filtered.

3,372,812
DISPLAY RACK
Clarence W. Parcels, Racine, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Aug. 2, 1965, Ser. No. 476,580
4 Claims. (Cl. 211—49)



A unitary merchandise display tray for displaying flat, circular articles is described. The tray comprises a body having a plurality of semi-circular troughs extending from end to end thereof for receiving articles to be displayed, end portions at each end of the body and front and rear feet. The body and ends are of shallow depth to permit the viewing of the articles without necessitating their removal from the tray. The feet are concave to complement the curvature of the articles being displayed.

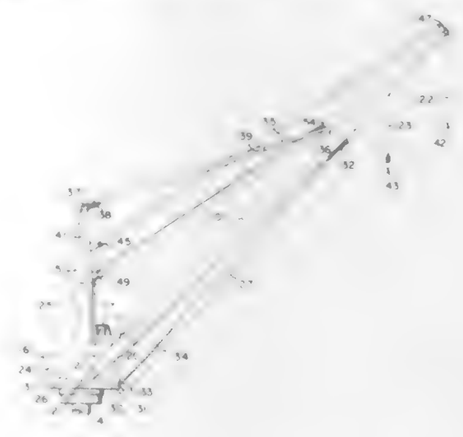
3,372,813
COMBINED SHIPPING AND DISPLAY RACK
Henry J. Ishida, 16420 S. Avalon Blvd., Gardena, Calif. 90247
Filed Apr. 5, 1966, Ser. No. 540,341
10 Claims. (Cl. 211—135)



A rack that is made of cardboard can be erected to provide a combined shipping and display rack for merchandise and is especially suited to shipping and displaying plants. Several trays are provided at different levels, and the spacing between these can be adapted to the merchandise. After use, the rack may be disposed of by burning.

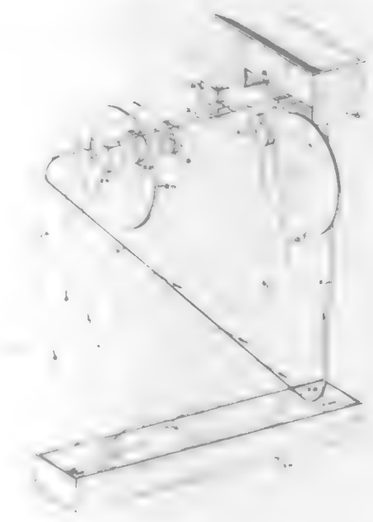
3,372,814
CRANE WITH BOOM-STABILIZING HOLD-DOWN
Arthur J. Muhlbeier, Sedro Woolley, and Donald J. Wudtke, Burlington, Wash., assignors to Skagit Corporation, Sedro Woolley, Wash., a corporation of Washington
Filed Nov. 4, 1966, Ser. No. 592,182
10 Claims. (Cl. 212—39)

This invention relates to a crane, and particularly a crane of the character—a derrick crane for example—in which a boom is pivoted for vertical swing movement and is governed in said swing movement by either taking in or letting out a topping line. The boom in a crane of this character can become unstable, i.e., evidence an overturning moment in the direction of the topping line, when the crane is worked under adverse conditions, say in a high wind. Wind-created instability is of course most apt to occur when the boom has been raised to an angle of 45° or more. The problem of instability is one to which ship-carried cranes are especially prone. An overturning moment may occur from a ship's roll where the ship is called upon to load or unload cargo in open water.



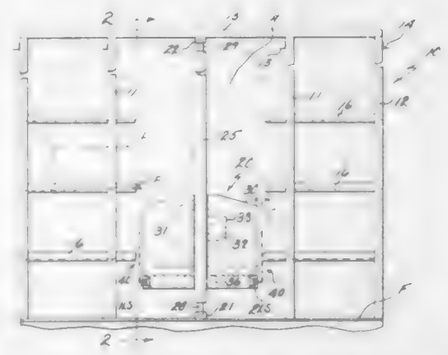
As heretofore known, cranes with vertically swingable booms have relied upon the weight of the boom to resist overturning forces, augmented at times by the weight of a suspended load. However, such augmentation obtains only if the crane is not level-luffing. The problem of instability is of moment to any crane having a vertically swingable boom but is of even greater concern with level-luffing cranes.

3,372,815
CONVEYER FOR FLEXIBLE MATERIAL
Charles Michael Lovendusky, Enola, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation of application Ser. No. 248,111, Dec. 28, 1962. This application Feb. 23, 1965, Ser. No. 434,534
4 Claims. (Cl. 214—6)



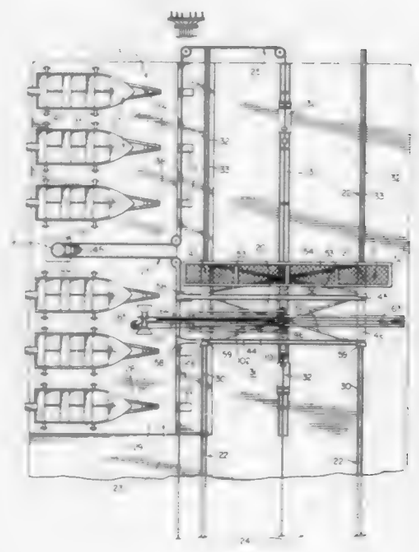
1. A conveyer for relatively elongated lengths of limp material such as wire, the width of said conveyer being an insignificant fraction of the lengths of said material whereby said lengths dangle from the sides of said conveyer, said conveyer being movable along a predetermined path in a substantially vertical plane, a loading station and a release station, said release station being disposed adjacent to a horizontal datum plane and said loading station being above and remote from said datum plane, means for moving said conveyer along said path from said loading station to said release station, stationary retaining means extending parallel and adjacent to said conveyer from said loading station to said release station for holding said individual lengths of material on said conveyer during movement of said lengths from said loading station to said release station, said path being obliquely descending towards said datum plane from said loading station to said release station whereby said individual lengths dangle towards said datum plane and are laid out in a bundle substantially parallel to said conveyer plane on said datum plane beneath said obliquely descending conveyer path.

3,372,816
DETECTING DEVICE FOR IMPROPERLY POSITIONED LOADS IN AN AUTOMATIC WAREHOUSING SYSTEM
Wayne G. Atwater, Willoughby, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 20, 1966, Ser. No. 521,893
22 Claims. (Cl. 214—16.4)



A detector device for detecting out-of-position loads or obstacles in the running clearance between a powered load carrier and a storage frame of an automatic warehousing system, with the detecting device including sensing means, which sensing means may comprise either a pivotal arm or feeler which is adapted to be moved or swept through the running clearance, to mechanically probe the running clearance, to determine if there is an obstacle or out-of-position load therein, or the sensing means may comprise photoelectric means which probes the running clearance with an energy beam to determine if there is an obstacle or out-of-position load in the path of the energy beam. The sensing means has means coupled therewith and coupled in circuit with the control means for the warehousing system, for preventing operation of the power means which drives the load carrier of the system when the sensing means detects an obstacle or out-of-position load in the running clearance. Also, an arrangement is provided operatively coupled to the control means for the system, for providing for the detecting device to be operative for detecting obstacles or loads projecting into the running clearance and preventing further operation of the load carrier when the detecting device does detect an out-of-position load or other obstacle, only when the extractor is in a generally centered position with respect to the load carrier. The mechanical arrangement of feeler can sweep or probe in a vertical plane parallel to the vertical loading face of the storage rack in certain embodiments, and in other mechanical embodiments illustrated, the sensing arm or feeler sweeps horizontally in a plane generally perpendicular to the vertical loading face of the storage rack. So far as the photoelectric cell arrangement is concerned, certain embodiments illustrate the photoelectric sensing mechanism as mounted on the elevator of the load carrier for movement therewith, and in other embodiments the photoelectric sensor is mounted on the horizontally movable conveyor frame of the load carrier. In one embodiment of the invention, the photoelectric sensor mechanism is movably mounted on the load carrier so that it can be extended and retracted into and from the running clearance.

3,372,817
BOAT MOVING AND STORAGE APPARATUS
Homer E. Conklin, Spirit Lake, Idaho 83869
Filed Feb. 10, 1966, Ser. No. 526,576
6 Claims. (Cl. 214—16.4)

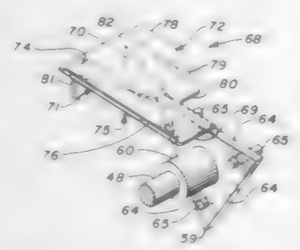


4. In a boat moving and storage apparatus of the type having a carriage with extensible boom carrying an extensible boom cart, said carriage being moveable over tracks extending between a storage area and a spaced launching area, and associated small craft with carts adapted for locomotion over said storage area and said carriage, means of moving said carts comprising:
an endless cable communicating between said storage and launching areas and with said boom, boom cart and carriage;
first means to determine motion of said carriage in response to cable motion;
second means to move said boom and boom cart in response to cable motion upon predetermined position of said carriage; and
third means of supplying directional motion to said cable.

3,372,818
SILO UNLOADER IMPELLER
Shaun A. Seymour, Ephrata, Pa., William E. James, Dijon, France, and William W. Mann, Talmage, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Aug. 24, 1966, Ser. No. 574,626
6 Claims. (Cl. 214—17)

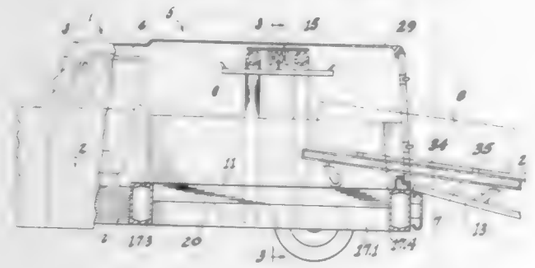
1. In a silo unloader having a frame, a discharge spout and silage gathering means on said frame, means to receive silage from said gathering means and impel said silage through said spout comprising, a housing on said frame having an arcuate wall defining a discharge opening communicating with said spout, said housing having first and second end walls the first of which defines an in-

let opening spaced from said discharge opening and disposed to receive silage from said gathering means, rotary impeller means disposed in said housing and having a central axis of rotation, means journalling said impeller means in said housing end walls for rotation about said axis, drive means rotating said impeller means in a predetermined direction about said axis, said impeller means comprising a plurality of paddle blades each having proximate and distal ends relative to said axis of rotation, said blades each having first and second sides disposed respectively adjacent said first and second housing end walls and extending between said proximate and distal ends, said blades each having leading and trailing surfaces relative to said predetermined direction of rotation, said first



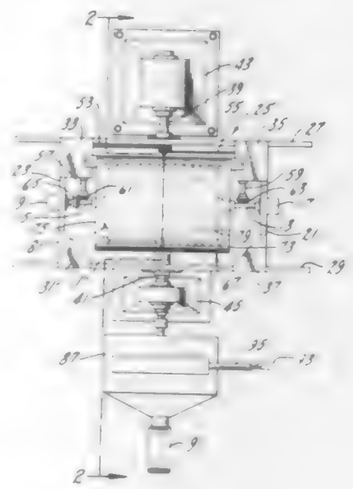
sides of said blades lying in a plane parallel to said first end wall of said housing, each of said blades having a flange thereon extending along said first side of the blade generally parallel to said first end wall of said housing gaging said trailing surfaces of said blades and attach- and perpendicular to said leading surface of the blade, said flange on each of the blades projecting ahead of said leading surface relative to said direction of rotation, said second sides of said blades having first portions adjacent said distal ends and second portions extending from said first portions to said proximate ends, said first portions extending parallel to said first sides and said second portion converging generally toward said first sides between said first portions and said proximate ends, and means ening the blades to said journallin means.

3,372,819
VEHICLE FOR HANDLING BURIAL OBJECTS
Lester W. Kellogg, 4160 Jackson Blvd., Davisburg, Mich. 48019
Filed Oct. 14, 1965, Ser. No. 496,067
4 Claims. (Cl. 214—396)



A vehicle for handling burial objects, such as caskets, vaults, and vault lids, has a conventional front portion with front-wheel drive and a driver's compartment and a rear load-carrying portion for the burial object. The rear portion has a rear opening, and a bottom opening through which the burial object may be passed in horizontal position by means of an overhead means and slings. In one embodiment the rear portion has tracks and a removable ramp leading to the ground, and the burial object is loaded by means of a dolly. In another embodiment, the rear and bottom openings are continuous and the burial object is loaded by backing the vehicle thereover.

3,372,820
HEATING ARRANGEMENT FOR MOLDING MACHINES
Louis H. Barnett, Fort Worth, Tex., assignor, by mesne assignments, to Loma Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 22, 1965, Ser. No. 501,915
10 Claims. (Cl. 264—310)



1. A mold heating apparatus for use in a thermofusion rotational molding machine in which a mold is supported by a frame for rotation about a first axis and the frame and mold are mounted for rotation about an axis perpendicuir to said first axis including:
means for heating a heat transfer fluid with said means located remotely from said mold,
a housing attached to said frame and defining an enclosure to receive at least part of said mold,
said housing having outer and inner walls defining a plenum,
a plurality of openings extending through said inner walls from said plenum and into said mold enclosure,
at least one opening exhausting from said mold enclosure,
a conduit connected to said plenum to conduct said heat transfer fluid from said heating means into said plenum,
said conduit being formed and adapted to maintain communication between said heating means and said plenum during rotation of said housing with said frame and mold, and
means to move said heat transfer fluid from said heating means through said conduit, plenum and inner wall openings, against said mold and out said mold enclosure exhaust opening.

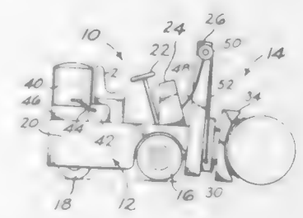
6. A method for heating a mold that is rotated about mutually perpendicular axes comprising the steps of:
enclosing a substantial part of said mold,
rotating said enclosure and said mold around one of said axes,
increasing the temperature of a heat transfer fluid at a location remote from said mold, and
conducting said heated transfer fluid to said enclosure to heat said mold.

3,372,821
SPARE TIRE HOLDER
William R. Podhajsky, Rte. 2, Toledo, Iowa 52342
Filed Feb. 21, 1966, Ser. No. 528,974
10 Claims. (Cl. 214—451)

A winch type spare tire holder for mounting under a pickup truck frame and having winch controls accessible at the rear of the vehicle. A lock system is provided for the controls and the winch attachment to the spare tire

is sealed against tampering. It has a brake device to control attaching and releasing the spare tire relative to the holder.

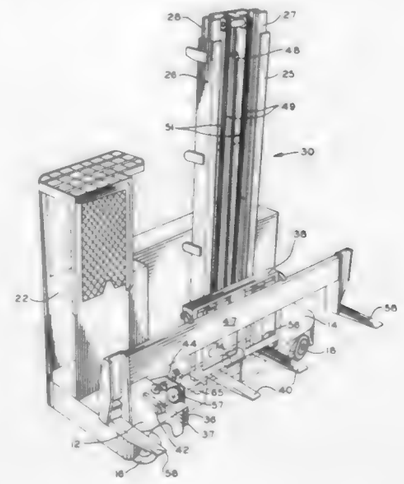
3,372,822
LOAD HANDLING APPARATUS WITH VACUUM ATTACHING MEANS
Harry F. Weinert, Portland, Oreg., assignor to Cascade Corporation, Portland, Oreg., a corporation of Oregon
Continuation-in-part of application Ser. No. 285,015, Feb. 12, 1963. This application May 27, 1965, Ser. No. 462,785
8 Claims. (Cl. 214—650)



4. In load-handling apparatus including vacuum-attaching means,
a motor-driven vacuum producer,
vacuum conduit means connecting the vacuum producer and the vacuum-attaching means whereby a vacuum to operate said attaching means is supplied by said vacuum producer, said conduit means including valve means for controlling operating periods of said vacuum-attaching means, and
means for operating said vacuum-attaching means responsive to a loss of vacuum in said vacuum conduit means,
said means comprising a reservoir for holding gas under pressure, an ejector operated by the flow of gas therethrough including an inlet connected to said reservoir to enable the supply of gas to the ejector from said reservoir and a vacuum supply connection wherein a vacuum is produced on operation of the ejector, and conduit means connecting said vacuum-supply connection with said vacuum-attaching means.

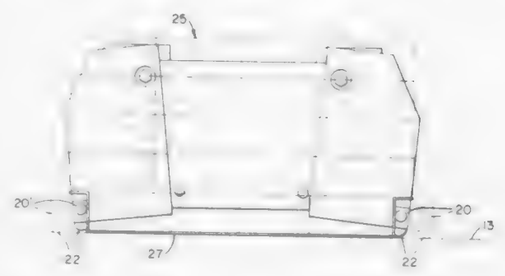
3,372,823
LIFT TRUCK MAST TILTING ARRANGEMENT
Christian D. Gibson and Robert R. Clark, Greene, N.Y., assignors to The Raymond Corporation, Greene, N.Y., a corporation of New York
Filed Oct. 4, 1965, Ser. No. 492,634
8 Claims. (Cl. 214—674)

A tilting mechanism for a translatable lift truck mast in which the mast is supported at its base both by rollers seated upon horizontally-extending trackways and by plate means, and in which a non-rotatable assembly which is



horizontally translatable with the mast carries rotatable cam means, so that rotation of the cam means tilts the mast about the axis of the mentioned rollers.

3,372,824
SELF-ADJUSTING FORK ATTACHMENT FOR A LIFT TRUCK
Richard L. Callahan, Rochester, N.Y., assignor to Gerber Products Company, Fremont, Mich.
Filed June 27, 1966, Ser. No. 560,700
3 Claims. (Cl. 214—731)

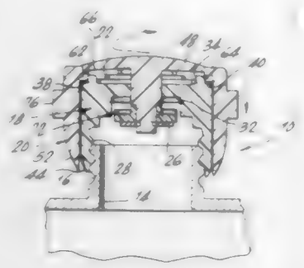


1. In a lift truck, a fork attachment for raising a Walsh-type self-palletized load from a supporting surface, comprising: an upright support adapted to be raised and lowered; a pair of upright tine-holding arms; means for pivotally mounting said tine-holding arms on said upright support for rotation about respective horizontal axes; a pair of tines, each of said tines being rigidly attached to and projecting outwardly from a respective arm at a location below the corresponding pivot point; each of said arms and tines defining a unit having a lower edge adapted to engage said supporting surface to dispose said unit with its center of gravity displaced laterally and outwardly of its pivotal mounting means at least when said support is at its lowermost position whereby said units are movable inwardly toward each other when said support is raised, to locate said pair of tines under said self-palletized load.

3,372,825
SAFETY CAP
Don Laviano, 119 Washington Place, New York, N.Y. 10014
Filed Aug. 25, 1966, Ser. No. 575,109
8 Claims. (Cl. 215—9)

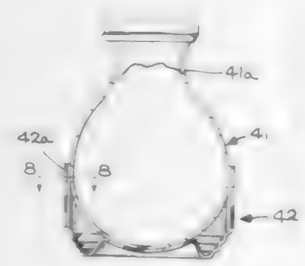
1. A safety cap comprising a cylindrical body having a transverse web at the upper portion thereof, the lower portion of said body being internally threaded for

threaded engagement with a container, said web having a bore there through, the undersurface of said web being provided with teeth, the upper surface of said web being provided with notch means therein, a housing for receiving said body, said housing having a top provided with a depending stem extending through said bore, detent,



means depending from said top and complementary with and engageable in said notch means, spring means biasing said web and said top normally urging said housing to a raised position with said detent means out of engagement with said notch means, and toothed means mounted on said stem of greater diameter than said bore for engagement with said teeth.

3,372,826
COMPOSITE CONTAINER
Richard A. Heaton, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Mar. 30, 1966, Ser. No. 538,735
18 Claims. (Cl. 215—12)



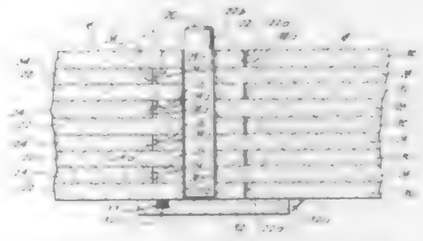
This invention relates to a composite container for packaging a product, the container being comprised of a paste molded glass envelope of substantially thin, uniform wall thickness and distribution. The glass envelope is seamless and has a lower bulbous portion that is substantially spherically contoured which defines the major diameter of the envelope. The upper portion of the envelope terminates in an orifice defining a mouth or finish of the container which receives a closure. A fitment made of a yieldable, less frangible material comprises a cup-shaped bottom or base that is adhesively or otherwise secured to the lower bulbular portion of the glass envelope to support the latter in its upright position and protect it from sidewise impact with other adjacent containers or the like.

3,372,827
SAFETY VENTS FOR PLASTIC COVERED GLASS AEROSOL CONTAINERS
George Altschuler, 2325 Nantell St., Montreal, Quebec, Canada
Filed Feb. 27, 1967, Ser. No. 618,821
5 Claims. (Cl. 215—12)

A glass aerosol pressure bottle covered with a coating of plastic material in which the plastic coating is provided with one or more short slits disposed lengthwise of the bottle to form vents for relief of the pressure within the bottle in the event the bottle is accidentally broken.

The plastic coating remains substantially intact during the escape of gas from the broken bottle.

3,372,828
VESSEL ASSEMBLY
Raymond E. Pechacek and Eugene J. Clay, Houston, Tex., assignors to Hahn & Clay, a corporation of Texas
Filed May 24, 1965, Ser. No. 458,333
6 Claims. (Cl. 220—5)

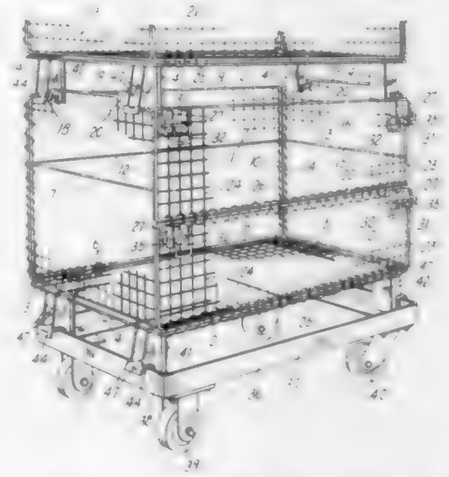


A releasable coupling for a vessel adapted to withstand relatively high internal pressure, wherein the coupling has substantially the same wall thickness as the wall of the vessel, and wherein the coupling may be quickly released when desired.

3,372,829
PORTABLE AND COLLAPSIBLE STACKING BINS OR CRATES
Charles C. Averill, Albion, Mich., assignor to Union Steel Products Company, Albion, Mich.
Filed May 18, 1964, Ser. No. 368,139
14 Claims. (Cl. 220—6)

1. In a crate or container, the combination of a bottom unit comprising a rectangular frame of rod-like stock having integral front, rear and end members, a rear wall unit comprising a rectangular frame of rod-like stock and having integral bottom, end and top members, the bottom member of said rear wall unit being hingedly connected to the rear member of said bottom frame, end walls, each comprising a rectangular frame of rod-like stock and having integral bottom, side and top members, the top members having intermediate portions thereof of substantial length upwardly offset thereby providing the top members with laterally spaced laterally facing shoulders, the rear side members of said end wall frames being hingedly connected to the end uprights of said rear wall frame, the said connections permitting the collapsing of the end walls on said rear wall, the hinge connection for said rear wall to said bottom unit permitting the collapsing thereof with the end wall collapsed relative thereto upon said bottom unit, a front wall unit comprising

sections, each section including rectangular frame members of rod-like stock including unitary bottom, top and end members, the bottom member of the lower of said front wall sections being hingedly connected to the front frame member of the bottom, adjacent longitudinal frame members of said front wall sections being hingedly connected to each other, the connections for the bottom front wall member to the bottom being such as to permit collapsing of the front wall unit upon the bottom, the said rear and end walls when the end walls are in collapsed position being collapsible upon the front wall unit when

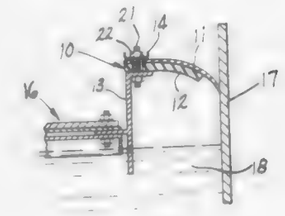


it is in collapsed position upon the bottom, and legs disposed at the ends of and fixedly mounted on said bottom unit and having downwardly facing recesses supportedly engageable with the top members of the end walls when they are in erected position, said legs being spaced to laterally engage said upwardly projecting portions of said end wall frames, said front wall sections and said end walls having coacting bolts and keepers for holding the front wall sections in erected position while permitting the sections being successively opened to afford access to the contents of the crate with like crates in stacked position.

3,372,830
INSULATED DOUBLE CUP
Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed June 23, 1964, Ser. No. 377,212
14 Claims. (Cl. 220—9)

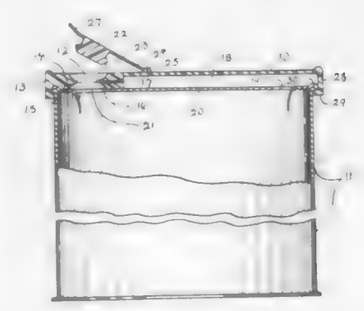
A double-walled container having interfitting inner and outer receptacles or wall portions which cooperate to provide an insulated and reinforced finger-gripping section for the container as well as a novel stacking construction for a double-walled container.

3,372,831
SEAL FOR FLOATING DECK
Frank J. Daniels, Baldwin, N.Y., and Lou C. Creith, Allentown, Pa., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 13, 1965, Ser. No. 447,804
7 Claims. (Cl. 220—26)



This invention relates in general to an improvement in floating decks for use within a liquid storage tank, and more particularly to an improved seal for such floating decks.

3,372,832
REMOVABLE COVER FOR CONTAINERS
Thomas Yeater and Doris J. Smith, both of 4021 W. Fay Circle, Santa Ana, Calif. 92703
Filed June 17, 1966, Ser. No. 558,303
7 Claims. (Cl. 220—29)

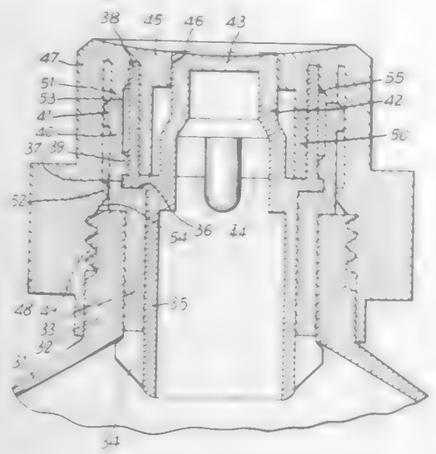


1. A removable closure cap adapted to be secured on a food or beverage tin-can container, comprising a pliable discal means with peripheral skirt terminating in an inwardly projecting means for hermetically sealing said discal means on said container after the top thereof is opened, liquid-dispensing means incorporated in said discal means for disposal of the contents of said container, and means formed in said liquid-dispensing means and disposed between said container and said discal means for venting said container during dispensing of the contents thereof through said liquid-dispensing means.

3,372,833
STOPPERS FOR RECEPTACLES HAVING SCREW-THREADED NECKS
Daniel Baranne, 3 Ave. de la Princesse Mathilde, 95 Saint-Gratien, Seine-et-Oise, France
Filed Dec. 3, 1965, Ser. No. 511,891
Claims priority, application France, Aug. 4, 1965, 27,218
3 Claims. (Cl. 220—39)

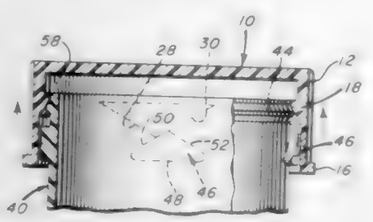
The present stopper is for attachment to containers having a neck with external threads and which stopper when assembled to said neck cannot be readily detached

therefrom. The stopper includes a tubular body insertable in the container neck, a hollow plug member insertable in said tubular body, an internally threaded cap for threaded engagement with said neck and having a central opening in which the top of said plug member mates and



having a skirt and annular rib for cooperating with said inner plug and tubular body to provide three points of lateral sealing around said inner plug to prevent the undesired escape of material from said container other than through said cap center opening.

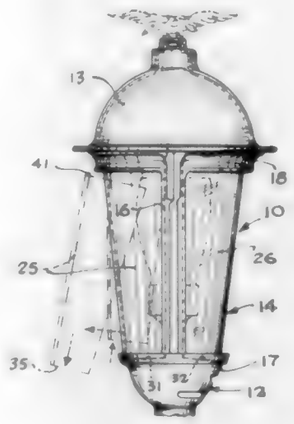
3,372,834
CONTAINER AND CLOSURE ASSEMBLY
Robert A. Ayotte, 1 Central Ave., Mays Landing, N.J. 08330, and Arthur J. Douglas, 4 Allen Ave., Rockport, Mass. 01966
Filed Jan. 24, 1966, Ser. No. 522,494
10 Claims. (Cl. 220—60)



A container and closure assembly comprising an open ended container member, a closure member for sealingly closing said open end, complementary formed interlocking rib means on said container and closure members for holding said closure member in a sealed closing relation to said open end of the container, first and second lug means carried by a surface of said closure and container members respectively, said lug means each having a camming surface interengageable with the other and inclined with respect to the vertical axis of the container member and said camming surfaces being selectively interengageable responsive to relative rotation thereof to effect positive axial disengagement of the aforesaid interlocking means.

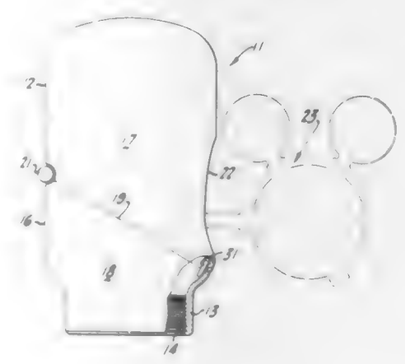
3,372,835
CURVED PANEL LAMP ASSEMBLY
Walter Koziol, Russell, Ill., assignor to Charmglow Manufacturing Co., Antioch, Ill., a corporation of Illinois
Filed Nov. 14, 1966, Ser. No. 593,892
10 Claims. (Cl. 220—82)

Basically, the novel lamp assembly of the present invention comprises one or more curved panel members freely carried by accommodating frame members with curved portions. A curved surface is disposed in the upper portion of the frame for receiving a top portion of the curved panel while a curved base portion of the frame is provided for supporting the base of the curved panel. Stop means are disposed in the base portion of the frame to prevent the base of the curved panel from moving off the base portion of the frame. The upper portion of the curved frame is adapted to allow a portion of the panel



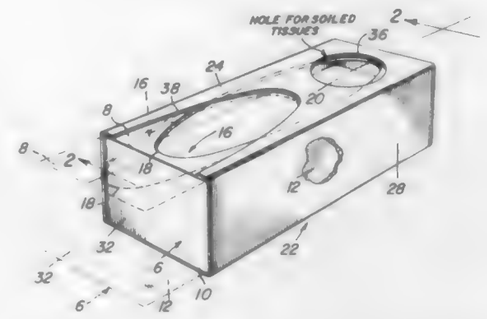
to pass therein sufficient to permit the curved base of the panel to clear the means in the base of the frame. The curved panel is designed and constructed to contact the upper frame portion when it rests by its own weight on the base. Laterally extending flanges and ribs are provided on the frame to arrest inward movement of the curved panel and form a windproof enclosure, respectively.

3,372,836
GAS CYLINDER CAP AND HINGE THEREFOR
Troy E. Smith, 2018 Bishop Road, Belmont, Calif. 94002
Filed Apr. 18, 1966, Ser. No. 543,381
2 Claims. (Cl. 220—85)



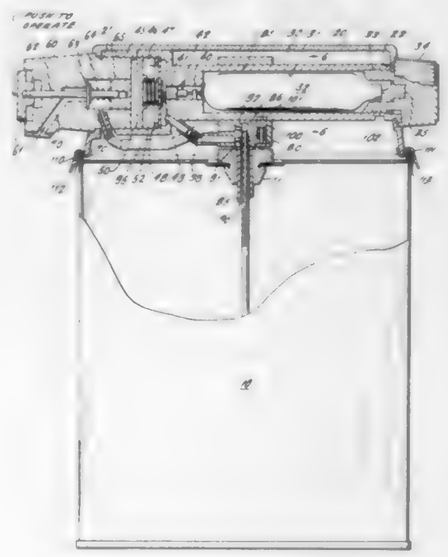
This invention provides a protective cap for attachment to the top of a high-pressure gas cylinder, or the like, and is embodied as upper and lower members with a substantial opening adjacent the bottom of the upper member, and two members mating along an inclined edge extending upwardly from the bottom of this opening to a hinge at the top of the inclination so that the top, or upper member, is pivotally mounted upon the lower member. The lower member is adapted to be attached, as by threaded engagement, onto the top of a gas cylinder, and a latch is provided for holding the two members of the cap together.

3,372,837
COMMERCIAL FACIAL TISSUE DISPENSING BOX WITH AUXILIARY DISPOSAL COVER THEREFOR
Edward C. Neumann, Jersey City, N.J., assignor of fifty percent to Thomas P. Brown, Millville, N.J.
Filed Oct. 3, 1966, Ser. No. 583,768
3 Claims. (Cl. 221—34)



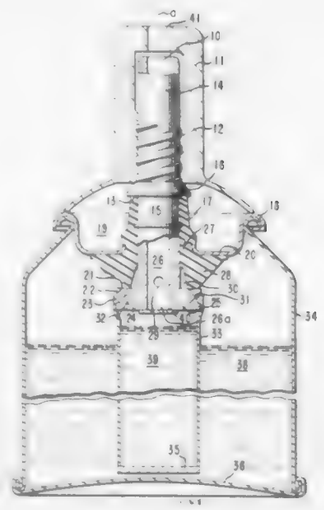
The package above referred to is characterized by a conventional type rectangular cardboard or equivalent box containing facial tissues and wherein the top wall is provided with an elongated dispensing slot affording access to one or more tissues. The improvement has to do with a box-like sheet material cover which is slidingly sleeved over the box. This cover has interconnected top, bottom and side walls as well as one closed end wall. The other or opposite end is open and the closed end wall is manually capable of movement toward and from a corresponding end wall of the box when the cover is shifted relative to the box in a manner to provide a variable depository for soiled tissues and similar litter, the top wall of said cover having a litter hole coacting with an open-mouth notch conjointly capable of orientation and alignment with (1) said dispensing slot (2) said soiled tissue depository.

3,372,838
CARBONATED BEVERAGE DISPENSER
Joseph W. Smith, Trumbull, and Charles P. Mottram, Stratford, Conn., assignors to National Distillers and Chemicals Corporation, New York, N.Y., a corporation of Virginia
Filed May 27, 1966, Ser. No. 553,387
3 Claims. (Cl. 222—52)



A carbonated beverage dispenser has an elongated regulator body containing a cylindrical chamber which completely receives a carbon-dioxide cartridge. The open end of the chamber is closed by a threaded plug containing a piercing member which pierces the cartridge. The opposite end of the regulator body receives a threaded spigot with the threaded spigot and regulator plug passing through openings in a plastic housing including the regulator body. A concentric pair of tubes extend from the regulator body and can puncture a can so that the central and long tube extends into the can content and is connected to the spigot to be dispensed therefrom. The volume between the two concentric tubes is connected through a regulating valve to the gas of the carbon-dioxide cartridge. The concentric tubes can be adjustably located on the cartridge body to pierce either centrally located bungs or off-center located bungs in the can.

3,372,839
DISPENSER WITH MEANS TO PREVENT BURSTING OF THE CONTAINER
John A. Hayes, Philadelphia, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,572
2 Claims. (Cl. 222—94)

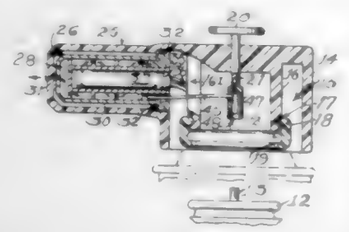


An aerosol dispenser is provided which is substantially free of exposion hazards and which has one or more storage chambers; this dispenser has a rupturable wall in the valve head at the bottom of the valve stem passage adapted to rupture and prevent the container from bursting if the dispenser is inadvertently subjected to conditions which cause an undue rise of pressure within the container.

3,372,840
HEATED AEROSOL DISPENSING ADAPTER
Jerry O. Kelley, Chicago, Ill., assignor to Cart-Trac, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 3, 1967, Ser. No. 606,997
2 Claims. (Cl. 222—146)

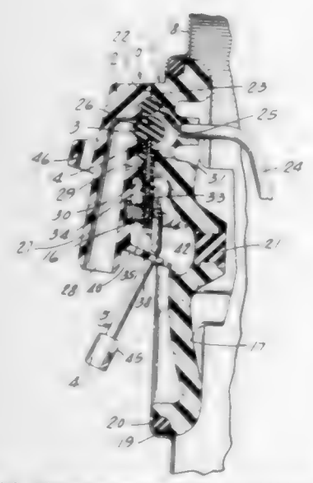
The dispensing attachment is characterized in that it comprises a one-piece head and hollow nozzle structure fitting onto an aerosol canister with a multi-chambered heat-exchanging cartridge means divided into an effluent compartment and a heater compartment, and fitting into the nozzle in a condition of abutment which aligns an escape orifice from the effluent compartment with a discharge opening in the nozzle, there being the further provision wherein a heat-exchanging wall defining the multiple com-

partments affords with the jacket of the cartridge an endwise chamber in which the escape orifice is located for



central alignment with the discharge opening of the nozzle.

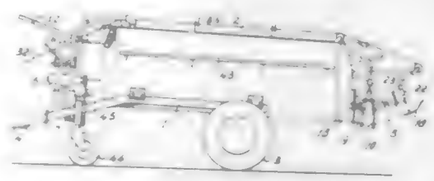
3,372,841
DISPENSING VALVE AND SPOUT STRUCTURE
Richard F. Olson, Golden Valley, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed July 13, 1966, Ser. No. 564,832
11 Claims. (Cl. 222—153)



1. A liquid dispensing valve comprising in combination:
(a) an inlet housing having a face;
(b) a spout housing having a face secured to said inlet housing face;
(c) a flow passage arranged to be connected to a supply of liquid and extending through said housings at said faces;
(d) a valve disposed in said flow passage;
(e) a lever supporting said valve, said lever being pivotally supported by said housings at said faces, and having an outer portion projecting outwardly beyond said faces;
(f) confronting means on said housings remote from said faces jointly defining split bearing means; and
(g) a manual actuator pivotably supported by said split bearing means and engageable with said outer portion of said lever.

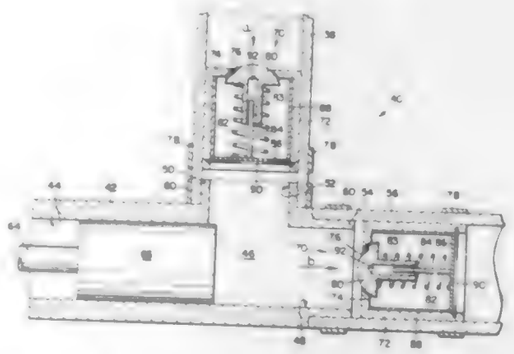
3,372,842
DEVICES FOR SPREADING LIQUIDS
Ary van der Lely, 10 Weverskade, Maasland, Netherlands
Filed Feb. 15, 1966, Ser. No. 527,555
Claims priority, application Netherlands, Mar. 5, 1965, 65—2,788
41 Claims. (Cl. 222—156)

The invention relates to a device for distributing liquids, particularly thick liquids, comprising a liquid container and a distributor which is connected with the container and to which the liquid is fed out of the container. An outlet on the container has a closing member which can be opened more or less by an adjusting mechanism. A quick action control member is connected to the closing



member so that the opening can be completely opened to prevent clogging. A suction hose can be connected to the outlet and a pump on the container is used to vary the pressure in the container. A float arrangement can be used to shut off suction if clogging occurs.

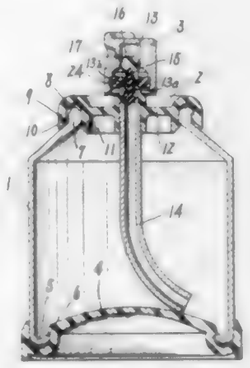
3,372,843
FOOD DISPENSING APPARATUS
Arnold Soodalter, 134 Tanglewood Drive, Longmeadow, Mass. 01106
Continuation-in-part of application Ser. No. 612,928, Jan. 31, 1967. This application Sept. 27, 1967, Ser. No. 670,964
2 Claims. (Cl. 222—309)



Apparatus for forcibly dispensing a first food substance with respect to a second food substance, the first substance being contained in a pressurized container and periodically charged therefrom and through a transfer chamber for dispensing in measured incremental amounts onto or into the second food substance, the apparatus comprising: spring-loaded valve means in each of an outlet of the pressurized container and an outlet of the transfer chamber, an air-actuated transfer cylinder having a piston reciprocable within the transfer chamber for sequentially opening one valve for drawing a charge of the first food substance from the pressurized container and into the transfer chamber and opening the other valve for expelling the charge from the transfer chamber to a nozzle, an air-actuated gate cylinder for closing the nozzle, and a photoelectric signal means for controlling and synchronizing the movements of the transfer cylinder and gate cylinder according to the positioning of the second substance relative to the nozzle.

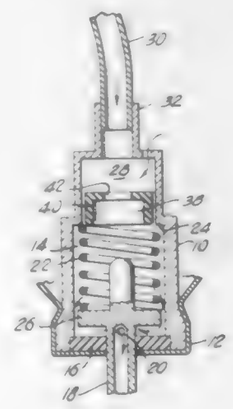
3,372,844
AEROSOL DISPENSERS HAVING AN ALUMINUM IMPACT EXTRUSION CONTAINER
Seiichi Kitabayashi, 2-2246 Nishisugamo, Toshima-ku, Tokyo, Japan
Filed Dec. 1, 1965, Ser. No. 510,829
Claims priority, application Japan, Dec. 2, 1964, 39/92,735
1 Claim. (Cl. 222—402.1)

The present application is concerned with an improvement in aerosol dispensers and particularly such a dispenser having an aluminium body with an open annular end which curves inwardly and upwardly and an annular mouth with at least one side step therein facing downwardly, a plastic bottom having an annular recess



with a side step in which is positioned the bottom end of said body and a plastic top supporting valve means and having coaxial walls with at least one side step therein engaging the side step of the body mouth for providing an aerosol dispenser container.

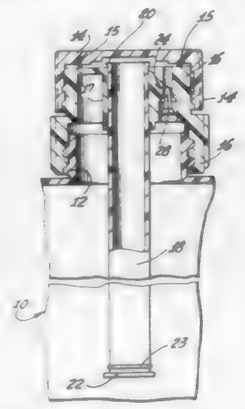
3,372,845
VALVE FOR UPRIGHT OR INVERTED USE
John Frangos, Brooklyn, N.Y., assignor to Revlon, Inc., New York, N.Y., a corporation of Delaware
Filed June 15, 1966, Ser. No. 557,835
2 Claims. (Cl. 222—402.18)



A valve for an aerosol container, said valve including a chambered portion having a perforated disc therein to seal a vapor tap located in peripheral portions of the chamber and communicating between the chamber and container. The disc, responding to gravity, seals the vapor tap only when the container is upright.

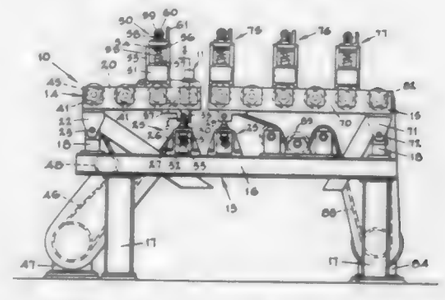
3,372,846
POURING SPOUT
Clyde C. Berkus, 8560 Tujunga Blvd., Sun Valley, Calif. 91352
Filed Aug. 29, 1966, Ser. No. 575,602
4 Claims. (Cl. 222—479)

An improved spout assembly for a plastic container, or the like, is described herein. The spout assembly of the invention is of the retractable type, and it provides a convenient combination which, in the retracted position of the spout may provide a sealing enclosure for the container, and which can be easily opened and the spout extended to facilitate pouring. A vent valve is provided in the assembly so that the liquid from the container may



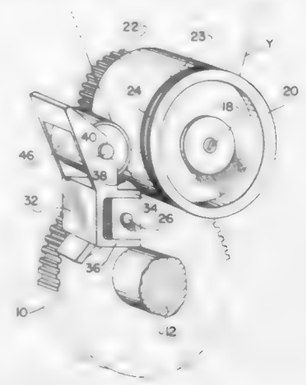
be poured smoothly and evenly through the extended spout.

3,372,847
GLASS BREAKING APPARATUS
Emmett L. Walters and William E. McCown, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed June 3, 1965, Ser. No. 460,969
12 Claims. (Cl. 225—2)



12. A method of dividing glass sheets along a desired line which comprises: scoring one surface of a sheet along said line, applying forces to said sheet to place the scored surface in tension and the opposed surface in compression, and vibrating said sheet adjacent said score line to assist in dividing the sheet.

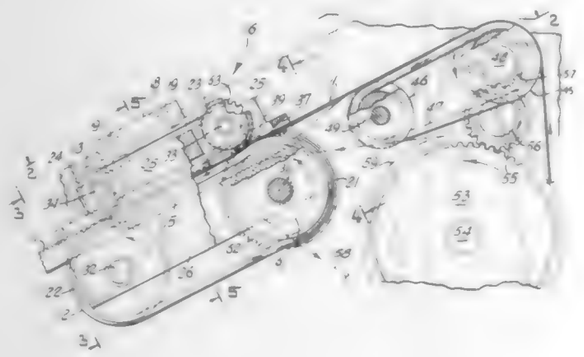
3,372,848
FEED ROLL ASSEMBLY SEPARABLE IN RESPONSE TO THREAD DEPLETION
Warren E. Macdonald, Seekonk, Mass., and Richard G. Hilbert, Smithfield, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Oct. 24, 1965, Ser. No. 504,810
16 Claims. (Cl. 226—11)



Yarn feeding apparatus in which a pinch roll engages a feed roll to define a nip zone for engaging and advanc-

ing a strand of yarn. The pinch roll mount is pivoted about a pair of axes, one parallel to the rotational axes of the rolls and the other normal thereto and passing through the nip zone, so that the tension and pressure applied to the strand of yarn remain essentially constant.

3,372,849
STRIP FEEDER FOR ADHESIVE TAPE
Joseph J. Hall, Somerville, and Jack A. Kummerow, Englishtown, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed Apr. 19, 1966, Ser. No. 543,718
25 Claims. (Cl. 226—25)



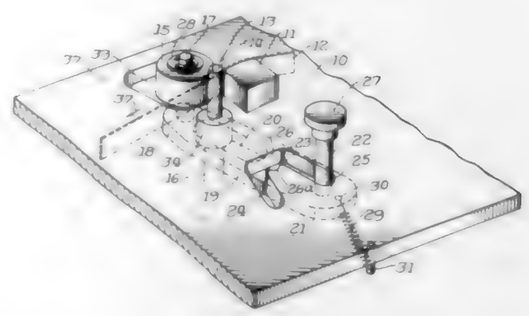
1. A feeding device for a pressure-sensitive adhesive strip which comprises inner and outer continuous feeding surfaces each driven longitudinally in a closed path, said feeding surfaces being adapted to sandwich the strip between them and move forward together in adjacent portions of their respective paths with said inner feeding surface progressively adhering lightly to a narrow longitudinal contact area of the adhesive side of the strip and said outer feeding surface progressively contacting a corresponding longitudinal area of the other side of said strip, whereby said strip is progressively advanced with said feeding surfaces as they move forward together in said adjacent portions of their paths, the said longitudinal contact areas being centrally located transversely of the strip, and a guide track extending longitudinally of said strip for guiding the strip as it is being advanced by said feeding surfaces, said inner feeding surface running within said track and said track comprising opposed side guide portions located transversely outwardly of said feeding surfaces for guiding the strip on each side of said feeding surfaces, said side guide portions being displaced inwardly away from the normal plane of contact between the strip and said feeding surfaces for causing the strip to assume a three dimensional transverse cross-section while said strip is sandwiched between said feeding surfaces; whereby said strip is caused to assume a three dimensional transverse cross-section as it is progressively advanced with said feeding surfaces, and then fed forward and away from the feeding surfaces while retaining its three dimensional cross-section.

3,372,850
TAPE DRIVING ASSEMBLY HAVING SHIFTABLE PINCH ROLLER
John W. Hipelius, Skokie, and George B. Shields, Morton Grove, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 15, 1966, Ser. No. 527,542
7 Claims. (Cl. 226—180)

1. In a mechanism for moving magnetic record tape and the like in a stream across an operative head,

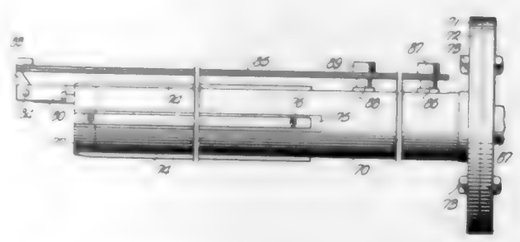
a driven assembly comprising a pair of roller members mounted to impinge therebetween the tape for continuous tractional motivation thereof,

said roller members arranged in a manner such that the position of tape impingement is disposed downstream of the position of first tangency with said assembly of thereto traveling tape, and



roller adjusting means for relatively angularly shifting said roller members to change the position of motivating tape impingement downstream of the position of first tangency with said assembly of traveling tape regardless of the direction of tape movement.

3,372,851
APPARATUS FOR ADHERING AND SEALING FOIL TO GLASS FIBER DUCT
Howard G. Wands and Sydney L. Williams, Kansas City, Mo., assignors, by mesne assignments, to Certain-Teed Saint Gobain Insulation Corporation, Ardmore, Pa., a corporation of Maryland
Original application May 4, 1962, Ser. No. 192,455, now Patent No. 3,256,122, dated June 14, 1966. Divided and this application Jan. 24, 1966, Ser. No. 544,321
10 Claims. (Cl. 228—1)

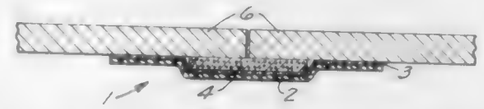


1. Apparatus for handling an insulating duct for application of a metallic foil or sheet to the external surface thereof comprising an elongate mandrel adapted to receive said insulating duct thereon, a hollow elongate insulating duct positioned on said mandrel, and an elongate flat anvil member mounted on said mandrel and extending substantially parallel to the axis thereof and spaced therefrom in such manner as to overlie a portion of the outer surface of said duct in substantial contact therewith and also form an ultrasonic welding surface for metallic foil covering the outside of said duct and said anvil.

3,372,852
TAPE
Lew Wallace Cornell, Mound, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed May 26, 1965, Ser. No. 458,908
8 Claims. (Cl. 228—50)

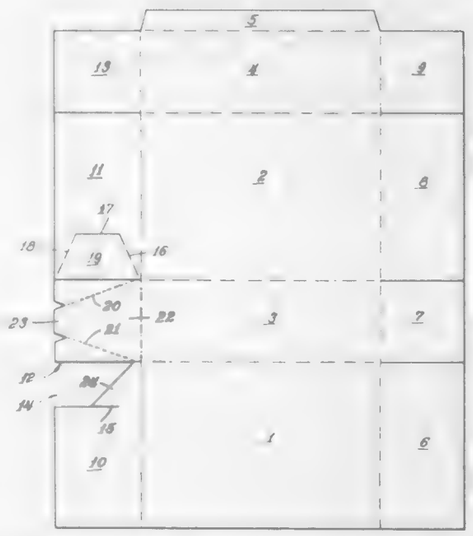
1. A unitary tape material useful as a backing means in metal welding comprising a flexible backing coated with adhesive, a strip of flexible refractory material ad-

hered to a central portion of the coated side of said backing, said refractory material comprising inorganic particles within the size range of 50 to 4,000 microns bound together with a minor amount, less than 10 percent, of the bulk volume of said refractory material of a



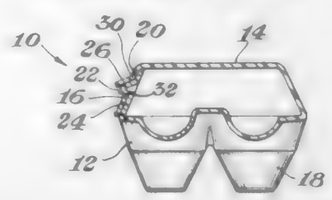
flexible organic binder, said unitary tape material being continuously flexible throughout the length thereof whereby the unitary tape material is capable of being wound into roll form for shipment and storage and subsequently unwound and adhesively applied to metal substrates of varying contours.

3,372,853
DISPENSING CARTON HAVING RECLOSEABLE POUR OPENING
George G. Rumberger, Kalamazoo, Mich., assignor to Brown Company, New York, N.Y., a corporation of Delaware
Filed May 31, 1966, Ser. No. 553,950
10 Claims. (Cl. 229—17)



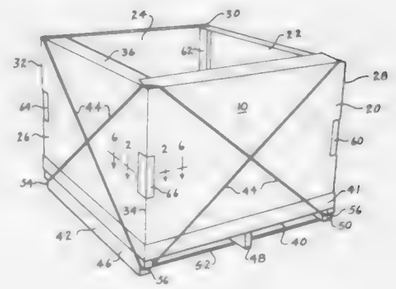
Dispensing carton having means providing a dispensing opening and a detachable reclosure flap hingedly connected at its base to a side panel of the carton.

3,372,854
LATCH ARRANGEMENT FOR EGG CARTONS
Stanley A. Marcus, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 27, 1967, Ser. No. 656,584
8 Claims. (Cl. 229—44)



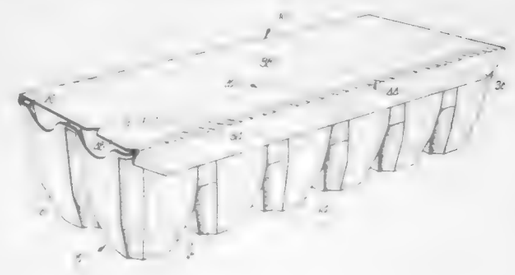
This invention concerns a latch arrangement for an egg carton having a tray, a lid, and a front flap, the front flap and lid preferably being hingedly connected to opposite sides of the tray. The latch arrangement includes lugs protruding from the outer surface of the front flap, and pivotal window panels cut within the front wall of the lid to provide apertures closed or partially closed by the window panels and matable with the lugs. The carton is secured shut by closing the lid over the tray and front flap and inserting the lugs on the front flap through the apertures in the lid.

3,372,855
REINFORCED CONTAINER
Richard Keith Smith, Benton Harbor, Mich., assignor to Twin Cities Container Corporation, Coloma, Mich., a corporation of Delaware
Filed Oct. 4, 1965, Ser. No. 492,810
5 Claims. (Cl. 229—49)



A foldable reinforced container constructed of four side panels joined integrally to one another, forming a rectangularly shaped container, having a reinforcing post disposed on the internal side of the panels at each corner thereof and a strap-like member cut from adjoining panels extending around the internal side to hold the post in the respective corner. The strap is formed by two spaced horizontal cuts, and three or four vertical score lines permit the strap to fold inwardly on the panels after the container has been formed into its final rectangular shape.

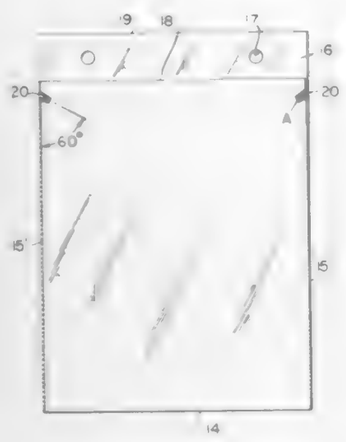
3,372,856
LID FOR EGG CARTON
Andrew Paul Erhart, Ponca City, Okla., and John A. Young, Jr., Shawnee Mission, Kans., assignors to Burd & Fletcher Company, Kansas City, Mo., a corporation of Missouri
Continuation-in-part of application Ser. No. 492,442, Oct. 4, 1965. This application May 23, 1967, Ser. No. 649,774
4 Claims. (Cl. 229—51)



The rim of a generally rectangular carton bottom provides a seat for a sheet of cardboard material having spaced, parallel fold lines therein overlying the rim and defining a marginal flap between each fold line and the adjacent edge of the sheet. The grain of the cardboard material extends at a right angle to the fold lines. Upon application of the sheet to the carton bottom to form a lid therefor, the flaps are folded downwardly into engagement with the sidewalls of the carton bottom and are attached thereto. A tear strip in the central stretch of the

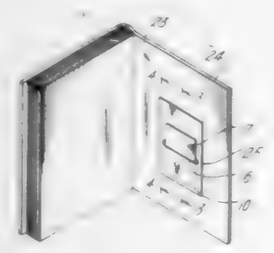
sheet between the flaps is defined by a pair of spaced series of cuts, each of the cuts being angularly disposed with respect to the grain and the fold lines.

3,372,857
SIDE SEAL BAG CONSTRUCTION WITH STRESS RELIEF NOTCH
Ralph A. Brayla, Canandaigua, N.Y., assignor to Mobil Oil Corporation, a corporation of New York
Filed Apr. 7, 1967, Ser. No. 629,164
6 Claims. (Cl. 229—53)



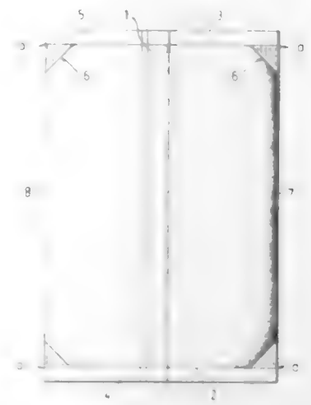
Thermoplastic bag constructions adapted for employment on automatic loading equipment which comprise a front wall and a rear wall said walls being heat seamed together along the opposite longitudinal edges thereof and said bag being opened at one end for the introduction of product therein; rupture of said heat seams during loading operations is inhibited by a stress relief notch located adjacent the upper ends of said heat seams.

3,372,858
POCKET FORMING DEVICE FOR LIBRARY CARDS
Arthur Brody, 465 Melrose Place, South Orange, N.J. 07079
Filed Mar. 31, 1965, Ser. No. 444,201
6 Claims. (Cl. 229—74)



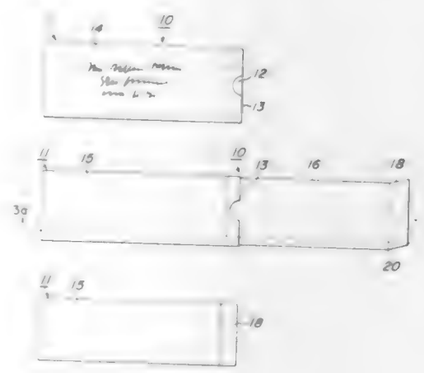
1. A device for adhesive application to a flat book surface to form a pocket for a library card, comprising a sheet bearing on its rear face a pressure-sensitive adhesive and a readily peelable covering, said sheet and covering being cut through to define an opening through which said card can pass, said covering alone being cut along lines enclosing an area having the dimensions of the desired pocket and lying directly alongside said opening, said area being thus adapted to remain covered when the rest of said covering is peeled away to expose adhesive, whereby said covered area can serve as the front wall of the pocket when said sheet is applied to said book surface.

3,372,859
PACKAGE WITH A CORNER SEAL
Carl-Axel Bjorkengren, Akarp, and Frans Wilhelm Johansson, Sandby, Sweden, assignors to AB Akerlund & Rausing, Lund, Sweden, a Swedish joint-stock company
Filed Nov. 9, 1966, Ser. No. 593,066
Claims priority, application Sweden, Dec. 9, 1965, 15,941/65
6 Claims. (Cl. 229—62)



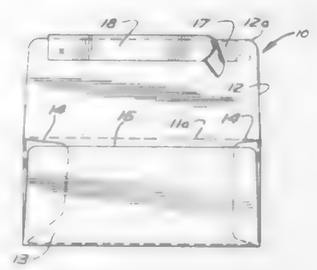
A pillow-shaped package made from a tube of thermoplastic material which is somewhat flattened when filled and transversely sealed with narrow transverse sealing zones at opposite ends of the package. The four corners of the package at the junction of the transverse sealing zones with the longitudinal edges, and which would normally be subject to fracture due to repeated bending along the line of the transverse sealing zones are strengthened by establishing an additional seal zone at each corner portion and which extends across the corner between the longitudinal edge of the package and the adjacent transverse sealing zone.

3,372,860
CORRESPONDENCE PIECE
Richard A. Giurlando, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed June 21, 1966, Ser. No. 559,142
6 Claims. (Cl. 229—68)



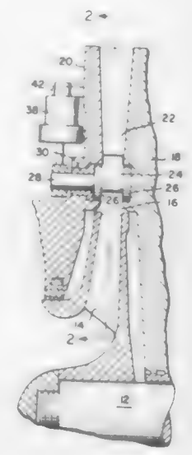
A correspondence piece comprising a markable insert slidable within its own envelope, in a preferred embodiment with a closure flap at one end of the insert to be sealed to the outside of the envelope and with a retarding flap at the other end of the markable insert to engage an envelope retarding flap to prevent complete disengagement of the insert from the envelope.

3,372,861
SELF-SEALING ENVELOPE
Edward P. Johnson and Clark A. Abrahamson, St. Paul, Minn., assignors to Quality Park Envelope Company, St. Paul, Minn., a corporation of Minnesota
Filed May 26, 1966, Ser. No. 553,185
3 Claims. (Cl. 229—80)



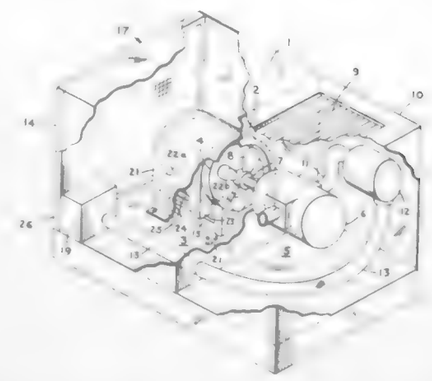
The present invention relates to an envelope construction and more particularly to self-sealing envelopes which self-sealing is provided through a particularly positive pressure sensitive adhesive. This adhesive is applied to this particular envelope along one sealing area adjacent the edge of a closure flap and is overlapped onto the actual edge of the flap. The area adjacent the flap is protected with a quick release cover thereover that the adhesive located on the edge of the flap itself is exposed such that the flap may be held open to facilitate filling of the envelope.

3,372,862
CENTRIFUGAL COMPRESSOR
Carl F. Koenig III, Montgomery, Ohio, assignor to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,865
2 Claims. (Cl. 230—114)



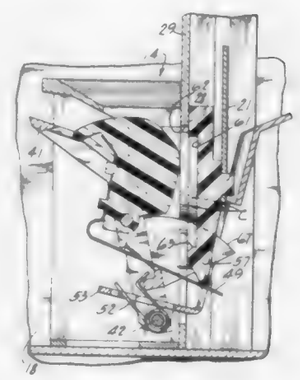
A centrifugal compressor is provided with fixed and movable diffuser vanes disposed around the periphery of its impeller. The movable diffuser vanes are in the form of airfoils pivoted and free to rotate about axes in order to provide variable throat areas between the leading and trailing edges of adjacent vanes. The vanes are pivoted so that this throat area is directly proportional to flow rate and inversely proportional to absolute discharge velocity so that optimum pressure and efficiency are obtained. The movable vanes may be provided with dampers, and may be connected to control an outlet by-pass valve in order to prevent the occurrence of a surge condition.

3,372,863
ENCLOSED MOTOR DRIVEN COMPRESSOR UNIT
Carl Bloom, Springfield, Mass., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Apr. 26, 1966, Ser. No. 545,311
6 Claims. (Cl. 230—117)



A cooling means for an enclosed fan cooled industrial compressor and motor unit wherein the enclosure for the unit is divided by means of a partition into a first compartment containing the motor and a second compartment containing the compressor, the partition being provided with an opening through which the driving shaft of the motor is connected to the driven shaft of the compressor and in which a fan is to be mounted for rotation and to draw air from an opening in the first compartment and over said motor and discharge the same through said second compartment, and the suction of the compressor in the second compartment receives an independent source of cooler denser filtered air from outside the enclosure.

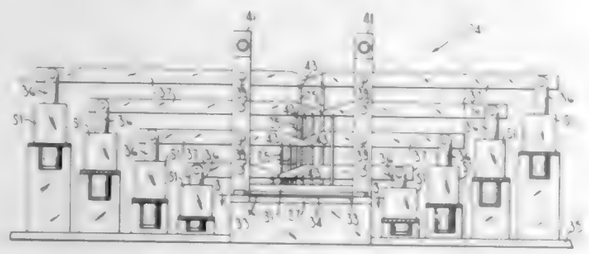
3,372,864
COIN RETURN MECHANISM
Henry C. Kovar, Osseo, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Oct. 31, 1966, Ser. No. 590,912
14 Claims. (Cl. 232—57.5)



1. A coin return mechanism, comprising:
(a) means defining a hopper directed to receive a rejected coin;
(b) a pivoted coin support member disposed beneath said hopper for extending beneath any coins therein;
(c) a transfer member pivoted on said pivoted coin support member and defining one side of a coin pocket therewith;
(d) a pivoted check member defining an opposite side of said coin pocket; and

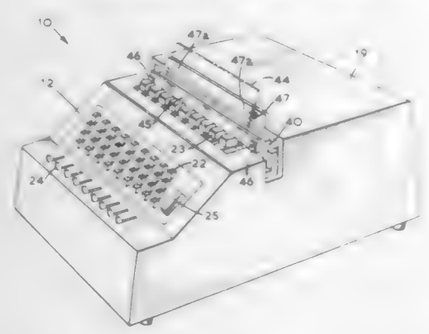
(e) a manually movable coin carrier adapted at one position to pivot said check member in a direction away from the coin, to pivot said transfer member toward the coin to effect transfer of the coin from said pocket into said carrier, and to effect pivoting of said coin support member away from said pocket to accommodate temporarily an additional number of coins, said carrier being movable to a second carrier position where any coin in said carrier is accessible.

3,372,865
STENOGRAPHIC APPARATUS PROVIDING PUNCHED TAPE RECORD
Frank L. Pellegrini, Crestwood, Mo., assignor to Stenomation Incorporated, St. Louis, Mo., a corporation of Missouri
Filed Mar. 30, 1966, Ser. No. 538,644
10 Claims. (Cl. 234—36)



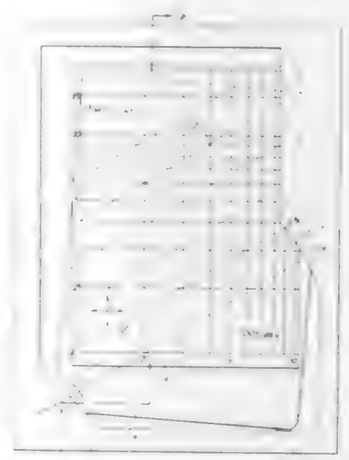
The stenographic apparatus disclosed herein employs a plurality of punches which are indepently operable by respective drive means to punch distinctive patterns of holes in a paper tape. Each of the punches is controlled by a respective key of a stenographic machine. Thus, when a preselected combination of keys are operated, the corresponding punches are operated to punch their respective patterns in a predetermined section of the tape. The apparatus also includes means for advancing the tape to place a new, unpunched section of tape in position to be operated on by the punches when previously operated keys are released. In this way, the apparatus provides a punched record which is readable for digital computing equipment for automatically preparing a printed transcription of the record.

3,372,866
KEYPUNCH MACHINE
Francis Allen McLean, Nixon Knowlton, and Nicholas E. Steiner, Hawkesbury, Ontario, Canada, assignors, by mesne assignments, to Grant Darbyson, Ontario, Canada
Filed Oct. 18, 1965, Ser. No. 496,952
11 Claims. (Cl. 234—123)



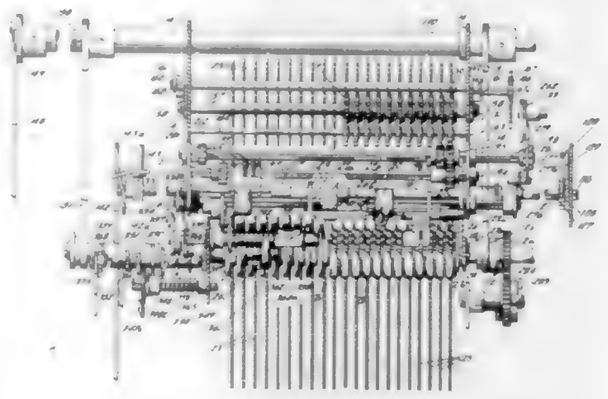
An electric keypunch machine for cutting notches in the edges of tabulating cards. Cards to be punched are placed on a reciprocable card table of the machine. The cards are punched by means of pivotable punches each of which is controlled by a key. When a key is depressed, the corresponding punch is held stationary, and as the punches are in the path of the card table the card is cut as the card table reciprocates. If the key is not depressed, the punch pivots freely upon engagement with the card and the card is not cut.

3,372,867
DATA INDICATING APPARATUS
Wilhelm F. Braun, Haldenrain 6, Lucerne, Switzerland
Filed Aug. 31, 1966, Ser. No. 576,261
Claims priority, application Switzerland, Sept. 2, 1965, 12,376/65
9 Claims. (Cl. 235—61)



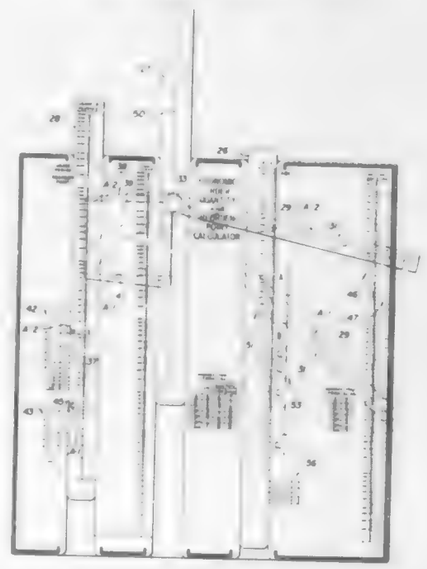
A calculating device comprising at least two plates which are movable with respect to each other. One of the two plates carries thereon logorithmic chart coordinates. The other plate has drawn thereon a plurality of straight parallel lines. The latter plate is rotatable with respect to the former plate, both plates being preferably made of plastic transparent material. This device permits the determination of exponential functions, as well as the determination of a P-value (price) as a function of any K-value (capacity) of a plant from a relationship and the exponent. The device, furthermore, furnishes the graphic representation of the relationship of the two values over the entire range of the logarithmic system.

3,372,868
DIVISION CONTROL MEANS
Herman Gang, Morris Plains, N.J., assignor to Litton Business Systems, Inc., a corporation of Delaware
Continuation of application Ser. No. 364,621, May 4, 1964. This application Mar. 31, 1966, Ser. No. 539,222
15 Claims. (Cl. 235—63)



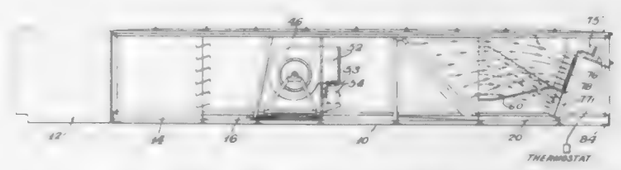
1. In a calculating machine having a register:
cyclic rotary digital actuators for said register rotatable a full turn in each cycle; idly operable during a part of each cycle, and adjustable for additive or for subtractive registering operation; and
division control means including:
means for detecting an overdraft in said register during subtractive registration by said actuators;
normally disabled means operable during idle operation of said actuators to adjust said actuators for additive operation; and
means controlled by said overdraft detecting means for enabling said normally disabled means.

3,372,869
CALCULATOR
René P. Motte, William Wraith III, and Renato B. Cucchi, all of Apartado 1229, Lima, Peru
Filed June 13, 1966, Ser. No. 557,095
10 Claims. (Cl. 235—70)



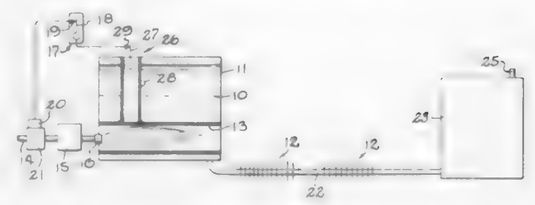
A slide rule type calculator for finding economic order quantities including a base having a first and second spaced slide members disposed in slots formed therein and intersected by an isopleth member pivotally mounted to one of the slides. The calculator carries scales representing the annual useage values and reorder quantities, useage period and reorder points, economic order quantities and K values.

3,372,870
AIR TREATING UNIT
John W. Norris, Marshalltown, and Wayne F. Sieverding, Union Grove Lake, Iowa, assignors to Lennox Industries Inc., a corporation of Iowa
Original application Dec. 28, 1964, Ser. No. 421,427, now Patent No. 3,324,782, dated June 13, 1967. Divided and this application Feb. 20, 1967, Ser. No. 632,480
3 Claims. (Cl. 236—13)



A mixing damper assembly including a housing having side-by-side inlets for warm air and for cool air and baffle means within the housing for directing warm air in a separate path above the cool air. Dampers are provided in the plurality of side-by-side outlets for regulating the temperature of the air discharged through the outlets.

3,372,871
HOT WATER HEATING SYSTEM
Richard T. Pfluger, Rockford, Ill., assignor to Atwood Vacuum Machine Company, Rockford, Ill.
Filed Apr. 1, 1966, Ser. No. 539,551
10 Claims. (Cl. 237—8)



1. In a heating system, the combination of, a boiler having a chamber within which to heat liquid, a radiating device for transferring heat from the liquid to the surrounding atmosphere and thereby cooling the liquid, a reservoir open to the atmosphere for storing the cooled liquid, a conduit leading from said chamber to said radiating device, and then to said reservoir, heating mechanism associated with said boiler for heating the liquid in said chamber and for increasing the pressure of the vapor therein whereby the pressure exerted on the liquid by the vapor forces the liquid in one direction through said conduit from said chamber to said radiating device, and then to said reservoir, and control means operable in response to the flow of liquid from said chamber to deactivate said heating mechanism whereby the vapor within said chamber cools and condenses to form a vacuum therein for drawing the liquid in the opposite direction through said conduit from said reservoir to said chamber.

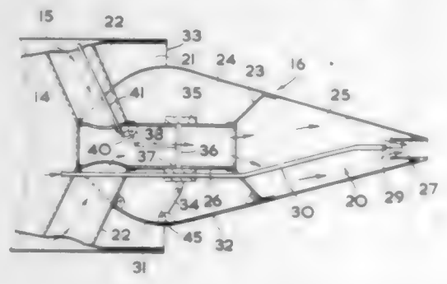
3,372,872
ARTIFICIAL SNOW PRODUCTION
George F. Le Bus III, 1801 Ems Road W., Fort Worth, Tex. 76116; James L. Le Bus, 1525 Melody, Wichita Falls, Tex. 76302; and George F. Le Bus, Jr., Gen. Del., Taos, N. Mex. 87571
Filed July 26, 1966, Ser. No. 567,967
6 Claims. (Cl. 239—2)

4. A method for producing artificial snow, said method comprising: heating one supply of water to a temperature and maintaining a pressure thereon to insure the formation of steam, at least when the pressure is suddenly reduced to atmospheric; pumping said heated water and a supply of cold water in separate conduits to selected outlet locations; mixing said hot and cold water with suitable nozzle means, while simultaneously discharging the mixture into the atmosphere and onto a selected ground area.

3,372,873
VORTEX PRODUCING APPARATUS
Leonard Weiss, 8721 Bay Parkway, Brooklyn, N.Y. 11214, and Theodore B. Meyerstein, 166—10 Powels Cove Blvd., Beechhurst, N.Y.
Filed June 24, 1966, Ser. No. 560,329
20 Claims. (Cl. 239—99)

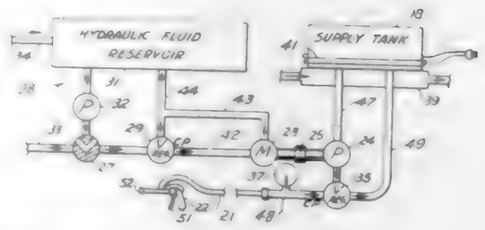
1. Apparatus for producing a ring vortex comprising, in combination, means defining an enclosure having a discharge orifice therein, a support member positioned within said enclosure for movement with respect thereto toward said orifice, a flexible diaphragm carried by said support member, a supply of vortex producing material, means for inserting said material into said enclosure, and means for moving said support member toward said orifice and for thereafter abruptly arresting said support member, to thereby flex said diaphragm and expel said material from said orifice in the form of a ring vortex.

3,372,874
JET NOZZLE
Francis Jeffrey Colville, Sutton-in-Ashfield, and Norman Roberts, Hucknall, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Oct. 18, 1965, Ser. No. 497,121
Claims priority, application Great Britain, Nov. 9, 1964, 45,670/64
9 Claims. (Cl. 239—127.3)



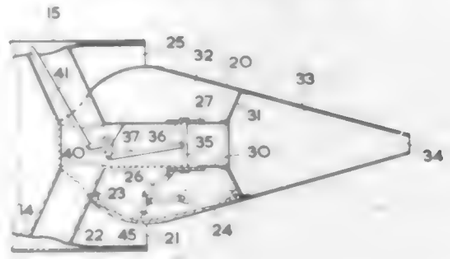
A jet nozzle assembly for use on gas turbine engines employed in supersonic aircraft propulsion, the jet nozzle assembly including a cylindrical outer casing and an inner body mounted coaxially within the outer casing and spaced therefrom to define an annular space through which jet gases flow, the inner body having an opening at its downstream end for discharging of cooling air, the cooling air being supplied to the inner body by conduit means extending through and sealed from the annular space. An additional nozzle is provided within the inner body and is disposed therein and connected to a source of high pressure fluid for inducing flow of cooling air through the inner body and out of its downstream opening.

3,372,875
COMBINATION CLEANING FLUID NOZZLE AND HYDRAULICALLY OPERATED HOPPER FOR REFUSE COLLECTING APPARATUS
Anthony J. Torrey, 874 Edgell Road, Framingham, Mass. 01701
Filed Oct. 21, 1965, Ser. No. 499,453
14 Claims. (Cl. 239—129)



A refuse collection vehicle with a hydraulically operated lift mechanism and a hydraulically powered supply system which pumps cleaning fluid between a supply vessel and the manually controlled nozzle on a flexible hose. A selectively operable diverter valve alternately directs hydraulic fluid from the vehicle's hydraulic fluid pressure system to either the lift mechanism or the cleaning fluid supply system.

3,372,876
JET NOZZLE
Francis Jeffrey Colville, Sutton-in-Ashfield, and Norman Roberts, Hucknall, England, assignors to Rolls-Royce Limited, Derby, England a British Company
Filed Oct. 23, 1965, Ser. No. 502,864
Claims priority, application Great Britain, Nov. 6, 1964, 45,424/64
6 Claims. (Cl. 239—265.35)

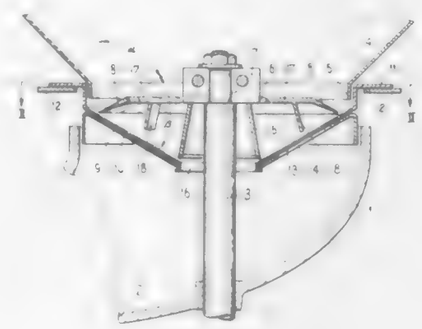


A jet nozzle assembly for aircraft gas turbine engines, the assembly including a cylindrical outer casing and a coaxially mounted hol ow inner body which define an annular space therebetween, the outer casing being movable relative to the inner body selectively to form a convergent or a convergent-divergent nozzle, the inner body having movable parts to vary the shape of said space. The inner body has means for compensating for pressure differences across the movable parts to minimize the force required to move the movable parts, has a downstream end aperture, and its upstream end communicates with a source of cooling fluid to cool the interior of the inner body.

3,372,877
APPARATUS FOR SPREADING POWDERED OR GRANULAR FERTILIZERS
Herbert Vissers, Nieuw Vennep, Netherlands, assignor to Landbouwwerktuigen- en Machinefabriek H. Vissers N.V., Netherlands, a company of the Netherlands
Filed Apr. 8, 1966, Ser. No. 541,232
Claims priority, application Netherlands, May 3, 1965, 65—5,595
3 Claims. (Cl. 239—659)

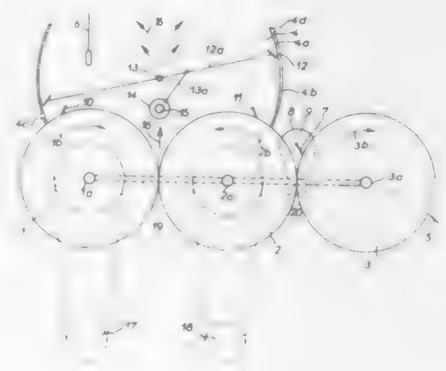
The invention relates to an apparatus for spreading powdered or granular fertilizers, provided with a storage hopper, supported by a travelling frame and having a

bowl arranged below the discharge mouth of the hopper, said bowl having a spout provided with at least one outlet-hole and extending opposite to the travelling direction of the frame, driving means being provided for angularly reciprocating said bowl with said spout on a vertical



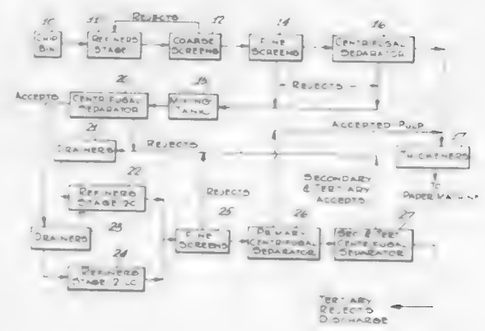
shaft and said shaft carrying agitator means located in the lower part of the hopper, two super-imposed discs provided with passage holes being located between the outlet mouth of the hopper and the bowl and one of said discs being angularly adjustable with respect to the other disc.

3,372,878
GRINDING OF MATERIALS IN GRINDERS HAVING ROLLS WITH STEPWISE-INCREASING SPEEDS
André Louis Verdier, 6 Ave. Daniel-Lesueur, Paris, Seine, France
Filed Sept. 15, 1964, Ser. No. 396,690
Claims priority, application France, Sept. 20, 1963, 948,254
12 Claims. (Cl. 241—16)



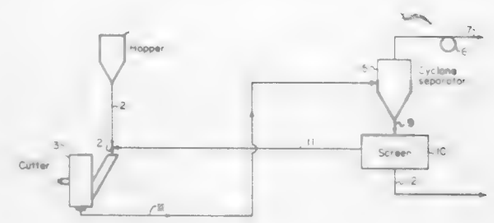
1. A process for the preparation of pigments by the method of liquid substitution known as the "flushing process" using a grinder having a charging hopper adapted to receive material and a series of rolls rotating at speeds increasing stepwise from roll to roll, pressed one against the other and between which the material passes, comprising the steps of:
(a) introducing into the hopper a composition consisting of a mixture of water and precipitated pigments together with the substitution liquid,
(b) causing the composition to pass between the rolls and allowing it to return to the hopper in a closed circuit while adjusting the temperature, the speed and the pressure of the rolls one against the other in concomitance, for a time sufficient for the composition to become a paste constituted by a dispersion of the pigments in the substitution liquid and having the desired quality of dispersion, and
(c) removing the paste by causing it to pass between the rolls for the last time and detaching it from the last roll of the series.

3,372,879
PROCESS FOR MAKING A MECHANICAL PULP FROM WOOD CHIPS
Howard W. H. Jones and Donald E. Helleur, Grand'Mere, Quebec, Canada, assignors to Consolidated Paper (Bahamas) Limited, Nassau, Bahamas
Continuation-in-part of application Ser. No. 170,110, Jan. 31, 1962. This application Aug. 18, 1966, Ser. No. 573,381
10 Claims. (Cl. 241—24)



1. A process for the treatment of wood chips comprising the steps of:
disc refining wood chips,
separating the disc refined wood material into a primary acceptable pulp and a non-acceptable wood material,
separating the non-acceptable wood material into a coarse fraction and a less coarse fraction,
disc refining the coarse and less coarse fractions separately,
combining the disc refined coarse and less coarse fractions,
separating the combined fractions of wood material into a secondary acceptable pulp and a primary reject material, and
blending said primary and secondary acceptable pulps.

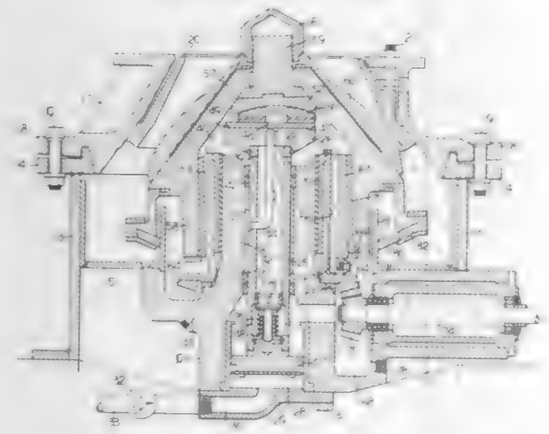
3,372,880
PROCESS FOR THE PRODUCTION OF POLYMER POWDER
Kim L. O'Hara, Odessa, Tex., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Apr. 14, 1966, Ser. No. 542,559
5 Claims. (Cl. 241—30)



1. A process for producing a powder from substantially crystalline thermoplastic pellets which comprises the steps of:
(1) continuously applying and maintaining a shearing force to said pellets, and

(2) recovering from step (1) a powder containing no more than 35 weight percent oversized material having a particle size of greater than 20 mesh and no more than 1 weight percent fines having a particle size of less than 100 mesh.

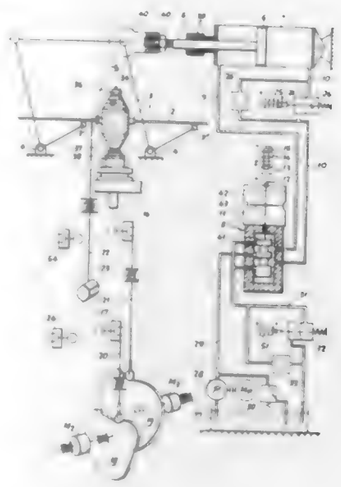
3,372,881
SPIDERLESS GYRATORY CRUSHER WITH RELIEF VALVE SYSTEM
Heinz W. Winter, Wauwatosa, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 25, 1966, Ser. No. 544,872
4 Claims. (Cl. 241—208)



1. In a spiderless gyratory crusher having a frame, a vertical crusher post slidably supported by said frame, an overhanging concave ring horizontally supported in a fixed position within the upper portion of said frame concentrically above said crusher post, a crusher head mounted on top of said crusher post with a step bearing assembly therebetween and disposed within the space defined by the concave ring, a hydraulically operated piston assembly supporting the lower end of said crusher post and crusher head to vary the opening defined between said concave ring and said crusher head, a check valve for releasing the hydraulic support from said piston assembly upon a sudden increase in pressure, an eccentric sleeve member rotatably supported on said frame concentrically around said crusher post, a skirt member rigidly supported to said crusher head and extending downward to engage the eccentric circumference of said eccentric member and to form a conical chamber between said crusher head and said eccentric member, and a means for rotating said eccentric sleeve member, in combination therewith, the improvement comprising: valve means for quickly releasing the hydraulic pressure in said conical chamber upon a sudden increase in said pressure, and valve means for slowly releasing excessive hydraulic pressure in said conical chamber whenever said pressure exceeds a predetermined value.

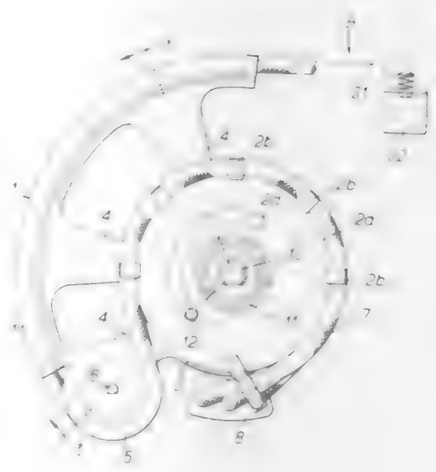
3,372,882
METHOD OF CONTROLLING THE RING RAIL MOVEMENT OF A RING TWISTING MACHINE
Felix Andreas Graf, Winterthur, Switzerland, assignor to Maschinenfabrik Rieter A.G., Winterthur, Switzerland, a corporation of Switzerland
Original application Dec. 12, 1962, Ser. No. 244,109. Divided and this application Aug. 17, 1965, Ser. No. 480,437
Claims priority, application Switzerland, Feb. 26, 1962, 2,290/62
8 Claims. (Cl. 242—26.1)

The method of winding the filament packages includes an initial step of winding a small number of very steep windings on the spindle. Thereafter, the knotting windings are wound onto the spindle and, following that, a



small number of very steep windings are wound on the spindle. The package proper is then wound onto the spindle.

3,372,883
APPARATUS FOR DRAWING IN AND OUT DENTAL HOSES
Sadayasu Ota, 19 Momoyama Tsutsui Igacho, Fushimi-ku, Kyoto, Japan
Filed Aug. 22, 1966, Ser. No. 574,000
Claims priority, application Japan, Dec. 10, 1965, 40/75,961
7 Claims. (Cl. 242—47.5)

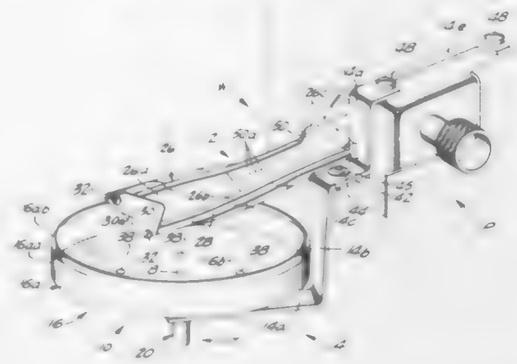


This disclosure relates to rotatable apparatus for paying out and drawing in dental hoses in dental accessory equipment. The apparatus includes rotatable means mounted on an axis and having a dental hose or the like mounted with a portion thereof extending in contact with the rotatable means. Means associated with the rotatable means and immovable relative thereto supports another portion of the hose in contact therewith. Means are included for biasing the rotatable means to rotate in one direction about the axis so as to move the hose in the same direction in sliding contact with the rotatable means, thereby drawing in the hose.

3,372,884
AUTOMATIC TAPE THREADING MACHINE
Suketada Nagano, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Mar. 11, 1966, Ser. No. 533,685
9 Claims. (Cl. 242—55.12)

1. An automatic tape threading machine comprising a flanged reel, a spindle mounting said reel for rotation, a tape wound upon said reel, a spool having means on its periphery for attaching itself to the end of said tape, a magnetic head, and an arm pivotally mounting said spool to draw tape from said reel and bring it into operative engagement with said magnetic head.

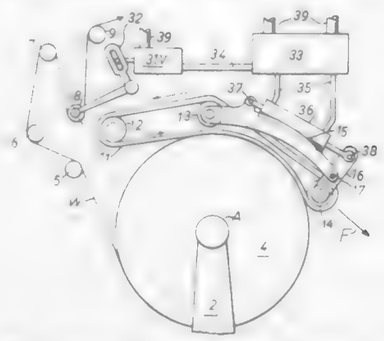
3,372,885
TAPE WINDER
William A. Nichols, 5617 Hawthorne Ave., and Ralph E. Simpson, 9815 Monte Vista Ave., both of Montclair, Calif. 91763
Continuation of application Ser. No. 467,229, June 28, 1965. This application Aug. 21, 1967, Ser. No. 662,187
10 Claims. (Cl. 242—55.21)



A tape winding apparatus having turntable means for receiving a longitudinally moving tape in edge standing orientation on the floor thereof, and guide means guiding the tape to the turntable means, said guide means guiding the tape from a horizontal position to a vertical position and imparting a turn to the tape to substantially change the direction of movement of the tape for delivery to the turntable means. The longitudinally moving tape transmits a rotative force to an upstanding wall on the turntable as it is delivered thereto whereby the tape is wound into spiralling coils which build inwardly to form a roll.

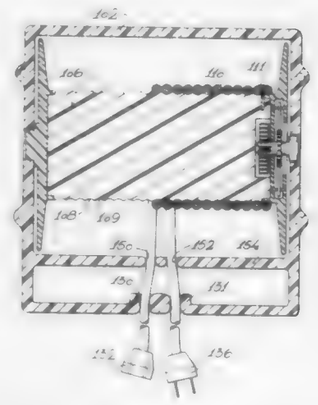
3,372,886
PAPER REEL TENSION CONTROL
John J. McDonald, Park Ridge, N.J., assignor to R. Hoe & Co. Inc., New York, N.Y., a corporation of New York
Filed May 18, 1966, Ser. No. 551,050
2 Claims. (Cl. 242—75.42)

A device for controlling the tension in a paper web having a belt driven about an idler pulley and which is in contact with the periphery of a web roll. Means for exerting a force on the idler pulley in response to reactions of a web tension sensor and in a direction substantially parallel to the belt course leading from the web roll, resulting in a change in belt tension and consequently



a shift in belt pitchline. This in turn causes minute variations in the speed of thed riven belt to thereby vary the torque exerted by the belt on the web roll which ultimately affects the tension of the web.

3,372,887
RETRACTABLE CORD DEVICE
Shaul Ludany, 431 Riverside Drive, New York, N.Y. 10025
Filed Mar. 23, 1966, Ser. No. 536,695
4 Claims. (Cl. 242—107.13)

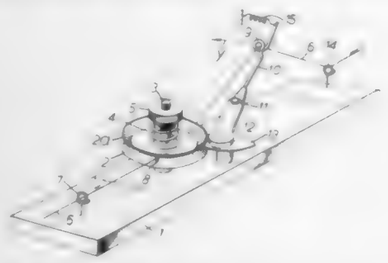


A retractable cord device comprises a housing, a spring-loaded drum rotatably mounted within the housing, a cord adapted to be wound upon the drum, the drum being formed with a spiral groove for the reception of the cord. The housing is formed with a shaped orifice through which the cord passes as it is unwound from the drum, the orifice including an inwardly extending annular lip which snugly engages the cord and applies a resistance to the passage of the cord. In a modification, the mid-point of the cord is fixed to the drum and the two ends of the cord pass through a pair of adjacently-disposed orifices. A cord guide is provided between the orifices and the drum for displacing the cord ends from the perpendicular as they pass through the orifices.

3,372,888
TENSION CONTROL FOR TEXTILE MACHINES
Pierre Charles Eppendahl, Lyon, France, assignor to Thermiguides S.A., Lyon, France, a French company
Filed Aug. 29, 1966, Ser. No. 575,806
Claims priority, application France, Sept. 15, 1965, 46,396, Patent 1,457,631
6 Claims. (Cl. 242—150)

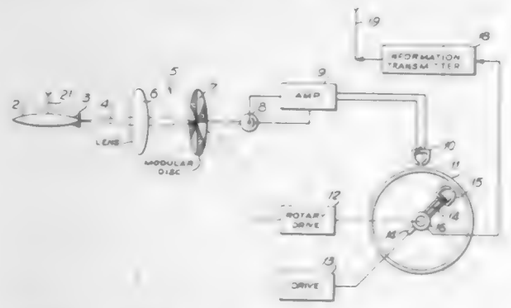
1. Mechanism for controlling the tension of thread in textile machines, comprising fixed and movable friction members between which the thread passes, the movable friction member including at least a part formed of magnetic material, and means for applying a force to the

movable member urging it towards the fixed friction member and for controlling that force, comprising spring means urging the movable friction member towards the fixed friction member, a pivoted tension-sensing lever on which the thread acts after passing between the fixed and movable friction members, and a permanent magnet connected to the pivoted lever and movable therewith in relation to the said part of magnetic material so as to modify by magnetic force the pressure applied by the movable friction member to the thread lying between it and the fixed friction members wherein, during its movement with



the pivoted lever the magnet travels continuously in parallel relationship to the said part of magnetic material so that the magnetic flux between said magnet and the magnetic material imposes on the magnet no force tending to cause pivotal movement of the pivoted lever but the magnet nevertheless imposes on the magnetic material included in the movable friction member a magnetic force which tends to move that member relatively to the fixed friction member and which varies with movement of the pivoted lever to vary the pressure applied to the thread between the movable and fixed friction members.

3,372,889
ROLLING MISSILE, REMOTE CONTROL SYSTEM
Joseph F. Menke, Heidelberg, Germany, assignor to Eltro G.m.b.H. & Co., Heidelberg, Germany
Continuation-in-part of application Ser. No. 381,750, July 10, 1964. This application Nov. 23, 1966, Ser. No. 596,615
2 Claims. (Cl. 244—3.14)



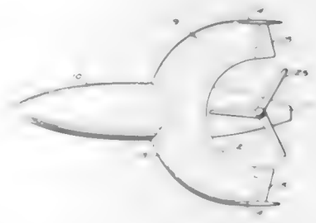
A rolling missile is tracked by goniometer which develops guidance signals which are transmitted back to the missile after a suitable delay to account for the rolling of the missile. The delay is provided by temporarily storing the signal developed by the goniometer.

3,372,890
DATA PROCESSOR FOR CIRCULAR SCANNING TRACKING SYSTEM
James R. Bogard, Roger A. Gaskill, and George Lamar Harmon, Orange County, Fla., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed Feb. 4, 1966, Ser. No. 525,090
24 Claims. (Cl. 244—3.17)

This invention relates to a novel data processor particularly adapted for utilization in a closed loop correlation tracking system which utilizes a stable iterative process for converting tracking error signals into stable yaw, pitch and roll error signals. These error signals are employed by a three axis servo to cause the difference be-

tween the line of sight axis and the boresight axis to converge to zero, thus to keep the tracking system aligned in a desired manner with a chosen target.

3,372,891
MEANS AND METHOD OF ROTOR AUGMENTED LIFT FOR AIRPLANES
Frank S. Malvestuto, Jr., Granada Hills, Calif. (% Malvestuto Aero Space, 7333 Deering Ave., Canoga Park, Calif. 91303)
Filed Oct. 22, 1965, Ser. No. 500,719
3 Claims. (Cl. 244—12)



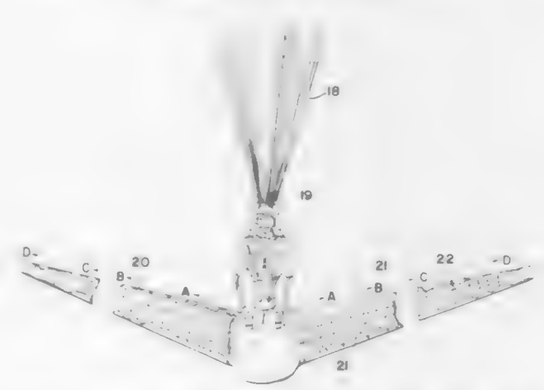
An aircraft having a wing provided with a semicircular recess in its trailing edge. A powered rotor rotatable about the axis of the recess and having blades whose tips extend close to the semicircular edge below the upper surface of the wing. The rotor produces direct upward thrust on the aircraft and also creates low pressure over the wing and higher pressure below the wing to augment the direct upward thrust of the rotor. Centrifugally moving air impinges on the edge surface of the recess to produce forward thrust.

3,372,892
RETRACTABLE WHEEL MOUNTINGS
Charles William May, St. Albans, and Edward Charles Poncia, Hatfield, England, assignors to Hawker Siddeley Dynamics Limited, Hatfield, England, a British company
Filed Jan. 19, 1966, Ser. No. 521,678
Claims priority, application Great Britain, Jan. 17, 1966, 2,215/65
14 Claims. (Cl. 244—102)

The retractable ground wheel mounting has an outrigger member projecting laterally from the aircraft fuselage which is swingable inwardly around a vertical axis near its inner end, with a leg extending downwardly from its outer end connected thereto by a knee joint whose pivotal axis lies fore-and-aft when the mounting is extended; also a wheel assembly is carried at the lower end of the leg; and means are provided whereby when the outrigger member is swung inwardly into parallelism with the fore-and-aft line of the vehicle the leg will turn outwardly and upwardly about the knee joint until the joint is nearly straightened, a fixed-length rigid strut being coupled at one end by a universal joint to the leg and at the other end by a second universal joint to the fuselage to accom-

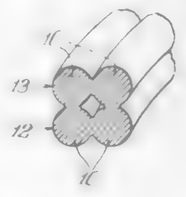
plish the turning of the leg about the knee joint and to act as a lateral bracing member when the mounting is extended.

3,372,893
AIR TO GROUND DESCENT MEANS
Agnew E. Larsen, New Britain, and Robert F. Le Vino, Huntingdon Valley, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Sept. 7, 1965, Ser. No. 485,654
4 Claims. (Cl. 244—138)



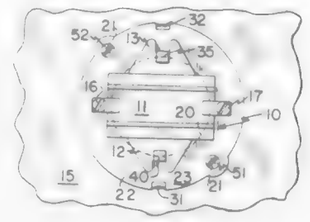
A combination of a parachute attached to, and working in connection with, an inflatable aircraft having an inflation means attached thereto.

3,372,894
TIRE BEADS AND METHODS OF MAKING SAME
Thomas H. Pearce, Niles, Mich., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Nov. 5, 1965, Ser. No. 506,498
3 Claims. (Cl. 245—1.5)



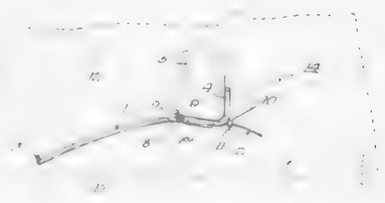
Tire beads of round wire disposed in superposed touching layers with the successive convolutions of the wire in the layers being in side by side touching relation, and in which the touching portions of the wire are homogeneously joined.

3,372,895
MOUNTING APPARATUS
Azmi Kaya, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Nov. 24, 1965, Ser. No. 509,495
10 Claims. (Cl. 248—27)



Thermostat mounting apparatus which includes two members constructed so that one can be used alone with the thermostat to provide "insertion mounting" of the thermostat, they can be used together in one relationship with the thermostat to provide "flush mounting" thereof, and they can be used together in another relationship with the thermostat to provide "standoff mounting" thereof.

3,372,896
PORTABLE TELEVISION RECEIVING SET SUPPORT
Walter P. Myers, River Forest, and Joseph J. Orlof, Wheaton, Ill. (both of 2958 W. Carroll Ave., Chicago, Ill. 60612)
Filed May 31, 1966, Ser. No. 553,755
1 Claim. (Cl. 248—350)

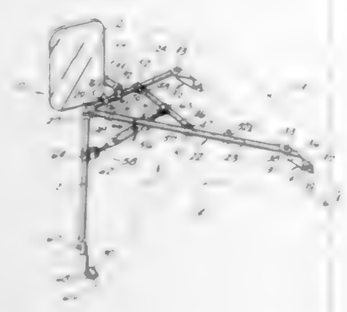


A support advantageous for supporting television receiving sets within an auotmobile body having bowed and opposed telescopically interengaged relatively longitudinally adjustable U-shaped frames one of which has upstanding stops on its ends and a transversely disposed relatively inwardly spaced stop rod adjustably engageable over, with and along its opposite sides, and the other being constructed of material having a limited degree of flexibility.

3,372,897
REAR VIEW MIRROR
Edward R. Lee, Ceresco, Mich., assignor to S. H. Leggitt Company, Inc., Marshall, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 454,476, May 10, 1965. This application Mar. 28, 1966, Ser. No. 538,010
The portion of the term of the patent subsequent to July 5, 1983, has been disclaimed
11 Claims. (Cl. 248—480)

A mirror construction for an automotive vehicle having a frame including a pair of divergent substantially horizontal arms joined adjacent one end thereof, the other end of the arms having brackets thereon engageable between the hood and fender of the vehicle. A cross member extends between the arms for interconnecting same.

The upper end of a downwardly and inwardly extending leg is pivotally connected to the joined ends of the arm, the lower end of the leg having a bracket thereon engageable with the edge of the adjacent wheel opening. Ten-

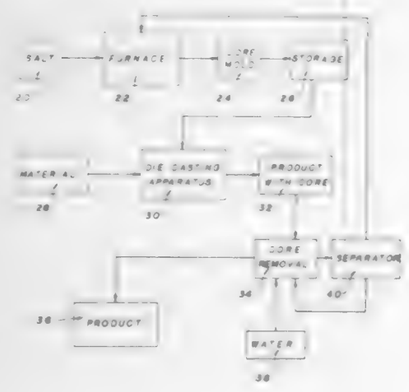


sion means interconnect the frame and the leg to cause the mirror frame to securely grip the vehicle. Arm means are connected to the frame means, which arm means has a mirror secured at one end thereof.

3,372,898
METAL CASTING SYSTEM WITH ANHYDROUS CALCIUM CHLORIDE CORE

Merlyn E. Townsend, Concord, Eugene J. Guelda, Oakland, and Donald G. La Rue, Orinda, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Original application May 24, 1965, Ser. No. 458,066, now Patent No. 3,311,956, dated Apr. 4, 1967. Divided and this application July 18, 1966, Ser. No. 575,206
2 Claims. (Cl. 249—61)



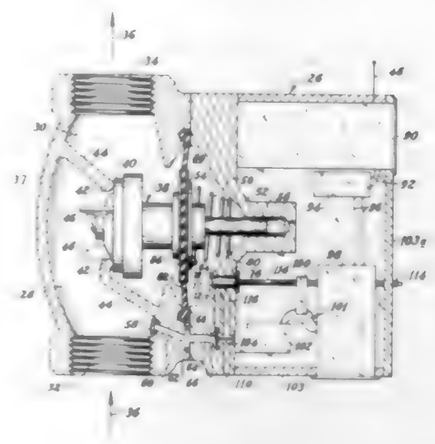
A metal casting system including a mold in which is positioned a fused cast core consisting essentially of anhydrous calcium chloride.

3,372,899
RADIO ACTUATED AND MANUALLY OPERABLE PILOT VALVE CONTROLS

John A. McPherson, Palo Alto, Calif., assignor to Robert Trent Jones, Inc., Palo Alto, Calif.

Filed Sept. 15, 1965, Ser. No. 487,477
5 Claims. (Cl. 251—26)

An electrically-actuated irrigation system, providing radio-controlled outlets, particularly advantageous for existing sprinkler installations, as on golf courses; for no control wiring need be installed, and existing waterlines may be used. The sprinkler outlets each have a line valve urged by line pressure to open position, and have conveniently-provided control means for the line valve, including a pair of independently-actuated control valves for regulating pressure in a chamber which hydrau-

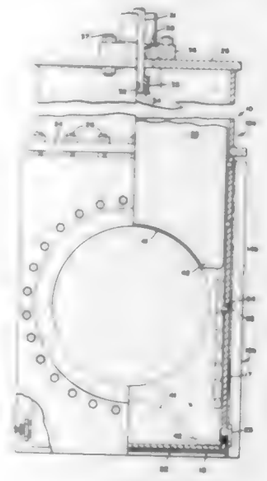


lically holds the line valve closed unless irrigation-actuation is desired.

3,372,900
VALVE WITH GATE MEMBER GUIDE BARS

Marvin H. Grove, Piedmont, Calif., assignor to M & J Valve Company, Houston, Tex., a corporation of Delaware

Filed Jan. 6, 1965, Ser. No. 423,741
1 Claim. (Cl. 251—205)



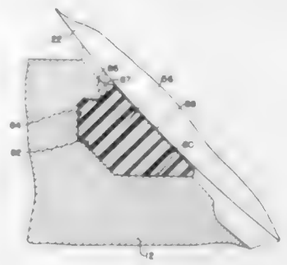
1. In a gate valve construction, a body substantially rectangular in section and formed of flat end walls and flat side walls joined together at their corners, the end walls having aligned circular flow passages of equal diameter adapted for connection with associated piping, a flat gate disposed within the body and movable between open and closed positions relative to the flow passages and having parallel side margins, the body having upper and lower extending portions for accommodating the gate, the gate having flat parallel valve working surfaces formed thereon, annular sealing assemblies carried by the body and forming fluid tight seals between the body and the valve working surfaces of the gate in regions surrounding the flow passages and for closed position of the gate, said assemblies including seal rings and spring means for yieldably urging the seal rings against the sides of the gate, operating means connected to the upper portion of the gate and extending through the corresponding upper portion of the body, the lower end of the gate having a configuration as viewed in a direction corresponding to the axis of the passages which conforms to

the arc of a circle with the extremities of the arc being located at the lower edge of the gate in regions spaced equal distances from the side edges of the gate, the arc being on a radius corresponding generally to the radius of said flow passages and extending through an angle of from 100 to 180°, the arc being substantially coincident with the periphery of the passages and the inner peripheries of the seal rings for full open position of the valve and being within the bottom portion of the body and below the seal rings for full closed position of the valve, the seal rings engaging the lower margin of the gate for the entire length of said arcuate configuration for full open position of the valve, and guide bars mounted upon the inner surfaces of the end walls within the body and disposed to extend along the sides of the flow passages, said bars forming abutment guides for engaging the side margins of the gate.

3,372,901
VALVES

Paul A. Manor and Gustav Kania, Pittsburgh, Pa., and William A. Generke, Wadsworth, Ohio, assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 13, 1964, Ser. No. 359,098
4 Claims. (Cl. 251—315)



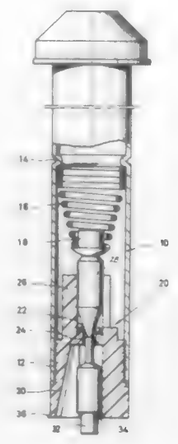
1. A valve comprising a metal body having flow passages intersecting an enlarged central chamber, a ported ball valve member in said chamber mounted for rotation between open and closed positions, and sealing structure for said valve comprising a pair of integrally formed solid elastically deformable seat rings fixedly mounted with a shrink fit in grooves in said valve body structure, said rings extending around said body adjacent the inner ends of said flow passages to effectively surround said flow passages, said rings each having an essentially conical seating surface engaging the ball member and joined at its radially outer edge to an essentially cylindrical surface extending into a corresponding cylindrical surface in said groove, and interlocking means at the inner peripheries of said rings to hold said rings against accidental dislodgement from said grooves comprising an annular curved surface open recess extending around the inner periphery of each ring adjacent said seating surface and a correspondingly shaped annular curved surface lip on the adjacent groove wall projecting into said recess.

3,372,902
VALVE, ESPECIALLY EXPANSION VALVE FOR REFRIGERATOR

Rudibert Götzenberger, Feilbach, near Stuttgart, Germany, assignor to Firma Ernst Flitsch, Feilbach, near Stuttgart, Germany

Filed Dec. 3, 1965, Ser. No. 511,888
Claims priority, application Germany, Dec. 12, 1964, F 44,695
6 Claims. (Cl. 251—321)

An expansion valve for refrigerators in which a spring pressed valve member is engaged at one end by a coaxial pin member to be moved by the latter against the spring force out of engagement with the valve seat and in which

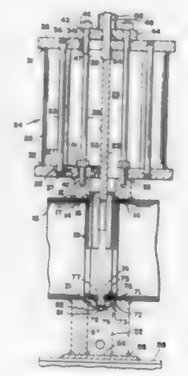


the valve member and the pin member are guided by guide means for movement in axial direction.

3,372,903
VALVE BODY CONSTRUCTION

Marvin H. Grove, Piedmont, Calif., and Kee W. Kim, Houston, Tex., assignors, by mesne assignments, to M & J Valve Company, Houston, Tex., a corporation of Delaware

Filed May 5, 1965, Ser. No. 453,377
7 Claims. (Cl. 251—329)



A gate valve in which the body consists of a box-like main body portion with at least one fabricated body extension made in the form of a pressure vessel.

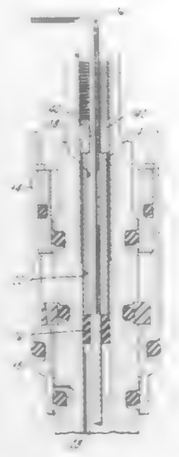
3,372,904
WATER FAUCET VALVE MEANS CONTAINING A LUBRICANT

Bernard A. Graham, Phoenix, Ariz., and Carl Dailey, Covina, Calif., assignors to Standard Screw Company, Bellwood, Ill., a corporation of New Jersey

Filed Aug. 28, 1964, Ser. No. 392,814
3 Claims. (Cl. 251—355)

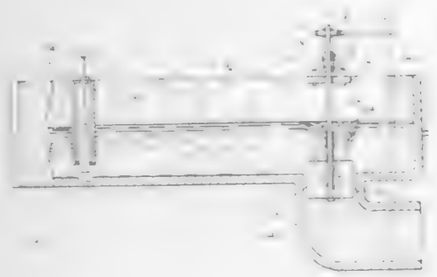
A hot and cold water faucet type mixing valve having a self-contained lubricant chamber within the valve member which is slidable relative to its valve housing. Lubricant is forced out of the chamber to lubricate the seals

between the valve member and valve housing by a piston in the lubricant chamber, the piston being actuatable



from outside the valve without disassembling the interior of the valve.

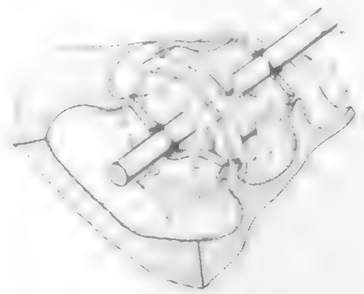
3,372,905
POWER GENERATING METHOD AND APPARATUS
Kenard D. Brown, 1227 S. Willow St., Casper, Wyo. 82601
Continuation-in-part of application Ser. No. 578,870, Sept. 12, 1966. This application July 20, 1967, Ser. No. 660,153
15 Claims. (Cl. 253—26)



A method for generating power comprises the production of a vortex in liquid, the confining of a portion of the vortex, and the utilization of the vortical forces in the confined zone for rotating a power output device; an apparatus is disclosed in which the method is practiced and which is arranged to provide and maintain a liquid vortex and to employ the rotational forces of the vortex, as distinguished from the vertical flow produced by the head of liquid, for rotating a power transmitting shaft.

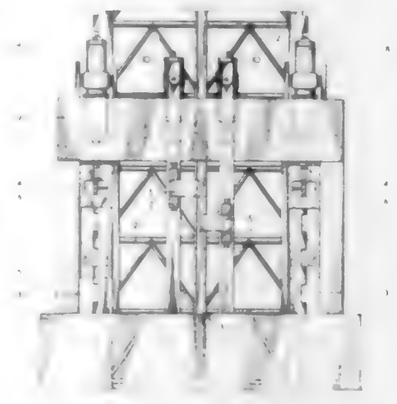
3,372,906
SMALL VOLUMETRIC FLOW REACTION TURBINE
Jerry D. Griffith, 1001 Rockville Pike, Rockville, Md. 20852
Filed June 22, 1965, Ser. No. 466,133
7 Claims. (Cl. 253—39)

This invention relates to reaction turbines and more particularly to a small volumetric flow, small power, high speed reaction turbine capable of operating on high tem-



perature and high pressure fluids at relatively high efficiencies.

3,372,907
APPARATUS FOR PRODUCING A RELATIVE LINEAR DISPLACEMENT BETWEEN A COLUMN AND A MOVABLE BODY
August Hendrik Maria Smulders, Wassenaar, Jakob Jan Bieze, Schiedam, Johannes Frans Hage, Zwijndrecht, and Simon Splinter, Schiedam, Netherlands, assignors to N.V. Werf Gusto v/h Firma A. F. Smulders, Schiedam, South Holland, Netherlands
Filed July 19, 1966, Ser. No. 566,362
Claims priority, application Netherlands, July 26, 1965, 65—9,650
7 Claims. (Cl. 254—110)

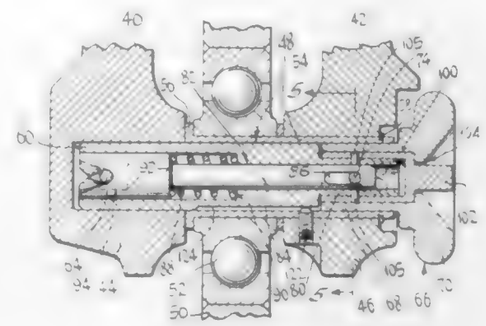


Apparatus for producing a relative linear displacement between a vertical column and a movable body is characterized in that the column is square and has regularly spaced outwardly extending teeth disposed along each vertical corner of the column. Driving and blocking pawls in the form of horizontal bars selectively engage with and drive the column and the movable body relative to each other under the influence of a pair of fluid motors of the cylinder-and-piston type that are connected to the ends of each bar on opposite sides of each corner of the column.

3,372,908
QUICKLY OPENABLE SNATCH BLOCK
John J. McCarthy, Weston, Conn., assignor to Norco, Inc., Ridgefield, Conn., a corporation of Connecticut
Filed Feb. 27, 1967, Ser. No. 618,722
6 Claims. (Cl. 254—193)

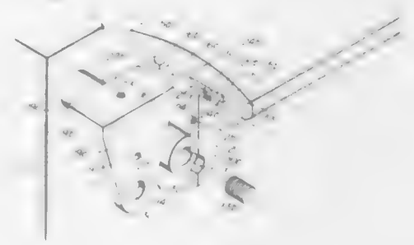
A quick-opening snatch block having a yoke with pivotally connected spaced arms which can be swivelled apart, one arm carrying a bearing bushing extending toward the other arm and having a pulley on said bushing, said one arm also having a captive pulley pin passing through the bushing and releasably latched to the other arm to either lock the arms in parallelism or else release the arms to permit their being swivelled apart. The yoke also has a

swivel-mounted hook with a locking and release pin which passes through the swivel of the hook. The pulley pin of the snach block is a multi-part assemblage especially



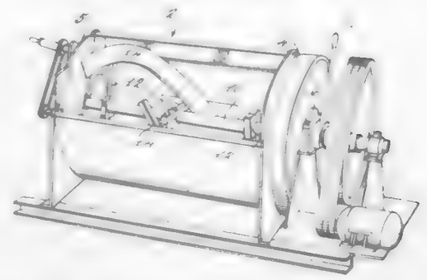
arranged to be quickly locked to or released from a cross member in said other arm of the block, all without requiring the use of tools.

3,372,909
ANCHOR AND BRACKET ARRANGEMENT FOR RAIL
Julian J. Attaway, 4520 Elmdale Drive, Tucker, Ga. 30084
Filed Oct. 11, 1966, Ser. No. 585,800
6 Claims. (Cl. 256—69)



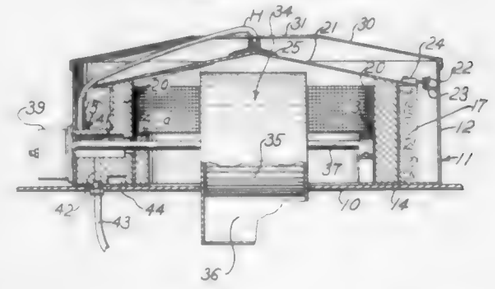
1. A rail and anchor arrangement comprising, an anchor including a pair of discrete lugs having contacting legs for said lugs to be back to back and each of said lugs having a lateral extension integral with an inner end of said leg thereof for outer ends of said extensions to be outward from opposite sides of said legs and said anchor to be generally T-shaped in transverse cross section when said lugs are securely held back to back, and a set screw for at least one of said lugs, said set screw threadedly engaging said lateral extension of the lug within an opening leading from a first side of said extension to a second side of said extension in a direction away from the leg of said lug and having a driving end accessible adjacent to said first side and an inner end to advance outside said second side, and a rail having an inwardly laterally oppositely enlarging slot entering the underneath side thereof and said slot being of a size and proportion for each of said lugs separately to have said lateral extension thereof inserted into said slot laterally of the slot at a location intermediate the opposite longitudinal ends of said rail and said lugs brought into said back to back relation, thereafter to be securely held having said extensions interlocked with said rail laterally of said rail and slidable longitudinally of said rail in said slot and having said set screw to be driven for said inner end thereof to engage said rail and secure said anchor interlocked with said rail laterally of said rail against movement along the length of said rail.

3,372,910
MIXER FOR CONCRETE AND SIMILAR HARDENABLE MATERIALS
Lonnie J. Estis, Mobile, Ala., assignor of one-half to Wright Smith, Jr., Mobile, Ala.
Filed Nov. 30, 1966, Ser. No. 598,083
2 Claims. (Cl. 259—178)



A stationary generally cylindrical mixing drum for concrete, etc., in which there is a rotatable horizontally extending shaft provided with mixing paddles carried on arms extending normal to the shaft. Loose metallic rings are carried by the shaft and by the arms to eliminate the accumulation of cementitious material thereon.

3,372,911
EVAPORATIVE COOLER FOR VEHICLE MOUNTING
Bennie B. Herboldsheimer, Potter, Nebr. 69156
Filed Jan. 16, 1967, Ser. No. 609,451
8 Claims. (Cl. 261—24)

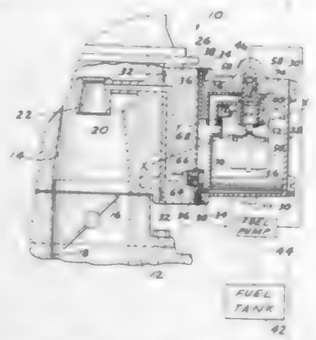


A ring-like trickle pad supported within a housing with the suction of a blower applied to the inside wall of the pad. The housing and pad are constructed to guide outside air into the outer face of the pad around the circumference thereof. Water is delivered to the upper edge of the trickle pad to flow therethrough by gravity, the water being supplied to the upper edge by a distributor from a central point.

3,372,912
CARBURETOR
Stanley H. Benmore, Dearborn, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Dec. 21, 1966, Ser. No. 603,514
10 Claims. (Cl. 261—36)

This application discloses an improved internal combustion engine carburetor in which the fuel supplied to the induction passage is normally metered through a calibrated jet fed from the fuel bowl in which a predetermined necessary fuel level is maintained by a float-operated valve controlling the fuel inlet, the improvement comprising a relatively small capacity, heat insulated cavity within the fuel bowl and feeding the jet, the cavity having an overflow positioned slightly below the bowl level and the fuel inlet discharging directly into the small capacity cavity so that it quickly fills to its overflow level and provides an approximately proper fuel level sooner upon cranking of the engine than a comparable level would be reached if the fuel inlet discharged into the larger capacity fuel bowl, the improvement being particularly

beneficial in but not limited to carburetors in which the fuel bowl is drained each time the engine is shut down to control air pollution by evaporation, a main benefit being

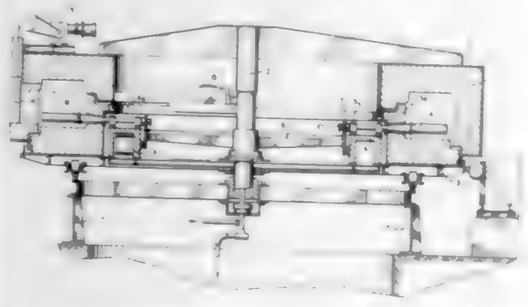


an acceptable cranking time on starting and reduction in undesirable fuel vaporization on hot starting when the fuel bowl must be refilled.

3,372,913
ROTARY DEVICE FOR HEAT TREATMENT OF PIPES

Siegfried Gaabs, Berlin-Weissensee, Germany, assignor to VEB Lokomotivbau-Elektrotechnische Werke "Hans Beimler," Henningsdorf, Germany

Filed Oct. 11, 1965, Ser. No. 494,773
7 Claims. (Cl. 263—7)

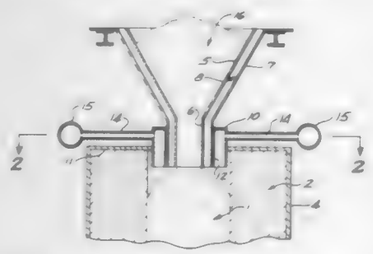


A rotary hearth furnace for heat treatment of pipes of a thermoplastic material, preferably of scoria, having a ring shaped heating channel defined by a stationary cover portion carrying heating elements and by a step-by-step driven hearth portion, a plurality of roller pairs arranged radially within said heating channel for supporting rotatably the pipes to be treated, whereby said roller pairs are driven by separate driving means irrespective of the motion of said hearth portion.

3,372,914
SHAFT KILN AND METHOD OF OPERATION

Earl Leatham, Wexford, Pa., and William W. Campbell and Carl E. Rossi, Ludington, Mich., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 5, 1966, Ser. No. 547,975
6 Claims. (Cl. 263—29)

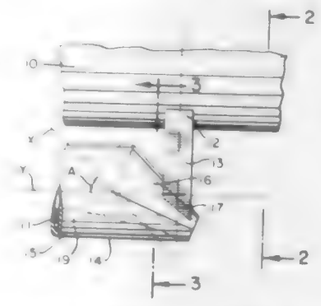


A shaft kiln charging apparatus and gas-collection hood having an integral surge system which accommodates sudden upward blasts of hot, solid material and exhaust gas on the collapse of material hang-ups in the kiln.

3,372,915
ROTARY KILN ASSEMBLIES

Flemming Edvin Jensen, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware

Filed Sept. 19, 1966, Ser. No. 580,469
Claims priority, application Great Britain, Sept. 28, 1965, 41,208/65
7 Claims. (Cl. 263—32)

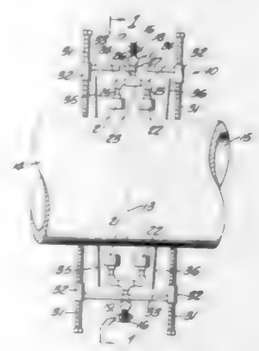


1. In a rotary kiln assembly having an outlet end from which the material is discharged, the improvement in combination therewith comprising a plurality of generally cylindrical cooler tubes mounted about the kiln at the inlet end thereof, a communicating chute interconnecting the kiln with each tube for transfer of material from the kiln to the tubes with the outlet end of the chute opening into the inlet end of the tube, the inlet end of each tube having a first portion opposite the outlet end of the respective connected chute which is an extension of the cylindrical wall of the tube and a second portion nearer the kiln than the first portion which is a section of a cylinder, the axis of which is inclined with respect to the axis of the tube to form an inclined surface down which material in the cooler tube can slide away from the outlet of the chute when the cooler tube is above the kiln axis, and the outlet of the chute is received in the second inclined cylindrical portion at a point offset in the direction of rotation of the kiln from the plane of symmetry of the second portion.

3,372,916
APPARATUS FOR STRESS-RELIEVING PIPE WELDS

George Robert Prescott, Pasadena, and Harold Wilson Sharp, Whittier, Calif., assignors to C. F. Braun & Co., Alhambra, Calif., a corporation of California

Filed Sept. 21, 1965, Ser. No. 489,102
2 Claims. (Cl. 266—2)

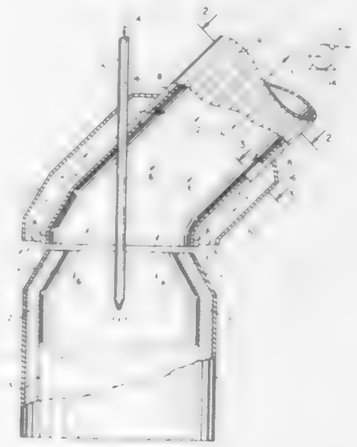


Stress-relieving of a welded joint in a horizontal pipe is accomplished by two series of radiant heaters encircling the pipe, one series on each side of the welded joint. Duplicate hinged ring segments support the radiant heaters and supply combustible gas to them. Laterally spaced pipe-engaging means on the ring segments position the radiant heaters in an eccentric position with respect to the pipe, and upwardly diverging annular wind screens positioned between the pipe-engaging elements encircle the pipe and confine the radiant heaters between them.

3,372,917
APPARATUS FOR RECOVERY OF CONVERTER OFF-GASES

Harry L. Richardson, Pittsburgh, Pa., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 16, 1965, Ser. No. 479,717
9 Claims. (Cl. 266—15)



Combustible off-gas is removed from the mouth of a converter, such as an oxygen steel converter, by inducting a stream of off-gas substantially undiluted with air into a hood disposed with gas inlet opening over the mouth of the converter. A stream of air, mixed with a small amount of off-gas escaping from the spacing between the hood and the converter mouth, is concomitantly withdrawn from about the perimeter of the mouth of the converter and external to the hood, by providing an outer coaxial duct external to the hood. The air stream is inducted through the annular passage between the outer duct and the hood, and the withdrawn air stream or mixture of air with a small amount of off-gas is added to the main off-gas stream through openings in the wall of the hood. Combustion of the off-gas entirely within the hood thus takes place, at a location displaced from the mouth of the converter, and mixing of air with the main off-gas stream at the mouth of the converter is prevented, which effectively avoid combustion of the off-gas at the mouth of the converter and consequent damage to the converter.

3,372,918
APPARATUS FOR MAINTAINING PRESSURE-TIGHT SEAL ON BLAST FURNACE BELLS

Stephen W. Wheeler, Youngstown, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed Dec. 6, 1965, Ser. No. 511,835
2 Claims. (Cl. 266—27)

1. A pressure seal charging apparatus for a pressurized blast furnace comprising:

(a) a materials lock having a generally cylindrical top opening and a generally cylindrical bottom opening and defining an enclosure except for said openings;

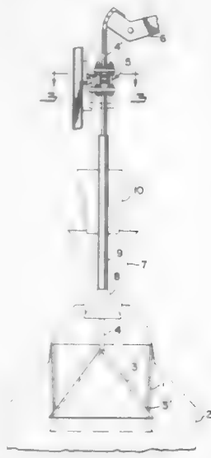
(b) an auxiliary bell adapted to close said top opening and movable with respect to said lock, whereby material may be deposited in said enclosure through said top opening, and the top opening thereafter closed;

(c) a main bell adapted to close said bottom opening, and movable with respect to said lock, whereby said main bell may be in a closed position with respect to said lock during the charging of materials into said materials lock, and thereafter lowered to open said bottom opening and thereby discharge said materials from said lock;

(d) a supporting means for said auxiliary bell adapted to move upward and downward with said auxiliary bell in its closing and opening operations of said top opening, said auxiliary bell supporting means having a cylindrical opening extending through the length of said supporting means;

(e) a supporting rod for said main bell extending through and beyond the said cylindrical opening in said supporting means for said auxiliary bell;

(f) a rotating means adapted to rotate said main bell as said main bell is being moved upward into contact with the corresponding bell seat, said rotating means being attached to the upper end of said supporting arm for said main bell and adapted to support the main bell and said supporting arm, said rotating means comprising:



(1) an overrunning clutch attached to the upper end of said main bell supporting rod and adapted to rotate said supporting rod and thereby said main bell when turned in one direction and not to turn said supporting rod and said main bell when turned in the opposite direction,

(2) a lever attached to said clutch and extending a considerable distance therefrom, its extreme end having a slot therein,

(3) an adjustable cam extending into said slot of said lever,

(4) a protruding arm extending from said rotating means having a yoke at the extreme end of said arm,

(5) a vertically extending yoke guide fastened to a supporting means independent of and separated from said rotating means and adapted to fit into said yoke and to guide said yoke in its upward and downward paths as said supporting arm and said main bell are raised and lowered, said adjustable cam being fastened to said yoke guide and adjusted at an angle so that as the rotating means is moved upward with the supporting arm for said main bell, the adjustable cam strikes the side of the said groove of said lever and causes a rotating movement of said lever about the center line of said clutch attached to the top of said supporting arm, said adjustable cam being positioned at such an angle that it activates said lever and said clutch to

rotate said supporting bar and said main bell prior to and during the initial contact of said main bell with said bell seat whereby a grinding effect is produced between the two said surfaces, and

(g) a means for raising and lowering said rotating means and thereby also said supporting arm and said main bell.

3,372,919
AUTOMATIC VEHICLE LEVELING SYSTEM

George W. Jackson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Continuation of application Ser. No. 408,218, Nov. 2, 1964. This application July 29, 1966, Ser. No. 568,978
11 Claims. (Cl. 267—65)

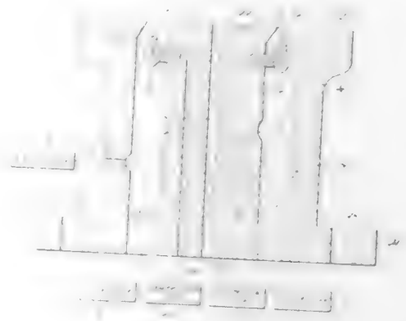
1. An auxiliary suspension system comprising the combination of, a shock absorber having a cylinder portion and a piston rod portion reciprocal relative thereto, fluid spring means for producing a predetermined height relationship between said cylinder portion and said piston rod portion, a pressurized enclosure having compressor means therein with an outlet discharging interiorly of said enclosure, a fluid receiver fluidly communicated with the inlet to said compressor means, means for directing pressurized fluid from said pressurized enclosure interiorly of said fluid spring means, height control means including valve means for controlling flow of fluid from said fluid spring means back to said fluid receiver, said pressurized enclosure, fluid receiver, fluid spring and fluid directing means having a volume including a predetermined amount of compressible fluid wherein said system is maintained at a predetermined pressure when said compressor means is inoperative to prevent complete deflation of said fluid spring means, said volume and said predetermined amount of compressible fluid limiting the pressure buildup in said fluid spring means produced during operation of said compressor means.

3,372,920
METHOD FOR PRODUCING THERMOPLASTIC SHEET MATERIAL

Herbert O. Corbett, Bridgeport, and John J. Quackenbush, Monroe, Conn., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed July 12, 1965, Ser. No. 471,018
2 Claims. (Cl. 264—95)

Extrusion die and method for producing corrugated thermoplastic film, the die including spaced core pins for introducing parallel air-streams into the extruded film and, where three-layered corrugated thermoplastic film is produced, the die including spaced and alternately offset core pins whereby the extruded product is constituted



by smooth outer layers and a central uniformly corrugated inner layer, each layer originating from a separate source of plastic material.

3,372,921
ADJUSTABLY POSITIONED SUPPORT BOARD FOR A SURGICAL TABLE

Roger Anderson, 4221 E. Lee, Seattle, Wash. 98102

Filed Jan. 3, 1966, Ser. No. 518,213
11 Claims. (Cl. 269—328)

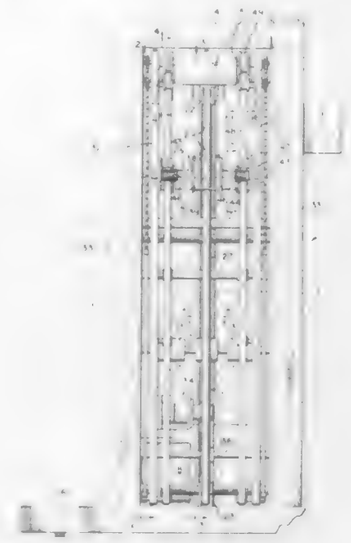
1. A support for a surgical table having a leg table top section mounting plate with front and back faces which comprises a mounting section connected to the back face of said mounting plate; a support board having brackets attached thereto adapted for mounting said support board on said mounting section; said mounting section comprising a cross-arm slidably mounted adjacent and transverse to the mounting plate back face and having side flanges, one at each end, which extend beyond the sides of said mounting plate and which have outer edges parallel with the slide axis of said cross-arm adapted to receive said brackets when mounted from a direction perpendicular to said mounting plate.

3,372,922
SHEET CONVEYOR MECHANISM

Donald L. Snellman and Jack D. Keeler, Seattle, Wash., assignors to Norfin, Inc., Seattle, Wash., a corporation of Washington

Continuation-in-part of application Ser. No. 521,077, Jan. 17, 1966. This application Sept. 29, 1966, Ser. No. 583,012
12 Claims. (Cl. 270—58)

A collator distributor having a set of conveyor belts disposed vertically in front of a plurality of shelves. Non-moving, retractable, metallic tapes are disposed contiguous to each of the conveyor belts to hold sheets against the belts as the sheets are fed downwardly. Moving,

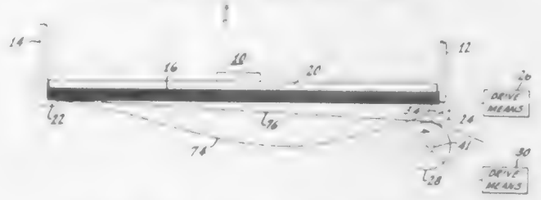


vacuum tape means are mounted between the conveyor belts to hold the sheets flat as they are conveyed.

3,372,923
FEEDER APPARATUS

James P. Watson, Jupiter, and Onnie J. Shamblin, Lake Park, Fla., assignors to Radio Corporation of America, a corporation of Delaware

Filed Nov. 30, 1965, Ser. No. 510,519
8 Claims. (Cl. 271—23)

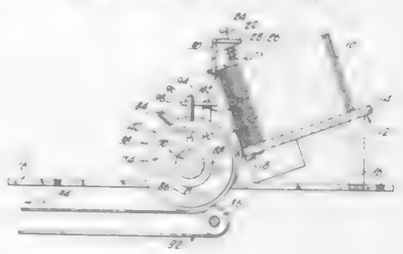


An apparatus for holding and feeding sheets of material such as documents and cards by means of a hopper and oscillating and rotating rollers wherein one sheet is separated from a stack of said sheets by a roller with a knife edge which causes the sheet to bow outwardly and away from the stack.

3,372,924
VACUUM SHEET FEEDER

Ernest H. Treff, Port Washington, N.Y., assignor to F. L. Smithe Machine Co., Inc., New York, N.Y., a corporation of New York

Filed Dec. 13, 1965, Ser. No. 513,339
6 Claims. (Cl. 271—29)

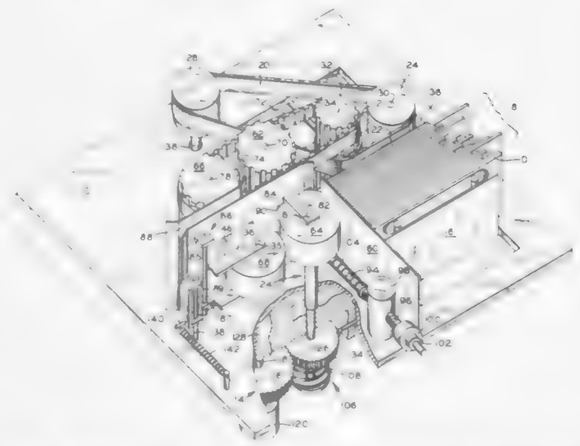


A hollow, rotary housing includes a movable wall portion through which suction may be applied at timed intervals in order to grasp the leading blank in a stack and then deliver the blank to a conveyor.

3,372,925
APPARATUS FOR SEPARATING AND GUIDING A VARIETY OF DIFFERENT DOCUMENTS

Hans Jacobus de Vries, Leidschendam, and Carolus Pieter Leersnijder, Heemstede, Netherlands, assignors to De Staat der Nederlanden, ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Continuation-in-part of application Ser. No. 429,062, Jan. 29, 1965. This application Apr. 12, 1967, Ser. No. 630,395
20 Claims. (Cl. 271—37)

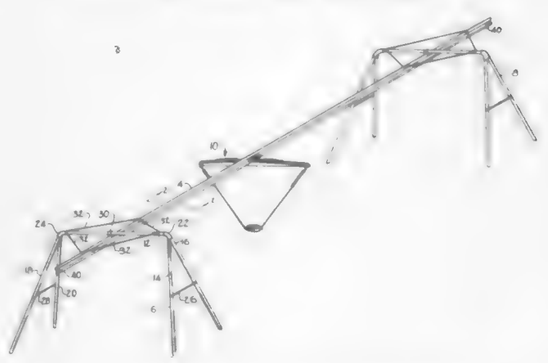


An apparatus for separating and guiding documents such as forms, cards, letters and the like of different size, stiffness and quality having an intermittently driven continuous belt for conveying documents from a stack to and between two successive pairs of opposed conveying rollers along an adjustable slot formed by a pivoted plate. The first pair of rollers insure that only one document at a time is fed to the second pair of rollers. Both of the rollers of the first pair may be driven, however, one is adjustably spaced and resiliently mounted with respect to the other, is driven through a friction clutch, and its speed is variable and considerably slower than that of the other roller of that pair. One of the second pair of rollers is frictionally driven by contact with the other driven roller of that pair.

3,372,926
PLAYGROUND AND GYMNASTIC EQUIPMENT FOR TUMBLING EXERCISES

Raymond J. Murphy, Boune Terre, Mo. (20412 Craimer Lane, Huntington Beach, Calif. 92646)

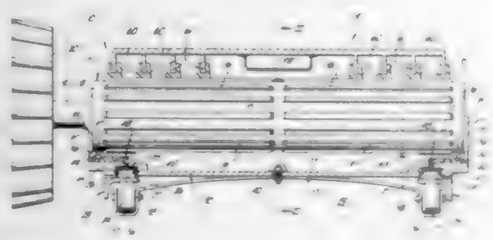
Continuation-in-part of application Ser. No. 286,828, June 10, 1963. This application Dec. 18, 1965, Ser. No. 516,937
21 Claims. (Cl. 272—60)



1. A tumbling device comprising a single carriage way, means for supporting the carriage way in upwardly spaced relation to a man-supporting surface, a carriage mounted

on the carriage way for movement therealong, a belt adapted to snugly embrace a tumbler's waist, and means for supporting the belt from the carriage at a preselected height above the man-supporting surface whereby a tumbler will be supported by the belt if he loses his balance and falls while practicing tumbling exercises, means disposed between the belt supporting means and the carriage for preventing rotation of the belt supporting means about a vertical axis, and means between said belt supporting means and said belt for allowing free rotation of the belt about a first axis perpendicular to the plane of the belt and about a second axis perpendicular to said first axis.

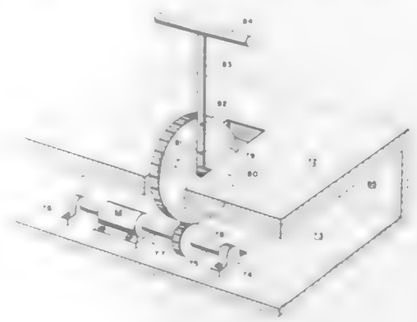
3,372,927
MOVABLE FULCRUM FOR SPRINGBOARDS
Raymond C. Rude, 2468 Wagner, Pasadena, Calif. 91107
Filed Sept. 24, 1965, Ser. No. 490,050
8 Claims. (Cl. 272—66)



1. A movable fulcrum for a springboard having a supported end and an unsupported end, the springboard being disposed over a support located below the springboard intermediate the ends thereof, the support providing a pair of horizontal rectangularly cross-sectioned parallel rails spaced transversely of the springboard and aligned with the length of the springboard, the fulcrum comprising a frame adapted to be supported on the rails and including a rail engaging shoe slidably engageable with each rail, means for guiding movement of the frame along the rails, a drum engaging the underside of the springboard, means rotatably mounting the drum to the frame transversely of the springboard, means connected to the drum operable by a person on the springboard over the drum for rotating the drum to drive the drum against the springboard thereby to move the drum along the springboard, wherein said frame comprises an upwardly open elongate frame disposed transversely of the rails and having end walls defining upwardly open coaxially aligned recesses, the means mounting the drum to the frame includes a quantity of material having a low coefficient of friction relative to the material from which the drum is fabricated secured to the frame in each recess and having an upwardly open semi-circularly curved surface conforming to the curvature of the drum and engaging the drum adjacent a respective end thereof and means extending from the frame over the drum at substantially the midlength of the drum for retaining the drum in the frame.

3,372,928
EXERCISING MACHINES OPERABLE INDEPENDENTLY OF THE EXERCISING PERSON'S APPLIED FORCE
Merle Robert Showalter, 4733 Shoremeade Road, Richmond, Va. 23234
Filed Aug. 13, 1965, Ser. No. 479,528
10 Claims. (Cl. 272—67)

1. A supporting surface, an exerciser mounted on said supporting surface and comprising first means for operative engagement by a portion of the human body, second means mounting said first means for back and forth movement in opposite directions, third means for selectively moving said first means in either of said directions and for movement between extreme positions both of which

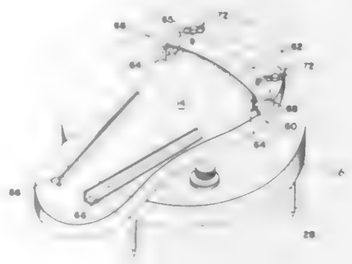


extreme positions are within reach of a person in contact with said supporting surface, and at a speed of movement substantially independent of humanly possible muscular exertion by the user on said first means in the direction of exercise.

3,372,929
BILLIARD CUE STROKE GUIDING STEM
John Molis, Box 3915, Baytown, Tex. 77520
Filed Sept. 13, 1965, Ser. No. 486,933
6 Claims. (Cl. 273—23)

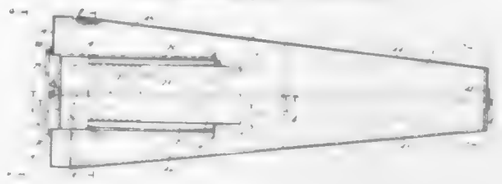
1. In a billiard cue, an elongated tubular stem member provided at one end with an enlarged handle portion and at its other end with a relatively soft deformable cue tip, said stem member being formed with a longitudinal slot, a slide element mounted in said stem member, and a support leg pivotally-connected to said slide element and extending through said slot.

3,372,930
FOOT TRAINER WITH ADJUSTABLE ROTATION AND FRICTION MEANS
Michael P. Sertich, 200 Henry Grady Bldg., Atlanta, Ga. 30303
Filed May 5, 1965, Ser. No. 453,286
6 Claims. (Cl. 273—26)



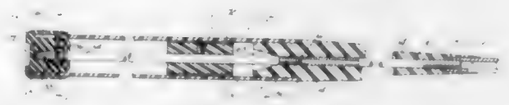
The invention is a trainer for sportsmen which is designed to restrict, while guiding, the rotational movement of one of the sportman's feet. By varying the degree of rotation of the foot and varying the force required to rotate the foot, the trainer adjustably controls the foot of the sportsman during the movement of his body as in striking a golf ball or tennis ball or baseball.

3,372,931
BOWLING GAME WITH RELATIVELY MOVABLE SECTIONS FOR CONTROLLING BALL MOVEMENT
Carl I. Oberg, Annandale, N.J. 08801
Filed Mar. 3, 1965, Ser. No. 436,767
5 Claims. (Cl. 273—39)



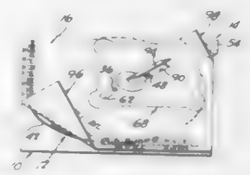
There is provided a bowling game consisting of pivotally attached bed sections in which provision is made for the player to release a ball at one section to strike a bumper at the second section, said ball returning to the first section whereat pins to be contacted by said ball are located; with means located at the first section for moving the second section relative thereto for directing said ball.

3,372,932
BILLIARD CUE HANDLE ASSEMBLY
John Molis, Box 3915, Baytown, Tex. 77520
Filed Sept. 13, 1965, Ser. No. 486,935
6 Claims. (Cl. 273—68)



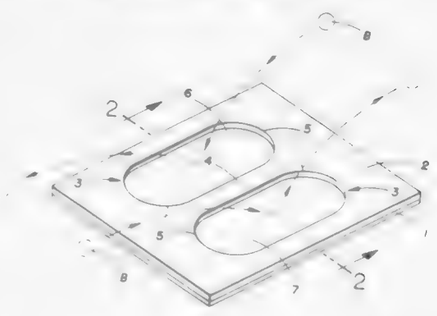
1. A billiard cue comprising an elongated stem member provided at one end with a cue tip, a tapered mid-section threadedly-secured to the other end of said stem member, a hollow tubular handle mounted on said mid-section, said handle being formed with an end slot, a butt member engageable on said handle, rod means secured to said butt member and threadedly-engaging said mid-section, and radial pin means on said butt member received in said end slot.

3,372,933
BASEBALL GAME APPARATUS
Walter S. Murzyn, 1613 Caroline Ave., Whiting, Ind. 46394
Filed Dec. 10, 1965, Ser. No. 512,930
7 Claims. (Cl. 273—88)



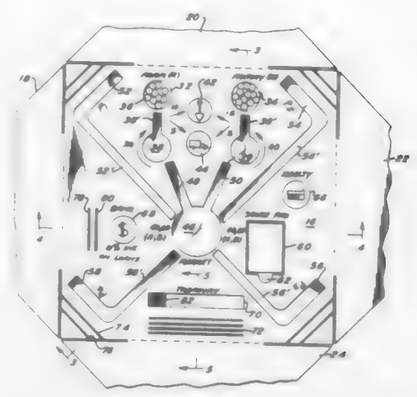
1. Baseball game apparatus comprising a support, a rotary pitcher's pitch selecting plate journalled on the support, a batter's slide plate supported above the pitcher's plate and movable endwise thereacross, and a playing field plate supported over the batter's slide plate, the pitcher's plate having circumferentially arranged play designating means thereon, said pitcher's plate having a peripheral portion thereof exposed to view at a side of the playing field plate, said batter's slide plate having a tab exposed beyond another side of the playing field plate, said tab having spaced different play designations disposed there-along, the playing field plate being formed with opening means adapted to selectively cover and expose to view play designations related to the play designations on the pitcher's plate and the batter's plate, the slide plate being formed with a slot adapted to register with said opening means so as to expose through said opening means selected play designating means on the pitcher's plate according to the endwise adjustment of the slide plate relative to the other plates.

3,372,934
GAME BOARD AND SMALL BOUNCEABLE BALL
Theodore Heil, P.O. Box 387, Lodi, Calif. 95240
Filed July 26, 1965, Ser. No. 474,627
3 Claims. (Cl. 273—95)



A game board for use with a hand-played bounceable ball; the game board having a bounce-deadening top cushion sheet, and such sheet being formed with one or more cutouts each exposing a hard and smooth-surfaced playing zone.

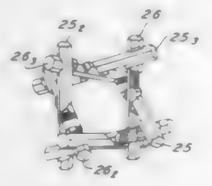
3,372,935
ECONOMIC ACTIVITY GAME
Charles G. Santora, 38A Atlantic Ave., Pleasantville, N.J. 08232
Filed Feb. 12, 1965, Ser. No. 432,201
7 Claims. (Cl. 273—130)



A game of skill which is a simplified representation of the economic system where economic activities are obtained by bid and assets are acquired by economic transactions in series play comprising a game board having a centrally disposed receptacle representing the market. A plurality of player positions are spaced equally around the periphery of the board. The winner of the game is the player having acquired the most points corresponding to assets in a prestipulated number of cycles. The board has player receptacles thereon at each player position. Chutes slope down from the centrally disposed receptacle toward the player receptacles so that assets may be delivered from the market to each player receptacle. Storage receptacles for farm and factory units are supplied on the game board. At least one slot is provided adjacent each player receptacle in which activity cards may

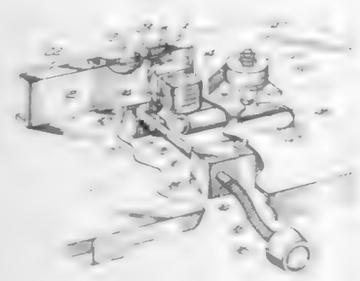
be placed. Transfer receptacles are provided adjacent the market receptacle. There are chutes which slope down from points adjacent the farm and factory receptacles to the transfer receptacles. Gravity displaceable game pieces which are used to represent assets are adapted to be disposed in the farm and factory receptacles and are visually distinguishable.

3,372,936
INTERLOCKING BAR PUZZLE COMPRISING HELICALLY NOTCHED BARS
Robert E. Sanson, 1402 Reservoir Ave., Roslyn, Pa. 19001
Filed Aug. 27, 1965, Ser. No. 483,165
7 Claims. (Cl. 273—160)



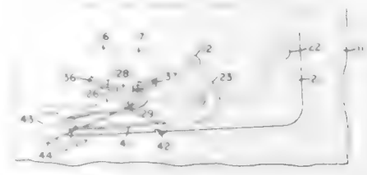
1. A puzzle comprising twenty-four bars of equal length and cross-section arranged in two respective sets of twelve identically-notched reversible bars, said notches being disposed helically around the bars, the notches of the bars in one set being respectively interengageable with the notches of the bars of the other set to form a symmetrical self-sustaining structure.

3,372,937
ELECTRICAL TRANSDUCING
Frank B. Flint, Weymouth, Mass., assignor to Automatic Radio Manufacturing Co., Inc., Melrose, Mass., a corporation of Massachusetts
Filed Oct. 20, 1965, Ser. No. 498,289
4 Claims. (Cl. 274—11)



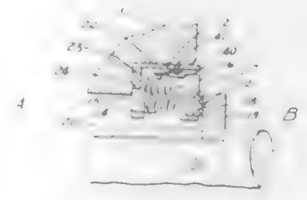
In a tape player a tape transducing head is secured to a vertical slide that terminates at its lower end in a cam lever riding upon a cam as the horizontal flange of the vertical slide is urged downward by a leaf spring attached to the upper flange of a head support subchassis. A rubber follower urges the tape against the drive spindle. The rubber follower may be selectively positioned from a withdrawn position below the tape player chassis to an extended position urging the tape against the drive spindle. In the extended position a pair of springs are so arranged that they exert a moment about the horizontal pivotal axis of the rubber follower to keep it urged against the drive spindle. With one of the springs very close to this pivotal axis, only a slight angular displacement of the rubber follower about that axis toward the retracted position causes this spring to move to the other side of this pivotal axis and help angular movement in this direction toward the retracted position.

3,372,938
TAPE RECORDER HEAD-PAD MECHANISM
Yates M. Hoag, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 15, 1965, Ser. No. 472,147
7 Claims. (Cl. 274—11)



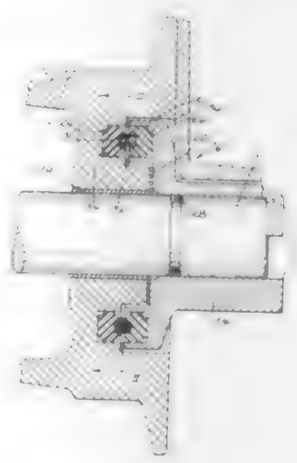
A tape recorder head pad mechanism including a head pad carried by a lever arm pivotally attached to a movable member, a fixed member engaging the lever arm when the movable member is moved away from the head to thereby swing the head pad away from the head.

3,372,939
ROTARY FACE SEAL WITH VIBRATION DAMPING MEANS
Raymond A. Coulombe, Adelphi, and Ernest J. Taschenberg, Baltimore, Md., assignors to Kopper Company, Inc., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,329
3 Claims. (Cl. 277—88)



A face seal for a rotatable shaft having a bellows and a vibration damping finger engaging a wear-resistant surface connected to the bellows for damping vibration in the bellows.

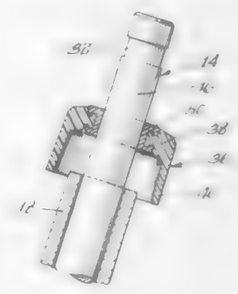
3,372,940
FACE SEAL
Edwin G. Keller, Mount Prospect, Ill., assignor to International Harvester Company, a corporation of Delaware
Filed July 15, 1965, Ser. No. 472,121
10 Claims. (Cl. 277—92)



Symmetrical face seal composed of double O-rings, each presenting a hard-faced, self-contained metal insert establishing an interface of sealing contact with the insert

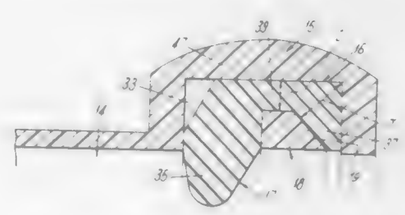
of the other one of the O-rings, and together establishing a friction drive forcing the seal halves to slide at the common interface and transmitted thereto from two, relatively rotatable host members containing the seal.

3,372,941
VALVE SEAL
Joseph M. Liebig, Wheaton, Ill., assignor to Illinois Milling, Incorporated, Chicago, Ill., a corporation of Illinois
Filed Jan. 26, 1965, Ser. No. 428,080
5 Claims. (Cl. 277—178)



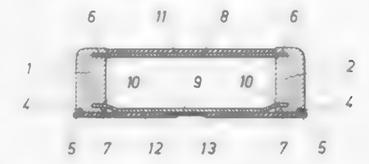
1. In a valve seal and valve stem assembly for use in an internal combustion engine, the provision of a cup-shaped body of semi-rigid synthetic plastic resinous material capable of maintaining its form and shape up to about 300° F. and having an inwardly directed portion defining an axial aperture therethrough larger than the diameter of the valve stem leaving a space therebetween, and a relatively non-rigid insert of elastomeric material disposed within the aperture and substantially coextensive with the axial extent of the inwardly directed portion of the cup-shaped body and interlocked therewith and substantially filling the space between the inwardly directed portion of the body and the valve stem, said elastomeric material having the properties of withstanding up to about 500° F. and swelling in the presence of hot oil whereby the assembled body and insert is slidably assembled with the valve stem when initially positioned thereon and wherein subsequent heat swelling of the insert in use fixedly grips the valve stem for movement of the valve seat in unison therewith and with the inwardly directed portion of the cup-shaped body serving to back up the insert against outward radial enlargement.

3,372,942
PIPE COUPLINGS
Raymond Charles Carter, Hazlehead, near Sheffield, England, assignor to The Hepworth Iron Company Limited
Filed May 13, 1965, Ser. No. 455,445
Claims priority, application Great Britain, Feb. 13, 1965, 6,344/65
3 Claims. (Cl. 277—207)



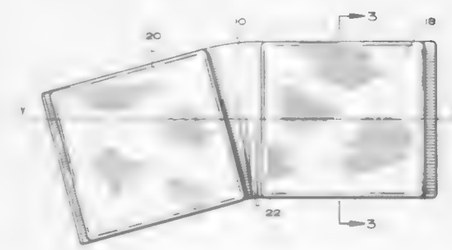
A pipe coupling for clayware piping comprising a slightly resilient plastic socket having an inwardly facing annular recess, a resilient sealing ring substantially filling said recess, and an incompressible locking ring, the side of the locking ring nearest the mouth of the socket being bevelled externally.

3,372,943
COMPOSITE SKI
Rudolf Grossauer, Steyr, Austria, assignor to Bruder Riha K.G., Steyr-Pyrach, Austria
Filed Oct. 1, 1965, Ser. No. 492,055
Claims priority, application Austria, Oct. 9, 1964, A 8,602/64
12 Claims. (Cl. 280—11.13)



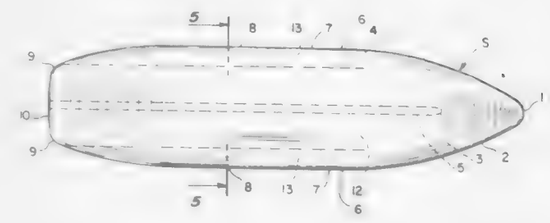
The main carrying frame of a composite ski comprises interconnected resilient edge strips increasing in cross section from the shovel to the binding portion of the ski. Two covering sheets connect the spaced edge strips and extend across the top and bottom of the frame. The edge strips have longitudinal grooves on their inside which accommodate the edges of the covering sheets.

3,372,944
SNOW SLED
Norman R. Lauritzen, 5734 South 565 East, Salt Lake City, Utah 84100
Filed May 31, 1966, Ser. No. 553,910
4 Claims. (Cl. 280—17)



A snow sled comprising an elongated sleigh bottom having a bottom surface, an upper surface adapted to be ridden upon without substantially deforming said sleigh bottom, an upwardly turned front end, and a back end. The sleigh bottom transversely bends between its front end and back end thereby enabling the front end to be turned from side to side to shift the longitudinal axis of said sleigh bottom. A cushion can be secured to the upper surface of the sleigh bottom proximate the front end and a second cushion can be secured to the upper surface proximate the back end.

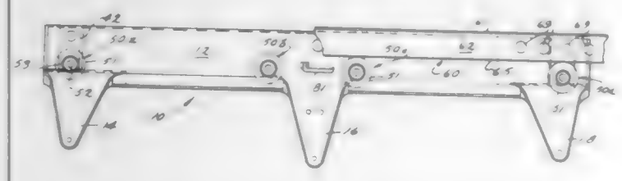
3,372,945
SNOW SLED
Joel Salisbury, Rte. 3, Box 93, Golden, Colo. 80401
Filed Mar. 15, 1965, Ser. No. 439,727
5 Claims. (Cl. 280—18)



A single, board-like member for supporting a user for sliding down a snow slope, having a width to accommodate both feet of the user, an upwardly curving front end having converging sides, a bottom having a longitudinally extending, flat planar surface at each side,

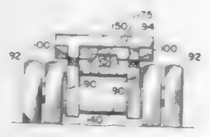
a longitudinally extending and laterally concave surface disposed between the flat surfaces and a longitudinally extending groove disposed centrally of the concave surface, with the concave surface extending to the underside of the upwardly curving front end, and a rear end which converges at each side to the intersection of the concave surface and planar surfaces. The member has an upper surface which is convex in both directions, the surface of the top being formed by a resin impregnated, fiberglass cloth of coarse weave and the surface of the bottom of a resin impregnated, fiberglass cloth of fine weave, such coatings being placed on a blank formed of wood, an expanded resin or the like.

3,372,946
ROLLER SLIDES FOR TRAILERS
Charles T. Hutchens, P.O. Box 1427, Springfield, Mo. 65805
Filed Apr. 26, 1966, Ser. No. 545,493
5 Claims. (Cl. 280—81)



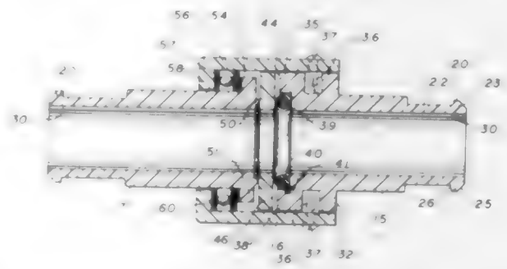
1. An adjustable tandem subframe comprising: a pair of horizontally disposed channel-shaped support members lying in parallel vertical planes; a plurality of spring mounting brackets connected to each channel-shaped support member and depending therefrom; a plurality of horizontally aligned rollers projecting from the outside surface of each support member, each roller being secured on a mounting means for rotation in a vertical plane about an axis fixed to the corresponding support member, said mounting means having an inner end affixed within one of said channel-shaped support members, the rollers on each side of said subframe being adapted to engage a vehicle body frame angle member and support the same in sliding relationship with respect to said subframe; and stop means carried by said subframe and adapted to slide through said channel-shaped support members and engage said vehicle body frame angle members.

3,372,947
SUSPENSION MOUNTING FOR A WHEELED VEHICLE
Henry C. Doennecke, Tulsa, Okla., assignor to Unit Rig & Equipment Company, Tulsa, Okla., a corporation of Delaware
Continuation of applications Ser. No. 563,932, July 5, 1966, and Ser. No. 471,100, July 12, 1965, which is a division of application Ser. No. 338,459, Jan. 17, 1964. This application Feb. 20, 1967, Ser. No. 632,125
4 Claims. (Cl. 280—124)



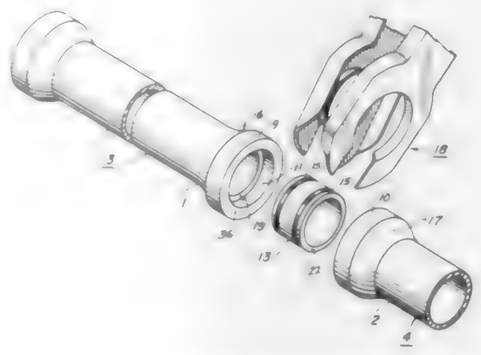
A suspension apparatus for the rear wheels of an off-highway type vehicle which absorbs vertical movement of the wheels with respect to the vehicle. The suspension mounting utilizes resilient pad means for absorbing the shock and the overall construction substantially eliminates vertical movement of the vehicle with the wheels.

3,372,948
ROTATABLE COUPLING
Howard M. Arneson, San Rafael, Calif., assignor to Arneson Products, Inc., San Rafael, Calif., a corporation of California
Filed Mar. 24, 1965, Ser. No. 442,384
1 Claim. (Cl. 285—98)



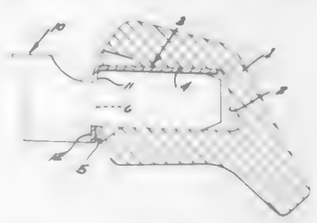
A flexible coupling for high pressure fluid transfer including a pair of axially aligned barrels in which a rigid washer and a flexible washer are interposed between the abutting ends of the two barrels to effect a water-tight rotatable seal between the two barrels in which the two barrels are restricted in nested end to end alignment by rotatable restricting means.

3,372,949
JOINT CONSTRUCTION FOR GLASS PIPE AND THE LIKE
Joseph F. McLay, Warminster, Pa., assignor to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Filed May 21, 1965, Ser. No. 457,703
10 Claims. (Cl. 285—364)



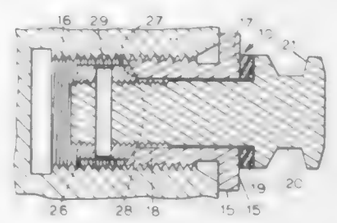
A glass joint construction for joining juxtaposed ends of two pieces of glass pipe of the kind used in chemical apparatus, in which the juxtaposed pipe-ends have enlarged coupling-bells with glazed cylindrical coupling-chambers therein whose inner diameter is substantially larger than the bore of the pipe and whose inner ends terminate at transverse annular shoulders between the coupling-chamber and the bore of the pipe, and a thin-walled Teflon coupling-sleeve of an axial length greater than the combined axial lengths of said coupling-chambers and having an outer diameter greater than the inner diameter of said coupling-chambers, telescoped into said coupling chambers with an interference fit, said coupling-sleeve having two ring-receiving grooves, one disposed in each of said coupling-chambers, and an O-ring in each of said ring-receiving grooves formed of an elastomer which is substantially more readily deformable than the Teflon sleeve.

3,372,950
CONNECTING APPARATUS
Harold D. Wind, Grand Rapids, Mich., assignor to Lescoa, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 10, 1966, Ser. No. 571,622
4 Claims. (Cl. 287—53)



A connecting apparatus having a knob, a generally L-shaped spring and a shaft, one of said legs of said spring mounted within said knob and the other of said legs lying proximate thereto, said spring having a slot in said other of said legs extending in the direction of said other leg, said shaft having a first shoulder on one side and a second shoulder on the opposite side, said shaft inserted through said slot and into said knob, said spring mounted within said knob to be biased such that said first shoulder bears against the free end of said other leg and said second shoulder bears against the opposite end of said other leg, thereby locking said shaft within said knob.

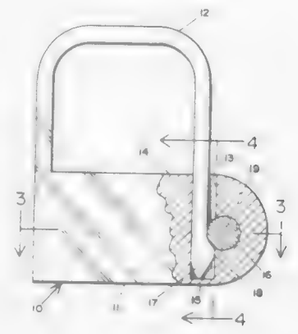
3,372,951
TOOL ADAPTER FOR RECIPROCATING DRAWBOLT CONNECTION
Robert M. McCash, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 21, 1966, Ser. No. 535,765
3 Claims. (Cl. 287—91)



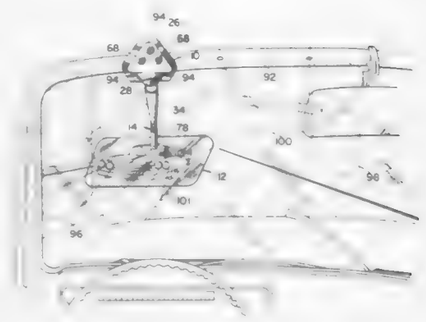
1. A bayonet adapter for a tool to be secured in a machine tool spindle by a drawbar mechanism comprising in combination:
(a) an adapter sleeve including means for securing said adapter sleeve to the tool with the forward end thereof in the tool,
(b) a bayonet member extending loosely and axially through said adapter sleeve and having a surface thereon at its rearward end adapted for connection with the drawbar mechanism,
(c) means for providing a connection between said adapter sleeve and bayonet member for the transmission of axial forces therebetween and permitting a limited swivel movement of said bayonet member about the forward end thereof in said adapter sleeve,
(d) means for yieldably holding said bayonet member in axial alignment in said adapter sleeve.

3,372,952
SEAL
William G. Newton, Lubbock, Tex., assignor to No-vak, Inc., Miami, Fla., a corporation of Florida
Filed Oct. 17, 1966, Ser. No. 587,118
2 Claims. (Cl. 292—307)

1. A seal comprising a body member, an elongated strap portion extending from said body member and forming a loop, said elongated strap portion having a free end portion extending in the direction of said body member, shoulder means mounted on said free end portion of said elongated strap portion, said body member having a longitudinally disposed slot, said slot having side walls and an end wall and receiving said free end portion of said elongated strap portion, said body member having a transversely disposed bore extending therethrough, said last named bore communicating with said slot in proximity of said shoulder means, and rivet means mounted in said bore and extending into said slot and engaging said shoulder means whereby said elongated strap portion is prevented from being withdrawn from said body member.

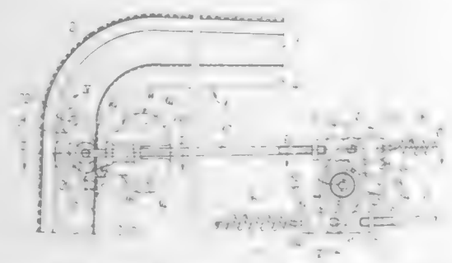


3,372,953
GLARE SHIELD
Theron P. Weaver, 2621 Indiana Ave., Fort Wayne, Ind. 46807
Filed July 28, 1965, Ser. No. 475,477
4 Claims. (Cl. 296—97)



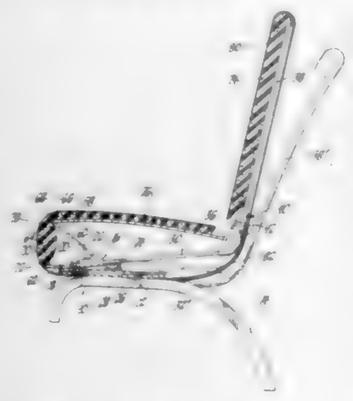
An apparatus for reducing glare in localized areas having a sheet of transparent material with glare-reducing properties pivotally and swivelly connected to a bracket for mounting a device to a vehicle with an elongated and telescoping neck portion therebetween. The glare-reducing sheet has a shape of a parallelogram with pairs of opposite corners being acute and obtuse, respectively. The glare-reducing sheet is pivotally connected to the neck portion so as to be movable with respect to the neck portion about two different axes generally perpendicular to each other and to the neck portion. The neck portion is telescopically extensible and retractable and is swivelly connected to said mounting bracket. Each of the connections between the respective parts of the apparatus is supplied with suitable friction, whereby the glare-reducing sheet may be selectively positioned in the line of sight of localized glare.

3,372,954
SLIDING ROOFS OF VEHICLES AND CONTROL AND LOCKING DEVICE THEREFOR
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Mar. 17, 1966, Ser. No. 535,177
Claims priority, application France, Apr. 8, 1965, 12,479, Patent 1,439,226; Oct. 13, 1965, 34,838, Patent 89,956
8 Claims. (Cl. 296—137)



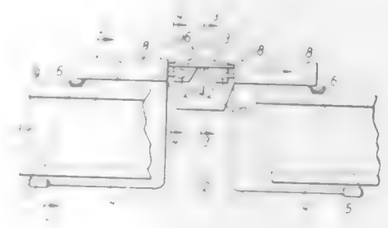
A sliding roof for closing an aperture formed in the roof of a vehicle. The sliding roof is slidably mounted between two parallel slideways provided on opposite sides of the aperture and is equipped with lock members. The slideways each consists of an angle iron having a first substantially vertical flange having an upper portion connected to a second flange directed towards the center of said aperture. The sliding roof is provided with a plurality of slide members having a slot therein for slidably engaging with said second flange. At least one slide member on each side of the roof is formed with a guide passage each having a lock rod slidably engaging therewith. The end of the lock rods disposed in the vicinity of the center of the aperture are connected to the lock control device secured to the roof. The other ends of said rods extend over the angle iron and form depending lock bolt terminal portions having fitted thereon rubber or plastic blocks disposed level with the first flange. The locking rods are guided by the slide member so that tractive force exerted on said rods by said control device towards the center of the aperture will press the blocks against the first flange of the two angle irons.

3,372,955
UNISON ACTION SEAT
Hyland C. Flint, 3551 Walnut Lake Road, Orchard Lake, Mich. 48033
Filed Aug. 16, 1965, Ser. No. 480,207
12 Claims. (Cl. 297—300)



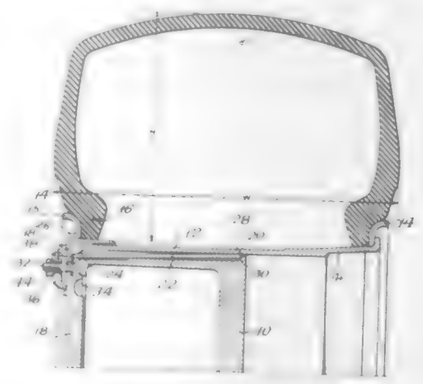
In a preferred form the subject invention relates to a type of unison action seating wherein both the seat and backrest portions of the seat are integrally formed by a spring wire member, said spring wire member being adaptable against a base or ramp portion of the seat structure which effectively shortens the lever arm of the spring as the deflection distance increases changing the spring rate in the process to inhibit further spring deflection.

3,372,956
ARTICULATED PLANER MINING MACHINE MEMBERS WITH INTERPOSED PARTITION
Willy Heyer, Bochum-Gerthe, Germany, assignor to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany
Filed June 23, 1966, Ser. No. 559,970
Claims priority, application Germany, June 29, 1965, G 44,017
7 Claims. (Cl. 299—34)



1. In a mining machine adapted to be conducted along a longitudinal guide means extending adjacent a mine face, with such mining machine in operative engagement with such mine face for extracting mineral therefrom, in which such mining machine includes a pair of longitudinally spaced apart tandem-arranged linkably interconnected base means and each said base means includes a keel adapted to underlie such guide means and slide along the mine floor thereat, said keels being correspondingly spaced apart, the improvement which comprises intermediate means interposed longitudinally between said pair of base means and articulatedly interconnecting said pair of base means, said intermediate means forming a longitudinal partition between said pair of base means which defines a cushion pocket with the adjacent portion of the mine face between said pair of base means whereby to accommodate fine particles of mineral which serve as a sealing cushion between such portion of the mine face and said intermediate means thereat to prevent excessive entry of extracted mineral into the space defined between the adjacent portions of said pair of base means, said keels, the underside of such guide means and the mine floor therebeneath.

3,372,957
WEDGE BAND FOR WHEEL RIM STRUCTURE
Forrest C. Taylor, Northlake, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,746
9 Claims. (Cl. 301—18)



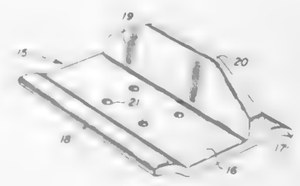
Adapter to mount single rim on dual wheel. The adapter comprises a substantially circumferentially continuous, wide wedge band which is variable in configuration, made

in one piece, and formed with an external frusto-conical surface at one end and with an internal bevel at the other.

3,372,958
AUTOMATIC FEEDER FOR PNEUMATIC CONVEYING LINES
Roe R. Black, Aurora, Nebr., assignor to York Manufacturing Company, a corporation of Nebraska
Filed May 2, 1966, Ser. No. 546,883
6 Claims. (Cl. 302—53)

A hopper with a bottom feed to a pneumatic conveying line is provided with an inlet and a valve controlling said inlet. The valve is operated automatically alternately to admit product to the hopper and to seal the inlet opening, the complete cycle being repeated several times a minute. Control of the inlet valve is in response to pressure conditions within the hopper which alternate between positive and negative pressure, positive pressure being applied to unload the hopper and negative pressure to assist in loading.

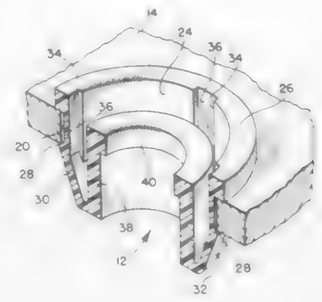
3,372,959
GROUSER FOR TRACTOR
Cleal T. Watts, Jr., Russellville, Ark. (2823 Olive, Texarkana, Tex. 75501)
Filed Aug. 5, 1966, Ser. No. 570,521
1 Claim. (Cl. 305—54)



A grouser for a crawler type tractor having endless tracks and wherein each track includes spaced parallel chains on which supporting wheels roll inwardly of the sides of each track. The invention is directed to grouser bars extending across plates which comprise the track and which bars are beveled so as to provide horizontal ground edges less than the widths of the parallel chains.

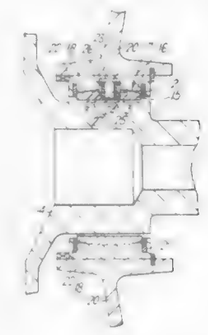
3,372,960
SELF-LOCKING BUSHING
Julian V. Fisher, Carpentersville, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 500,034
2 Claims. (Cl. 308—15)

This invention relates to a one-piece plastic bushing capable of being self-retained in an apertured workpiece for mounting a shaft in spaced relation within said



apertured workpiece and capable of permitting radial and longitudinal movement of said shaft.

3,372,961
BEARING
William John Davies and John Kenneth Rhodes, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Dec. 13, 1965, Ser. No. 513,367
Claims priority, application Great Britain, Dec. 30, 1964, 52,886/64
8 Claims. (Cl. 308—72)

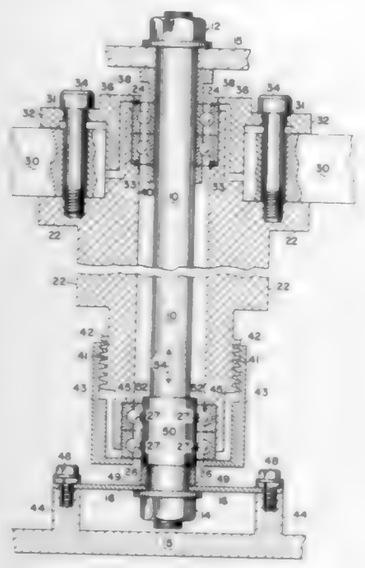


A bearing device, primarily for use in supporting the shaft of a gas turbine jet propulsion engine adapted to be used as a "tip jet" on the end of a helicopter rotor blade, has a bush within which a shaft is rotatably mounted and a fixed housing within which the bush is mounted. The outer surface of the bush is arcuate in a plane containing the axis of the shaft and abuts the inner surface of the fixed housing which is arcuate in the same plane. The radius of curvature of the inner surface of the housing is greater than the radius of curvature of the outer surface of the bush to permit the bush to rock within the housing and thus accommodate tilting of the shaft relative to the housing. The bush is biased to a tilted position with respect to the housing and shaft to prevent unobstructed axial flow passages being formed between the shaft, bush and housing.

3,372,962
SPINDLE APPARATUS USEFUL WITH ROTATING MEMORY DISCS
Clarence R. Linsley, La Crescenta, Calif., assignor to General Precision Systems Inc., a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 528,892
2 Claims. (Cl. 308—184)

A temperature compensating spindle construction for rotating memory discs. The disc-carrying end of a hollow, rotating spindle is supported upon an inserted stationary shaft by a bearing fixed on the shaft near one end. The other end of the spindle is supported upon the shaft by

a ball bearing whose inner race is an ungrooved cylindrical surface carried by the shaft adjacent its other end.



The disc end of the shaft is fixed in a supporting structure and its other end is secured to a radially rigid but axially flexible diaphragm fixed to the supporting structure.

3,372,963
CORRUGATED BEARING RING
Dwight E. Harris, Woodstock, N.Y., assignor to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York
Filed Dec. 2, 1965, Ser. No. 511,065
5 Claims. (Cl. 308—236)

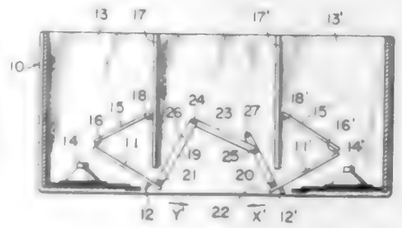
In the described embodiment of the invention, a corrugated bearing ring is interposed between the outer race of a conventional ball bearing and a supporting sleeve and secures the two elements against relative rotation. The bearing ring is formed of resilient material having a thickness so related to the radial clearance between the outer race of the ball bearing and the support sleeve that when assembled, the corrugations of the ring are essentially flattened out and the ring fills substantially all the clearance space between the ball bearing and the support sleeve.

3,372,964
KNEE SPACE FLOATING SHELF FOR DESKS
Carl A. Eversman, Toledo, Ohio, assignor to The Globe-Wernicke Co., Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 12, 1966, Ser. No. 542,102
2 Claims. (Cl. 312—194)

A floating shelf mounted in the knee space of a pedestal desk, the shelf being provided with rollers which coact with rails secured to the inner walls of the pedestals. The inner walls of the pedestals are provided with apertures and the rails are mounted on the pedestals by means of hook bolts which may be passed from the knee space through the aperture and hooked behind a flange of the pedestal whereupon they are secured by tightening a nut on

the hook bolt. The shelf is provided with a rubber mounted handle by means of which it may easily be reached for moving the shelf in or out.

3,372,965
DEVICE FOR OPENING OR CLOSING TWO DOORS SIMULTANEOUSLY
Hideki Abe, Tokyo, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan
Filed Feb. 15, 1966, Ser. No. 527,569
Claims priority, application Japan, Feb. 25, 1965 (utility model), 40/14,298
4 Claims. (Cl. 312—275)

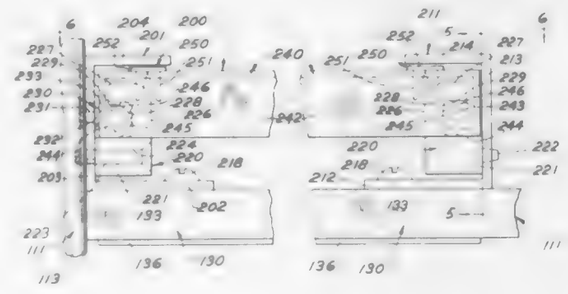


A device for simultaneously opening or closing two doors comprising first and second adjacent doors, first and second side plates each having one end pivotally connected to a fixed frame and the other end thereof being pivotally connected to the respective one of said doors for pivotal motion about said frame, first and second levers each of which has one end pivotally connected to the respective one of said doors for swinging motion through an angle about the center of swinging motion of the lever in conjunction with the movement of the door, and means for transmitting the turning force of one of said first and second levers to the other said lever in such a manner that when said one lever swings, the other lever is caused to swing in the direction opposite to the direction in which said one lever swings whereby each of said levers causes one of said first and second doors to move in the direction opposite to the direction in which the other of said doors moves when one door is opened or closed.

3,372,966
SLIDING SHELF
Le Roy W. Duy, Aurora, Ill., assignor to Lyon Metal Products, Incorporated, Aurora, Ill., a corporation of Illinois
Filed June 13, 1966, Ser. No. 557,134
18 Claims. (Cl. 312—341)

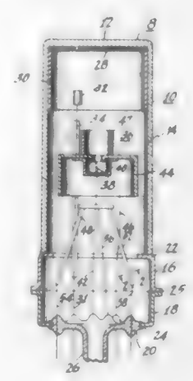
A storage cabinet and sliding shelf construction comprising a cabinet including a body having a front opening therein, a support member disposed in the body and in general longitudinal alignment with the front opening, a pair of spaced apart rails mounted within the body upon the support member with the longitudinal axes of the rails

disposed generally parallel to each other and in longitudinal alignment with the front opening, a front pair of lubric glides respectively mounted on the forward ends of the rails in general horizontal alignment, a rear pair of lubric glides respectively mounted on the rails in general horizontal alignment and in general longitudinal alignment with the front pair of lubric glides and spaced a short distance rearwardly thereof, and a shelf disposed in the body and including a main panel and a pair of side panels integral therewith and a pair of support flanges respectively mounted on the side panels and extending in-



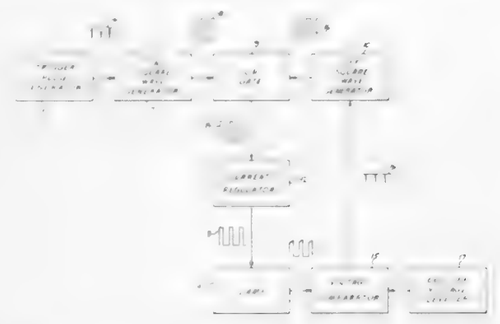
wardly therefrom, each of the glides including a lower support surface extending below the associated one of the support flanges for engagement therewith and an upper support surface extending over the associated one of the support flanges for engagement therewith, the shelf being shiftable longitudinally on the glides relative to the rails between a storage position fully disposed within the body and an extended position at least partially disposed outwardly with respect to the body, the shelf being supported upon the glides in cantilever fashion in both the storage position thereof and the fully extended position thereof.

3,372,967
METHOD OF MAKING A MULTI-ALKALI CATHODE
Frederick R. Hughes, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 6, 1966, Ser. No. 563,255
5 Claims. (Cl. 316—5)



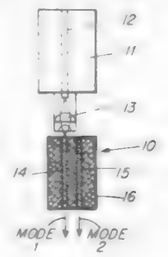
A multi-alkali photocathode including antimony, potassium, sodium and cesium is made by co-evaporating potassium and sodium from a common channel and sequentially evaporating antimony and cesium from two other channels. Substantially the same temperature, i.e., from 160° C. to 175° C., is preserved during the co-evaporation of potassium and sodium and the evaporation of cesium.

3,372,968
FLASH GETTERING METHOD AND APPARATUS HAVING PULSE DURATION CONTROL
Willard M. Grimes, Jr., Bloomfield, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 29, 1964, Ser. No. 407,295
17 Claims. (Cl. 316—25)



A lamp gettering method and apparatus which provides a series of constant current pulses of predetermination duration and magnitude through a filament sufficient to flash getter material from the filament but insufficient to cause the filament to recrystallize and thus become brittle. The IR drop across the filament is sensed, compared to a maximum permissible value and the duration of the constant current pulses controlled to maintain the IR drop across the filament and hence the getter flashing temperature at a predetermined level.

3,372,969
HIGH RESOLUTION FILTER FOR LASER-EMISSIVE ENERGY
Elias Snitzer, Sturbridge, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Dec. 6, 1963, Ser. No. 328,710
1 Claim. (Cl. 350—96)

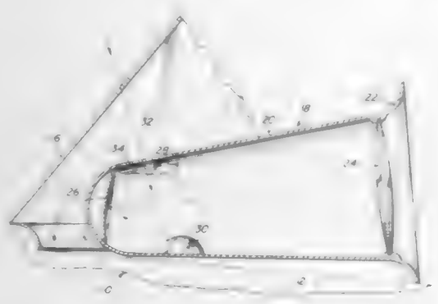


A mode selection filter for laser-emissive energy wherein two fiber devices are provided in parallel relationship within an enclosing cladding material which permits fringing of light from one fiber to the other. The laser light is applied to the end of one fiber, which, along with the other fiber, has preselected transverse parameters so that only desired modes are propagated. The length of fibers is then properly chosen so that only one mode will exit from each fiber.

3,372,970
TRAFFIC LIGHT INDICATOR
Oliver D. Winkle, 908 E. Lee St., Tucson, Ariz. 85719
Filed Feb. 28, 1964, Ser. No. 348,078
4 Claims. (Cl. 350—100)

An elongated generally cylindrical housing for mounting on the dashboard of a vehicle in generally horizontal position with the housing extending longitudinally of the vehicle and the forward end of the housing disposed closely adjacent the lower marginal edge portion of a forwardly and downwardly inclined windshield of the vehicle, the

forward end of the housing being closed and having a circumferentially extending aperture formed in its upper wall portion with a concave rearwardly facing mirror disposed in the forward end of the housing forward of the aperture, a converging lens recessed in the open rear end of the housing and a convex spherical mirror disposed in



the housing below the longitudinal center line thereof forward of the concave mirror for reflecting light rays passing downwardly through the viewing aperture in a rearward and downwardly inclined direction forwardly and upwardly onto the concave mirror for subsequent reflection rearwardly through the converging lens.

3,372,971
OPTICAL SYSTEM AND MATERIALS
John J. Quackenbush, Monroe, and Herbert O. Corbett, Bridgeport, Conn., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Dec. 28, 1964, Ser. No. 421,227
7 Claims. (Cl. 350—117)

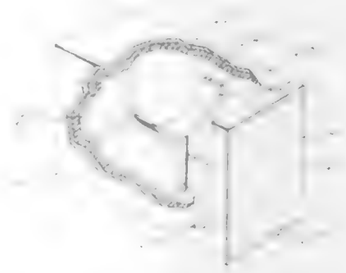
A projection screen and projection system in which the projection screen is flexible and formed of two or more extruded layers of plastic material which are intimately bonded to one another along their adjacent surfaces. One layer is composed of a mixture of polyethylene and polypropylene, while the other is composed of a copolymer of polyethylene and polypropylene with the total screen thickness being about 100 mils. An excellent image from the projector is formed on the surface of the screen remote from the projector, while a poor image is developed on the front surface of the screen. The screen can be formed of three layers of plastic material, each having a thickness of 30 mils, where the two outer layers may be of the same material.

3,372,972
OPTICAL BEAM DEFLECTOR
Uwe J. Schmidt, Canoga Park, Calif., and Frithjof N. Mastrup, Simi, Calif., assignors to TRW, Inc., a corporation of Ohio
Filed July 30, 1962, Ser. No. 213,235
3 Claims. (Cl. 350—160)

1. An optical energy beam deflector comprising:
a light energy source;
means for transmitting a light beam from said source along a path;
a material positioned in said path having a first index of refraction whereby the light beam passes through the material and leaves in a given direction, said material having chromium atoms therein; and
means for varying the index of refraction of said material in a direction transverse to said beam path,

said last mentioned means exciting more chromium atoms in said material on one side of the beam than on the other side,
thereby varying the population density of energy levels transverse to the beam path and laterally across said material effectively changing said given direction.

3,372,973
TWO-DIMENSIONAL BEAM SCANNING DEVICE
David E. Flinchbaugh, Andover, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 430,957
11 Claims. (Cl. 350—161)



A liquid acoustic cell has a curved or cylindrical transducers therein to which a sinusoidal actuating voltage is applied to produce focused acoustic waves therein. An optical beam passed through the cell adjacent the focal point of the acoustic waves will be deflected in a circular scanning motion.

3,372,974
MECHANICALLY COMPENSATED ZOOM LENS SYSTEM
Walter R. Linke, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 2, 1964, Ser. No. 356,769
3 Claims. (Cl. 350—186)

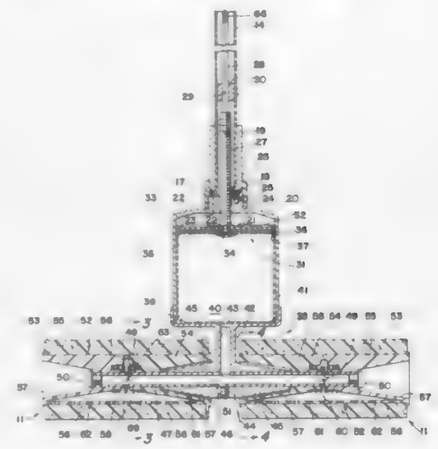
An optical zoom system having a positive member movable for zooming and mounted between and in axial alignment with a front negative member, movable for

image compensation, and a fixed rear positive member or prime lens, the said zoom system being highly corrected for lens aberrations at large apertures. The movable positive member may comprise two biconvex components or a cemented triplet and a single lens element or four lens elements including two cemented surfaces of negative power.

3,372,975
PAINT APPLICATORS
Elias J. Johnson, 122 S. 80th St., Milwaukee, Wis. 53213
Filed Oct. 20, 1965, Ser. No. 498,650
2 Claims. (Cl. 401—183)

A paint applicator including a handle reservoir for the paint containing internal spring means and communicating with a sleeve, and a hollow element pivoted on the opposite end of said sleeve triangular in cross-section and covered with absorbent material through which the paint exudes for transfer to a surface to be painted.

3,372,976
FLOOR WAXER
Charles H. MacFarland, Rocky River, Ohio, assignor to The Scott & Fetzer Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 12, 1965, Ser. No. 479,175
7 Claims. (Cl. 401—197)



A roller applicator for applying wax to a floor having a pair of hollow wax applying rollers supported on a non-rotating hollow axle, a combined handle and wax storage container mounted above the rollers, and a supply tube from the wax storage container to the hollow axle, through the hollow axle and into the chamber defined by each hollow roller.

CHEMICAL

3,372,977
PROCESS OF CREASEPROOFING CELLULOSIC TEXTILES WITH A SINGLE AQUEOUS SOLUTION CONTAINING BOTH d,l-BUTADIENE DIOXIDE AND A LEWIS BASE CATALYST
Ralph J. Berni, Ruth R. Benerito, and John B. McKelvey, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Aug. 27, 1965, Ser. No. 483,372
1 Claim. (Cl. 8—120)

1. A process for imparting improved wet and dry crease recovery to cellulosic textile comprising reacting cellulosic textile containing free cellulose hydroxyl groups by immersing said textile in an aqueous solution consisting essentially of d,l-butadiene dioxide and a Lewis base catalyst in molar ratio of from about 1:2:0.16 to 1:4:0.50, respectively of anhydroglucose units of cellulose:d,l-butadiene dioxide:catalyst, for a period of time from about 10 minutes to 24 hours at room temperatures, said aqueous solution being produced by dissolving the d,l-butadiene dioxide in water and then adding said catalyst.

3,372,978
FIBROUS MATERIAL CARRYING A DEPOSIT OF A CROSS-LINKED POLYMER
Robert E. Whitfield, Pleasant Hill, Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed May 28, 1964, Ser. No. 371,150
15 Claims. (Cl. 8—127.6)

Fibrous materials, such as wool, cotton, rayon, nylon, etc., are modified by applying thereto a pre-formed polymer and cross-linking it to form a three-dimensional structure, the cross-linking being accomplished by reaction of the pre-formed polymer and the fixative at a phase boundary. In a typical embodiment, wool is first impregnated with an aqueous solution of the fixative, e.g., a diamine such as hexamethylene diamine. The wool is then impregnated with a solution of a pre-formed polymer in a water-immiscible solvent such as carbon tetrachloride. The polymer may be, for example, a copolymer of ethylene and methacryloyl chloride. By serial application of these solutions to the fabric, each fibrous element is coated with a two-phase system, for example, an inner layer of diamine in water and an outer layer of the highly reactive polymer in water-immiscible solvent. Under these conditions, the diamine and the polymer react almost instantaneously at the boundary between the phases, producing in situ on the fiber a cross-linked, insoluble, resin coating. By suitable selection of the complementary reactants, a wide variety of polymeric, fiber-modifying agents can be cross-linked in situ on fibers to yield such improvements as increased resistance to shrinkage when subjected to washing operations; increased resistance to soils, bleaches, and light; decreased tendency of the textiles to becoming creased or wrinkled, etc.

3,372,979
PRODUCTION OF ALKALI-SOLUBLE CELLULOSIC TEXTILE MATERIALS BY THE ALUMINUM NITRATE TREATMENT OF PARTIALLY ETHERIFIED COTTONS AND THE OXIDATION OF CELLULOSE WITH ALUMINUM NITRATE
Robert M. Reinhardt, New Orleans, and Russell M. H. Kullman, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Feb. 17, 1965, Ser. No. 433,523
8 Claims. (Cl. 8—120)

1. A process for producing an alkali-soluble cellulosic textile that substantially retains its textile properties which comprises partially etherifying cotton textile to a degree of substitution of from about 0.04 to about 0.40 ether groups per anhydroglucose unit, said ether group being a member selected from the group consisting of

carboxyethyl, carboxymethyl, hydroxyethyl, methyl, phosphonomethyl, ethyl, alpha-methylcarboxymethyl, aminoethyl, carbamoylethyl and sulfoethyl, and oxidizing said partially etherified cotton textile by impregnating it to about 100% pickup with an aqueous solution of aluminum nitrate having a concentration from about one weight percent to a saturated solution, and dry heat treating the aluminum nitrate impregnated partially etherified cotton textile at a temperature of from about 120° to about 160° C. for from about one to about five minutes, the time and temperature of the heat treatment being inversely related, to dry said etherified cotton textile and decompose the aluminum nitrate.

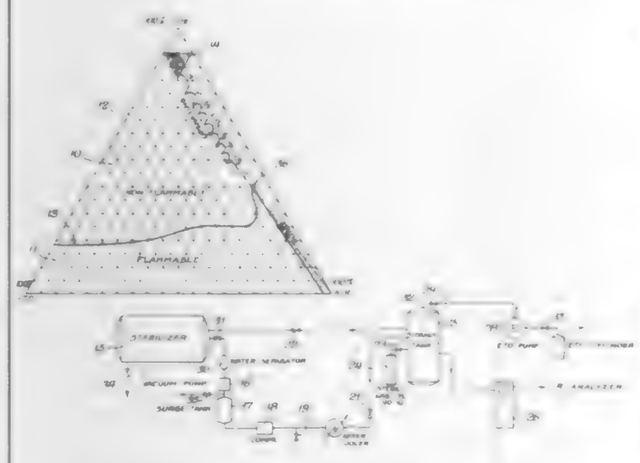
8. A process for the oxidation of cellulose which comprises impregnating the cellulose to about 100% pickup with an aqueous solution consisting essentially of aluminum nitrate having a concentration from about one weight percent to a saturated solution, and dry heat treating the aluminum nitrate impregnated cellulose at a temperature of from about 120° to about 160° C. for from about one to about five minutes, the time and temperature of the heat treatment being inversely related, to dry said cellulose and decompose the aluminum nitrate.

3,372,980

RECYCLIZATION OF ETHYLENE OXIDE

Donatas Satas, Palatine, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed July 5, 1963, Ser. No. 293,120
10 Claims. (Cl. 21—58)



A method of sterilizing with a mixture of ethylene oxide and inert gas which allows safe and uniformly effective reuse of the sterilizing gas for a plurality of successive sterilization cycles. The gas mixture is refortified with substantially pure ethylene oxide when necessary so that the mixture contains at least 10% ethylene oxide at the start of each sterilization cycle, and the mixture is vented to the air while its composition is such that it will not pass through a flammable state when diluted with air.

3,372,981

STABILIZATION OF MONOETHANOLAMINE SOLUTIONS IN CARBON DIOXIDE SCRUBBERS

Harold Ravner, Accokeek, and Charles H. Blachly, West Hyattsville, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Mar. 11, 1965, Ser. No. 439,110
2 Claims. (Cl. 23—4)

Aqueous monoethanolamine solutions which contain trace amounts of copper and iron compounds are used as absorber solutions for carbon dioxide in air purifying systems when stabilized to aeration-oxidation by the addition thereto of equal amounts of the monosodium salt of N,N-diethanolglycine and tetrasodium ethylenediamine tetraacetic acid which are in the range of from 4.8 to 8% by weight on the monoethanolamine content of the solutions.

3,372,982

METHOD OF RECOVERY OF VANADIUM FROM ITS ORES

Wayne C. Hazen, Denver, Colo., assignor to Hazen Research Inc., Golden, Colo., a corporation of Colorado

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,189
5 Claims. (Cl. 23—18)

1. A process for the recovery of vanadium from its ores which comprises: treating the ore with a solvent to bring the vanadium into solution; oxidizing the vanadium in solution to the pentavalent state; adjusting the pH of the solution to a value between about 1 and about 6; contacting the solution with charcoal to adsorb the vanadium; stripping the adsorbed vanadium from the charcoal with a solvent for the vanadium to form a substantially pure solution of vanadium and recovering the vanadium from the stripping solution by precipitation.

5. A method for the recovery of vanadium from solutions containing vanadium in the pentavalent state which comprises adjusting the pH of the solution to a value between about 1 and about 6; contacting the solution with charcoal to adsorb the vanadium on the charcoal; stripping the vanadium from the charcoal with a solvent for the vanadium to form a relatively pure solution of vanadium; and recovering the vanadium from the strip solution by precipitation.

3,372,983

CHEMICAL PROCESSES AND PRODUCTS RESULTING THEREFROM

Edward L. Moore, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,852
6 Claims. (Cl. 23—106)

A sodium tripolyphosphate product having improved hydration characteristics and exhibiting a new X-ray diffraction pattern, and a process for producing the new improved crystalline sodium tripolyphosphate comprising lowering the temperature of heated, low temperature form sodium tripolyphosphate at an average rate of at least about 25° C. per minute through the temperature range of 350° C. to 125° C.

3,372,984

TRISODIUM DIPOTASSIUM TRIPOLYPHOSPHATES AND PROCESSES FOR THEIR MANUFACTURE

Joe S. Metcalf, Trenton, Mich., and Kenneth J. Shaver and Chung Yu Shen, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 21, 1964, Ser. No. 361,566
18 Claims. (Cl. 23—107)

The new compounds selected from the group consisting of hydrated and anhydrous trisodium dipotassium tripolyphosphates and a process for producing them comprising reacting in an aqueous slurry a strong base selected from the group consisting of strong sodium cation-bearing bases and strong potassium cation-bearing bases and a triphosphate selected from the group consisting of (1) acidic tripolyphosphates containing at most three alkali metal cations per molecule selected from the group consisting of Na and K and (2) trimetaphosphates containing from 1 to 3 alkali metal cations selected from the group consisting of Na and K; the ratio of K:Na in the slurry being from about 1:3 to about 1:7 and the ratio of the free water to the combined weights of said strong base and said triphosphate in said slurry being at most about 0.65:1.

3,372,985

PROCESS FOR REMOVING IMPURITIES FROM THE PRECIPITATION SYSTEM OF THE BAYER PROCESS

Reginald F. Roberts, Jr., and Robert H. Lister, Baton Rouge, La., and William A. James, Toronto, Ontario, Canada, assignors to Kaiser Aluminum and Chemical Corporation, Oakland, Calif., a corporation of Delaware

Continuation of application Ser. No. 259,826, Feb. 20, 1963. This application June 5, 1967, Ser. No. 645,544
10 Claims. (Cl. 23—143)

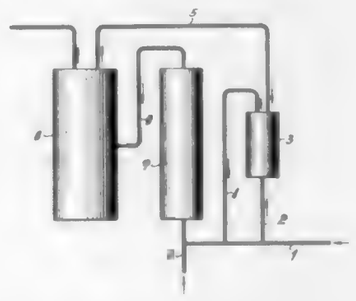
1. In the Bayer process wherein alumina is extracted from aluminous material by digesting said aluminous material in a caustic liquor and said extracted alumina is precipitated from pregnant caustic liquor containing oxalate as a contaminant, which oxalate also precipitates and contaminates the precipitated alumina hydrate, and the precipitated solids are separated from the major portion of the mother liquor after which the concentrated solids-containing slurry is classified according to particle size into product alumina hydrate and alumina hydrate seed for recycle to the aforesaid precipitation, the improvement in particle size control and increased capacity of precipitation comprising separating the spent caustic liquor from the alumina hydrate seed by filtering and subjecting the alumina hydrate filter cake to cold water washing, the amount of cold water used being not in excess of that which is sufficient to remove substantially all of the spent caustic liquor remaining in the seed solids, recycling of the spent caustic liquor to the digestion phase of the Bayer process, subjecting the cold-water-washed-alumina hydrate to a washing with hot water to dissolve substantially all of the sodium oxalate contaminant, separating the washed seed from the oxalate-containing wash liquor, and thereafter recycling the washed seed to the precipitation reaction.

3,372,986

PROCESS FOR PRODUCING HYDROCYANIC ACID AND ACRYLONITRILE FROM ACROLEIN-CYANOHYDRIN

Kurt Sennewald, Wilhelm Vogt, and Klaus Gehrmann, Knapsack, near Cologne, and Alexander Oborodnik, Berrenrath, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Aug. 29, 1963, Ser. No. 305,366
Claims priority, application Germany, Sept. 15, 1962, K 47,740
6 Claims. (Cl. 23—151)



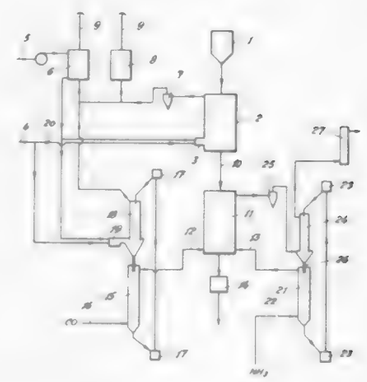
1. A process for producing acrylonitrile and hydrocyanic acid comprising contacting acrolein-cyanohydrin reactant with reactive amounts of ammonia and at least one substance selected from oxygen and air and effecting the reaction at a temperature of about 300–550° C. in the presence of a catalyst consisting substantially of at least one oxide of an element selected from the group consisting of barium, rhenium, rhodium, palladium, antimoney, aluminum, thorium, molybdenum, vanadium, tin, chromium, tungsten, cobalt, iron, manganese, nickel, copper, bismuth, titanium, zinc, cadmium, silver, gold, lead, niobium, tantalum, uranium, cerium and phosphorus.

3,372,987

PREPARATION OF COMPOUNDS CONTAINING A CN LINKAGE

Hermann Kronacher, Trostberg, Upper Bavaria, Germany, assignor to Suddeutsche Kalkstickstoff-Werke Aktiengesellschaft and Dr. C. Otto & Comp. G.m.b.H., Trostberg, Upper Bavaria, and Bochum, Germany

Filed Dec. 24, 1964, Ser. No. 420,961
1 Claim. (Cl. 23—151)



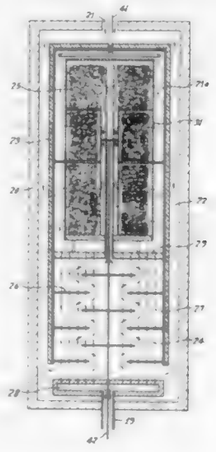
In the preparation of —CN compounds from ammonia and carbon monoxide or hydrocarbons, the latter are preheated in contact with copper or copper alloys as circulating heat transfer material to a temperature above the reaction temperature and then passed with ammonia of lower temperature through the reaction zone whereby the temperature of said zone is controlled by the amount and temperature of the preheated carbon supplying gas.

3,372,988

PROCESS AND APPARATUS FOR PERFORMING REACTIONS IN THE GASEOUS PHASE

Hans Jürgen Hansen, Lyngby, Denmark, assignor to Haldor Topsøe, Hellerup, Denmark, a company of Denmark

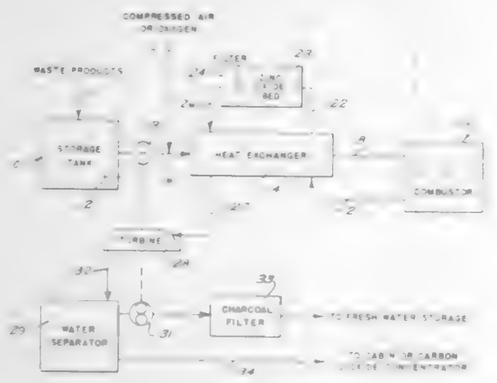
Filed Sept. 18, 1964, Ser. No. 397,481
Claims priority, application Denmark, Sept. 28, 1963, 4,572
10 Claims. (Cl. 23—198)



This invention relates to a process and apparatus for performing catalytic reactions in the gaseous phase, the apparatus including a pressure shell preferably having a

plurality of bodies of catalyst therein, means for passing a synthesis gas into the pressure shell, means for passing the gas through the catalyst bodies successively in a radial direction, and means for withdrawing a product gas from the pressure shell.

3,372,989
WASTE COMBUSTION AND WATER RECOVERY SYSTEM
Martin R. Macklin, Cleveland, Ohio, assignor to TRW Inc., a corporation of Ohio
Filed Apr. 1, 1964, Ser. No. 356,468
8 Claims. (Cl. 23—204)



Method and apparatus for recovering potable water from an organic waste product wherein the product is passed through a heat exchanger where it is heated sufficiently to volatilize the water present and to vaporize the organic volatiles, the vaporous mixture is then oxidized in a combustion zone, the combustion products are recirculated to the aforementioned heat exchanger, the combustion products are filtered and finally water vapor is condensed therefrom.

3,372,990
CYCLIC PROCESS FOR MANUFACTURING HYDROGEN PEROXIDE
Michel Charret, Champ-sur-Drac, France, assignor to Oxysynthese, Paris, France
No Drawing. Filed Mar. 26, 1965, Ser. No. 443,092
Claims priority, application France, Apr. 16, 1964, 971,147, Patent No. 1,405,861
7 Claims. (Cl. 23—207)

The present disclosure relates to a process for manufacturing hydrogen peroxide by reducing a quinone compound and oxidizing the resultant hydroquinone compound, and separating the hydrogen peroxide formed. The process involves the introduction into the working solution of an aqueous solution of an acid pyrophosphate of an alkali metal, particularly disodium acid pyrophosphate. Preferably, ammonium nitrate is also needed.

3,372,991
METHOD OF PRODUCING PYROLYTIC GRAPHITE
William H. Avery, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 14, 1964, Ser. No. 392,071
4 Claims. (Cl. 23—209.3)

The invention relates to a method for producing anisotropic graphite from ordinary graphite. According to the invention, a block of ordinary graphite is first shaped to a configuration having a reduced central portion between enlarged end portions. Pressure and electric current are applied on the graphite block through its enlarged end portions, thereby creating anisotropic graphite in the reduced central portion of said block. The central portion is then cut out or otherwise removed from the remainder of the graphite block.

3,372,992
METHOD FOR DETERMINING BLOOD SERUM IRON-BINDING CAPACITY
Robert H. Storey, Waukegan, Howard J. Glenn, Lake Bluff, and William J. O'Malley, Gurnee, Ill., assignors to Abbott Laboratories, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Sept. 30, 1964, Ser. No. 400,588
5 Claims. (Cl. 23—230)

1. A method for measuring the unsaturated iron-binding capacity of serum which comprises the steps of: mixing a tracer amount of radioactive iron with blood serum; placing in intimate contact with said mixture a resin sponge comprising a polyurethane foam of intercommunicating cell type containing a strong base anion-exchange resin; incubating the mixture and the resin sponge; measuring the initial radioactivity of the combined mixture and resin sponge with suitable detecting means; removing the resin sponge from the mixture; washing the resin sponge with an aqueous solution; and measuring the residual radioactivity in the resin sponge.

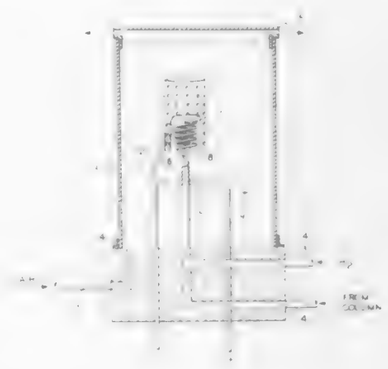
3,372,993
SCRAP SAMPLING METHOD
Edward E. Brown, Marietta, Ohio, assignor to Interlake Steel Corporation, a corporation of New York
Filed Sept. 11, 1963, Ser. No. 308,161
16 Claims. (Cl. 23—230)

1. In a method providing a sample for metallurgical analysis the steps comprising, selecting an original sample from a quantity of ferrous material containing tramp elements, reducing the ferrous material into relatively small particle size, mixing the particles into a substantially homogeneous mixture, selecting a test sample of predetermined size from said mixture, introducing said test sample into a container, introducing a stream of oxygen into said container, igniting and burning the test sample in the presence of said oxygen for a time sufficient to convert said test sample to a molten condition, said burning indicated by a glow emitted from said container, continuing to burn said material for a time sufficent to convert the tramp elements of said test sample to molten oxides indicated by an initial disappearance of said glow, placing an oxygen introducing lance in close, spaced proximity to said molten oxides and moving said lance relative to said molten oxide with a stirring-like action to impart agitation to the molten oxides, allowing the molten oxides to solidify into a solid mass, removing the solid mass from the container and reducing the solid mass into relatively fine particles size, and then analyzing the chemical composition of said particles.

3,372,994
FLAME IONIZATION DETECTOR
Laura E. Giuffrida, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare and the Secretary of the Department of Agriculture
Filed Jan. 8, 1965, Ser. No. 424,443
4 Claims. (Cl. 23—254)

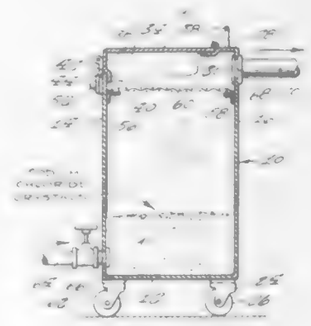
A hydrogen flame ionization detector, for use in gas chromatography, the heated electrode being coated with a fused alkali metal salt. Coating the electrode in this

manner renders the detector selectively specific to phosphorus-containing organic compounds in mixtures, so that higher, more characteristic peaks are indicated when these



mixtures are analyzed, while smaller peaks, or none at all, are indicated for the non-phosphorus-containing components of the mixtures.

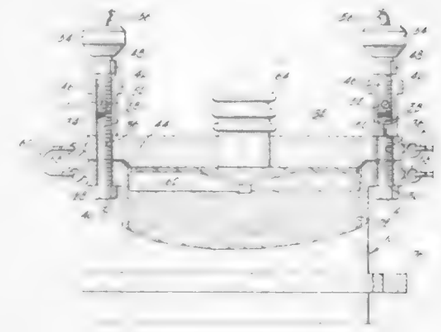
3,372,995
PORTABLE SALT DISSOLVER FOR MELTING ICE AND SNOW
Joseph D. Ryan, Box 4136, Bergen Station, 267 Cator Ave., Jersey City, N.J. 07305
Filed Dec. 31, 1964, Ser. No. 422,813
1 Claim. (Cl. 23—267)



An apparatus having a tank for containing sodium chloride crystals, the tank having an inlet at the lower end and an outlet at the upper end for passing water therethrough, the dispensing liquid comprising a solution including dissolved sodium chloride, the solution being used for spraying over a sidewalk or roadway to prevent formation of, or dissolving existing ice and snow, the tank including a water-tight door at its upper end for use to replenish the sodium chloride crystals when used up.

3,372,996
UNDERWATER GAS GENERATOR
Wayne T. Barrett, Malvern, and Charles L. Scheer, Berwyn, Pa., assignors to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania
Filed Oct. 14, 1963, Ser. No. 317,100
8 Claims. (Cl. 23—282)

A gas generator, particularly adapted for underwater use in forming hydrogen gas by mixing water with a paste of lithium hydride in a water soluble organic dispersant, utilizes a container having a cover at one end secured by explosive bolts and a piston within the container movable from near the closed end toward the open end of the container. The container, which is normally sealed and provided with a bellows for equalizing pressures, is adapted to contain the lithium hydride paste on both sides of the piston. A pressurized source of water is connected by way of an explosively actuatable valve to the lower closed interior end of the container, so that, when the explosive bolts and the valve are operated simultaneously, water is forced into the lower end of the container, which reacts with the lithium hydride paste therein to generate a gas for driving the piston toward the open end of the container. The remaining lithium hydride paste is thereby



rapidly swept out through the open end of the container around the edges of the cover, an arrangement of vanes preferably providing turbulent mixing of the expelled lithium hydride with the surrounding water to produce hydrogen. The arrangement is suitable for generating gas to expel water from pontoons, or for the filling of weather balloons, for example.

3,372,997
TERNARY COPPER, ZINC, CADMIUM AND MANGANESE DICHALCOGENIDES HAVING THE PYRITE-TYPE CRYSTAL STRUCTURE
Tom A. Bither, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 22, 1966, Ser. No. 603,759
17 Claims. (Cl. 23—315)

Ternary dichalcogenides having the pyrite-type crystal structure of the formula $M_yM'_{1-y}X_z$ wherein M is copper, zinc or cadmium, M′ is manganese, zinc or cadmium, X is sulfur, selenium or tellurium, y is a number between 0.20 and 0.96 and z is a number between 1.9 and 2.1 are produced. These compounds are prepared by subjecting mixtures of elements or mixtures of chalcogenides and the chalcogen to pressures between 50–100 kilobars and temperatures between 600–1200° C. The products are useful as components for electrical circuitry.

3,372,998
REPROCESSING OF SPENT URANIUM FUEL BY MEANS OF CHLORINATION AND FRACTIONAL ABSORPTION BY BARIUM CHLORIDE
Takehiko Ishihara and Kenmei Hirano, Mito-shi, Ibaraki-ken, and Takeshi Soga, Naka-gun, Ibaraki-ken, Japan, assignors to Japan Atomic Energy Research Institute, Tokyo, Japan
No Drawing. Filed Mar. 4, 1966, Ser. No. 531,773
Claims priority, application Japan, Mar. 18, 1965, 40/15,390
10 Claims. (Cl. 23—326)

Spent uranium fuel from an atomic reactor is converted at about 600° C. by reaction with a chlorine-bearing carbon compound free from hydrogen into gaseous

chlorides of uranium, mainly the tetrachloride, and of the fission products. Uranium tetrachloride is preferentially absorbed from the chloride mixture on barium chloride with which it forms a stable compound below 583° C. The compound is decomposed by chlorine to volatile uranium hexachloride. The latter decomposes spontaneously to the tetrachloride which may be recycled for further purification.

3,372,999

CONTINUOUS PRECIPITATION PROCESS FOR RECOVERING URANIUM AND/OR PLUTONIUM FROM SOLUTION

David Gordon Stevenson, Kempshott, Basingstoke, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Mar. 9, 1965, Ser. No. 438,195
Claims priority, application Great Britain, Mar. 20, 1964, 12,027/64
7 Claims. (Cl. 23—332)

The invention relates to an improvement in a continuous process for precipitating uranium and plutonium compounds from solution by adding a base thereto. In accordance with the invention, readily filterable precipitates are obtained by introducing an acidic aqueous solution of a metal to be precipitated together with a base into a precipitation zone in the presence of an aliphatic monocarboxylic acid having from 1 to 5 carbon atoms.

3,373,000

PROCESS FOR PREPARING TETRAFLUORIDES AND HEXAFLUORIDES

James J. Pitts, West Haven, and Albert W. Jache, North Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Nov. 1, 1966, Ser. No. 591,079
9 Claims. (Cl. 23—352)

The tetrafluorides and hexafluorides of sulfur, selenium and tellurium are provided by reacting chlorine monofluoride with sulfur, selenium, tellurium, metal sulfides, metal selenides or metal tellurides. The hexafluorides of tungsten, molybdenum and uranium are provided by the reaction of chlorine monofluoride with the metals, their oxides, sulfides and salts containing the metallate anion. These tetrafluorides and hexafluorides are well-known compounds, useful as fluorinating agents, gaseous dielectrics, sources of high purity metallic powders, etc.

3,373,001

INORGANIC POLYMERS

William C. Drinkard, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 18, 1963, Ser. No. 331,379
16 Claims. (Cl. 23—358)

New B_{10} boron-cage radicals and wholly inorganic polymers containing these B_{10} boron-cage radicals and a process for their manufacture. The process comprises reacting a lower oxide of a Group V, VI, or VII element in a solution of $(H_3O)_2B_{10}H_{10}$ at a temperature of 0° C. to 50° C.

3,373,002

BERYLLIUM-ALUMINUM-COPPER COMPOSITES

Earl I. Larsen, Indianapolis, Ind., and Richard H. Krock, Peabody, and Clintford Ross Jones, Arlington, Mass., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed May 11, 1967, Ser. No. 637,737
4 Claims. (Cl. 29—182.1)

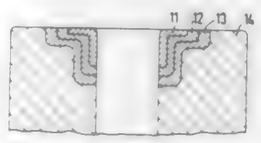
A two phase composite material whose microstructure consists of beryllium dispersed in an aluminum-copper-beryllium solid solution alloy matrix was produced by liquid phase sintering pressed powder mixtures of beryllium, aluminum and copper.

3,373,003

MULTI-LAYER BONDED METAL STRUCTURE

Horst Schreiner, Nurnberg, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Mar. 28, 1966, Ser. No. 537,896
Claims priority, application Germany, Apr. 1, 1965, S 96,322
1 Claim. (Cl. 29—182.2)



Disclosed is an improved multi-layer bonded metal structure suitable for use in high voltage and heavy duty electrical contacts. The multi-layer bonded metal structure consists essentially of a sintered plurality of substantially parallel compressed metal powder layers. These layers respectively consist of a first metal composition which is impregnated with a second metal. The abutting surfaces of the respective layers interpregnate into one another. The metal layers are selected from the group consisting of tungsten, molybdenum and rhenium and the impregnating metal is selected from the group consisting of copper, silver, copper alloys, silver alloys, nickel, iron, cobalt and chromium.

3,373,004

COMPOSITES OF BERYLLIUM-ALUMINUM-COPPER

Earl I. Larsen, Indianapolis, Ind., and Richard H. Krock, Peabody, and Clintford R. Jones, Arlington, Mass., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed May 26, 1967, Ser. No. 641,622
4 Claims. (Cl. 29—182.2)

A composite material whose microstructure consists of beryllium dispersed in an aluminum-copper-silicon-beryllium solid solution alloy matrix was produced by liquid phase sintering pressed powder mixtures of beryllium, aluminum, copper and silicon or powder mixtures of beryllium and pre-alloyed aluminum-copper-silicon.

3,373,005

MOTOR FUELS

Edmund L. Niedzielski, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 1, 1964, Ser. No. 364,290
12 Claims. (Cl. 44—69)

1. A motor fuel consisting essentially of
(a) a mixture of hydrocarbons boiling in the gasoline boiling range in which from 15 to about 75 volume percent are aromatic hydrocarbons,
(b) an antiknock quantity of at least one tetraalkyl lead antiknock compound,
(c) at least one halogenated hydrocarbon scavenger for the lead in the antiknock compound, and

(d) from 1 to about 30 moles of a lead appreciator for each mole of tetraalkyl lead antiknock compound,
(e) said lead appreciator consisting of at least one polyacylated nitrogen base which has the formula

$$(R-\overset{O}{\overset{\|}{C}}-)_{p-n}N[(-O-\overset{O}{\overset{\|}{C}}-)_p-R']_n$$

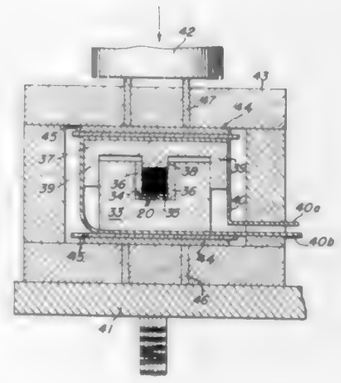
wherein R is a hydrocarbon radical of 1–7 carbon atoms devoid of aliphatic unsaturation, R′ is a member of the group consisting of hydrogen and hydrocarbon radicals of 1–7 carbon atoms devoid of aliphatic unsaturation, at least two of the R and R′ groups are alkyl radicals of 1–7 carbon atoms, n is zero to 1, p is zero to 1, and n is 1 when p is 1.

3,373,006

APPARATUS FOR MAKING FIBER OPTICAL IMAGE TRANSFER DEVICES

Richard F. Woodcock, Woodstock, Conn., assignor, by mesne assignments, to American Optical Company, Southbridge, Mass., a corporation of Massachusetts

Application Nov. 23, 1960, Ser. No. 71,872, now Patent No. 3,215,029, Nov. 2, 1965, which is a continuation-in-part of application Ser. No. 826,762, July 13, 1959. Divided and this application Nov. 16, 1964, Ser. No. 422,873
3 Claims. (Cl. 65—1)



Supporting means of refractory material for compacting and fusing a length of bundled glass clad fibers. The supporting means has a bottom member, a cover member, side walls and opposite open ends forming a channel in which the bundle may be placed for compaction and fusion. Facing sides of the bottom and cover members have oppositely disposed portions of their lengths sloped gradually away from each other in directions from points internally of the channel toward each of its opposite open ends. At least one of the members is movable toward the other for compressing the length of bundled fibers to a greatest amount intermediately of its extension and in progressively lesser amounts away therefrom.

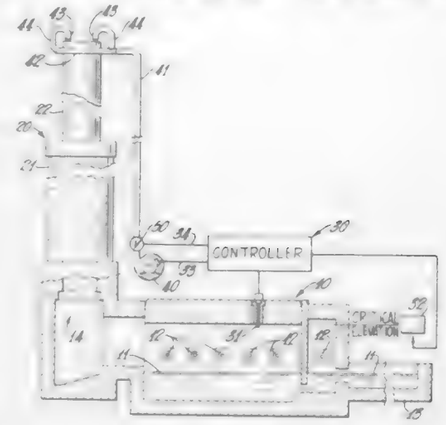
3,373,007

METHOD AND MEANS FOR CONTROLLING INTERNAL FURNACE PRESSURES

Winton A. Ticknor, Lancaster, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Nov. 12, 1965, Ser. No. 507,442
8 Claims. (Cl. 65—161)

Apparatus for controlling the level of a pool of molten glass in a feeder-forehearth supplying glass for attenuation into fibers and thus controlling the diameter of the fibers attenuated wherein the feeder-forehearth is connected to receive a pool of glass from a melting tank of a direct-melt furnace. The pressure in the melting tank of the furnace is detected. The volume of a vertical air curtain directed downwardly into the furnace stack is



controlled in response to the pressure detected and thus controls the level of the pool of glass in the melting tank and in the forehearth-feeder.

3,373,008

PROTECTING SLIPPER FOR AN EDGE ROLLER IN A GLASS SHEET SUPPORT BATH

Jack Lawrenson, St. Helens, and Frederick William Silverwood, Appley Bridge, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Mar. 22, 1965, Ser. No. 441,427
Claims priority, application Great Britain, Mar. 25, 1964, 12,711/64
7 Claims. (Cl. 65—182)

An edge roll for engaging under a margin of a ribbon of glass being advanced along a bath of molten metal is mounted in an open-topped protecting slipper which is partially submerged in the bath.

3,373,009

NUTRIENT PLANT MATRIX

Malcolm E. Pruitt, Lake Jackson, and Joseph M. Baggett, Freeport, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 30, 1964, Ser. No. 386,430
11 Claims. (Cl. 71—28)

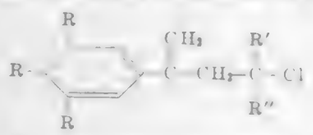
1. An integral nutrient plant growth medium consisting essentially of a stable, water-insoluble, open-celled, foamed polymer matrix having intimately imbedded therein as an integral part thereof, plant nutrients in a leach resistant nutrient mixture, wherein said leach resistant nutrient mixture contains from about 2 to 60 parts by weight of a substantially insoluble salt mixture selected from the group consisting of substantially water-insoluble inorganic salts, fritted salts and resin imbedded inorganic salts and from about 0.3 to 7.8 parts by weight of nitrogen calculated as elemental nitrogen, wherein said nitrogen is supplied at least in part as nitrate exchanged on an anion exchange resin, and wherein said leach resistant nutrient mixture is added in an amount which does not exceed about 65 percent of the weight of the polymer mixture prior to foaming.

3,373,010
HERBICIDAL COMPOSITION AND METHOD
Harold C. Olson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 8, 1964, Ser. No. 402,608
4 Claims. (Cl. 71—120)

Compositions containing an herbicidally effective amount of 1-(p-chlorophenyl)-3,3-dimethylurea, 1-(3,4-dichlorophenyl) - 3,3 - dimethylurea or 1-(3,4-dichlorophenyl)-3-n-butyl-3-methylurea in combination with an herbicidally effective amount of alpha,alpha,alpha-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine and method of using same for synergistic herbicidal response.

3,373,011
COMPOSITION AND METHOD FOR SUPPRESSING PLANT GROWTH
Dorsey R. Mussell, Clare, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 194,704, May 14, 1962. This application Oct. 10, 1963, Ser. No. 315,335
9 Claims. (Cl. 71—126)

1. A method of suppressing plant growth which comprises applying to a plant part an at least growth-suppressing amount of styrene compound of the formula



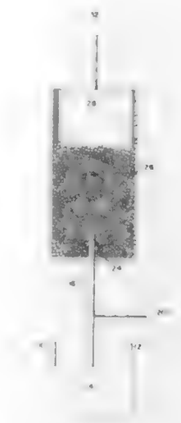
wherein each R independently represents a member selected from the group consisting of hydrogen, bromo, chloro, and loweralkyl being of from 1 to 3, inclusive, carbon atoms; R′ represents a member selected from the group consisting of bromo and chloro; and R″ represents a member selected from the group consisting of hydrogen, methyl, and chloro.

3,373,012
PRODUCTION OF METALLURGICAL PRODUCTS
John F. Hardy, Andover, and Merrill E. Jordan, Walpole, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
No Drawing. Filed Nov. 12, 1964, Ser. No. 410,712
19 Claims. (Cl. 75—.5)

1. A process for producing finely-divided metallurgical products comprising the steps of:
(1) mixing into a liquid medium
(a) a soluble compound of a metal,
(b) carbon black, and
(c) a substance which precipitates a compound of said metal which can be converted by reaction with carbon,
(2) recovering the solids from said medium, and
(3) heating said solids in an atmosphere selected from the group consisting of reducing atmospheres and inert atmospheres to convert said metal compound of Step 1 part (c) to a metallurgical product.

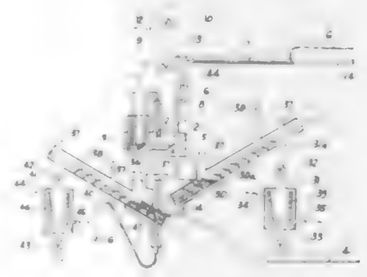
3,373,013
PROCESS FOR PRODUCING FINELY DIVIDED METAL PRODUCTS
John F. Hardy, Andover, and Merrill E. Jordan, Walpole, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed Nov. 6, 1964, Ser. No. 409,410
20 Claims. (Cl. 75—.5)

1. A process for producing finely-divided metallurgical powders comprising the steps of:
(a) uniformly mixing into a liquid medium
(1) at least one metal compound which upon heating in an oxidizing atmosphere can be converted to the corresponding oxide, and
(2) carbon black,



(b) subdividing the resulting mixture into droplets and contacting said droplets with a plurality of fluidized particulate bodies heated to a temperature at least sufficient to convert said metal compound to the corresponding oxide.

3,373,014
METHOD FOR PURIFICATION OF ALUMINUM
Jacques Merles, Tarascon-sur-Ariege, France, assignor to Pechiney Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France
Filed July 14, 1964, Ser. No. 382,600
Claims priority, application France, July 19, 1963, 941,998
27 Claims. (Cl. 75—68)



1. In the process of purification of aluminum by treatment of impure aluminum with mercury in a solution zone to dissolve out aluminum while impurities remain undissolved including a main stream comprising the treatment of the impure aluminum in a solid state with liquid mercury at elevated temperature to dissolve aluminum in the mercury, separating the formed solution of aluminum in mercury from undissolved impurities, cooling the solution of aluminum in mercury to form the solution into a crystalline phase of amalgam crystals and a liquid phase of mercury with aluminum dissolved therein separating the amalgam crystals from the remainder and then removing mercury by vaporization from the amalgam crystals to leave purified aluminum, and a secondary cycle comprising the step which includes the portion of the main stream of flowing liquid mercury into contact with the solid particles of impure aluminum to dissolve out aluminum, and which includes the step of draining the liquid mercury with aluminum dissolved therein from the impure aluminum, recycling the drained liquid mercury for flowing into contact with the solid particles of impure aluminum and repeating the secondary cycle for a number of times, continuously bleeding a fraction of the drainage of the liquid mercury with the aluminum dissolved therein to the main stream for separation of undissolved impurities and for separation of dissolved aluminum, and adding liquid mercury to the secondary cycle in an amount corresponding to the amount removed from the secondary cycle into the main stream in which the main stream and secondary cycle are carried out as a continuous operation.

3,373,015
STAINLESS STEEL AND PRODUCT
Paul M. Allen, Middletown, Ohio, and Ronald H. Espy, Randallstown, and Harry Tanczyn, Baltimore, Md., assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 16, 1965, Ser. No. 440,280
5 Claims. (Cl. 75—128)

Chromium-nickel-titanium stainless steel containing delta-ferrite, this in small amounts (i.e. 1%) up to 20% or more by volume, which steel is ductile and readily weldable and essentially consists of carbon not exceeding .07%, manganese up to 1.00%, silicon up to .75%, with chromium in the amount of 10.5% to 12.5%, nickel at least 1.0% but less than 3.0%, titanium .2% to .75%, and remainder essentially iron.

3,373,016
BRAZING ALLOY
Edward R. Roeder and Ernst G. Huschke, Jr., Canoga Park, Calif., assignors to North American Aviation, Inc.
No Drawing. Filed Sept. 20, 1965, Ser. No. 488,745
2 Claims. (Cl. 75—173)

1. A brazing alloy comprising:
from 0.93 to 1.25 weight percent Cu,
from 0.70 to 0.94 weight percent Ni,
from 13.5 to 15.0 weight percent Zn,
and the remainder being Ag and incidental amounts of impurities and compatible elements, wherein the ratio of Ni to Cu is at least .75:1.

3,373,017
ZIRCONIUM-HAFNIUM ALLOYS FOR COINAGE
Donald R. Spink, East Amherst, and William W. Stephens, Williamsville, N.Y., assignors to Amax Specialty Metals, Inc., Akron, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 29, 1965, Ser. No. 443,620
4 Claims. (Cl. 75—177)

1. Coins having a silvery-white appearance, a feel and a characteristic ring when dropped similar to high silver content coins and having wear characteristics at least equal to such silver coins consisting essentially of an alloy of zirconium and hafnium, said hafnium being present in an amount greater than 8.5 weight percent of said alloy.

3,373,018
PRODUCTION OF RIGID SHAPES OF REFRACTORY METALS BY DECOMPOSITION OF THE METAL HEXAFLUORIDE IN THE INTERSTICES OF A GREEN COMPACT
Joseph H. Oxley and John M. Blocher, Jr., Columbus, Ohio, assignors, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 17, 1965, Ser. No. 433,484
4 Claims. (Cl. 75—211)

1. A process for producing a chemically sintered, rigid body of particles of a refractory metal joined by interstitial deposits of the same refractory metal, which process comprises:
(a) introducing vapor of a higher halide of a refractory metal into interstices of a mass of stagnant particles of the same refractory metal maintained at a temperature conducive to formation and deposition of a subhalide of the refractory metal by reaction of said higher halide with said particles;
(b) interrupting the introduction of said vapor; and
(c) introducing hydrogen gas into said interstices containing said subhalide, so formed and deposited, maintained at a temperature conducive to reduction of the subhalide to the refractory metal by reaction of hydrogen gas with the subhalide.

3,373,019
METHOD AND APPARATUS FOR PRODUCING IMAGES
William E. Bixby, Deerfield, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed May 21, 1964, Ser. No. 369,123
19 Claims. (Cl. 96—1)

A copying method and apparatus wherein an electrostatic charge pattern is formed in a photoconductive surface corresponding to an image, for example, through an optical system forming a greatly reduced microimage, and a gaseous material is ionized to form gas ions of polarity opposite that of the charge image. The resulting ions are then deposited on the surface to form a latent image at the charge pattern and a copy medium is then contacted against the thus treated photoconductive surface, the copy medium being provided with a surface capable of reacting with the image to form a permanent visible image on the copy medium. By having the gaseous material comprise an alkaline reacting material and by having the copy medium coated with a diazonium compound, microimages of particularly high resolution may be formed on the copy medium.

3,373,020
ELECTROPHOTOGRAPHIC MATERIAL AND PROCESS EMPLOYING METAL RESINATES
Martha Tomanek, Wiesbaden-Biebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 16, 1963, Ser. No. 330,602
Claims priority, application Germany, Dec. 18, 1962, K 48,510
31 Claims. (Cl. 96—1.5)

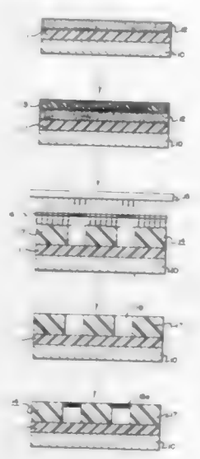
The present invention relates to an electrophotographic material comprising a conductive carrier and a photoconductive insulating layer applied thereto, the latter comprising metal resinates or such compounds in combination with additives. The term metal resinates as used herein means salt-like compounds of metals and resin acids.

3,373,021
PRESENSITIZED POSITIVE WORKING LITHOGRAPHIC PLATE
Dolor N. Adams, Cleveland Heights, and Daniel C. Thomas, Warrensville Heights, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Jan. 29, 1964, Ser. No. 340—929
16 Claims. (Cl. 96—33)

1. A lithographic plate comprising a support member, and a light-sensitive layer overlying the support member comprising the reaction product of a light-sensitive diazo resin and a cycloaliphatic polyphosphoric acid.

12. A method of preparing a lithographic printing plate comprising forming on a support member adapted to de-

fine the backing of the plate a layer comprising the reaction product of a light-sensitive diazo resin and a cycloaliphatic polyphosphoric acid, said layer being non-reactive with the support member, exposing selected portions



of the light-sensitive layer to light to convert said portions to non-ink-attractive areas of the plate, and thereafter treating said layer with a coupling agent to convert the non-selected portions to ink-attractive areas of the plate.

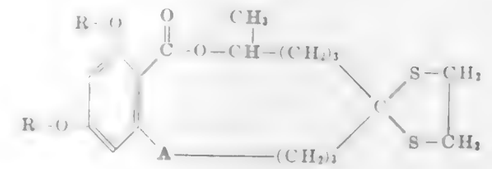
3,373,022
DEVELOPER REAGENTS, METHOD OF AND MEANS FOR UTILIZING THE SAME
Clarence Scott Johnson, 5607 Taliferro St., Tampa, Fla. 33604
Filed Sept. 23, 1963, Ser. No. 310,728
3 Claims. (Cl. 96—49)

1. The process of developing diazotype reproductions which comprises exposing the surface of an exposed light-sensitive diazo sheet to the vapor of a developing solution comprising a mixture of an ammonium hydroxide of a Baumé degree above 26 degrees and methanol.

3,373,023
MICROCRYSTALLINE CELLULOSE PARTICLES IN PHOTOGRAPHIC SILVER HALIDE ELEMENTS
Vere Maffet, East Brunswick, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 11, 1963, Ser. No. 331,090
8 Claims. (Cl. 96—113)

4. A method for counteracting the deleterious effect of contaminant oil and greases in aqueous coating compositions containing a water-permeable, macromolecular organic colloid binding agent having dispersed therethrough light-sensitive silver halide grains characterized by bringing said solution into contact with microcrystalline cellulose particles.

3,373,024
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 530,362, Feb. 28, 1966, which is a continuation-in-part of application Ser. No. 432,811, Feb. 15, 1965. This application Mar. 3, 1967, Ser. No. 620,256
10 Claims. (Cl. 99—2)

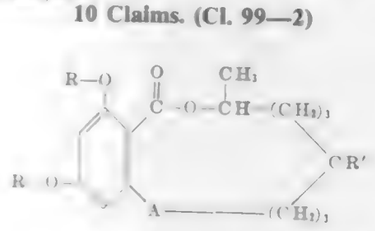


where A is selected from the group consisting of

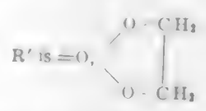
—CH=CH—

and —CH_2CH_2—, and R is selected from the group consisting of hydrogen, lower alkyl, e.g. methyl and lower saturated acyclic acyl, e.g., acetyl, and animal feeds containing growth promoting amounts thereof.

3,373,025
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 432,812, Feb. 15, 1965. This application Mar. 3, 1967, Ser. No. 620,259
10 Claims. (Cl. 99—2)

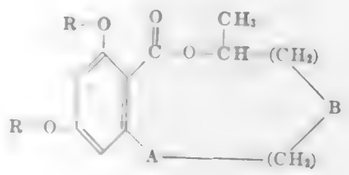


where R is hydrogen or benzyl, at least one R being benzyl, A is —CH_2CH_2— or —CH=CH—, and

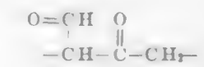


or =NOH, and animal feeds containing growth promoting amounts thereof.

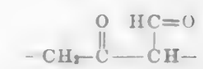
3,373,026
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 561,339, June 29, 1966. This application Mar. 3, 1967, Ser. No. 620,260
10 Claims. (Cl. 99—2)



where A is a radical selected from the group consisting of —CH_2—CH_2— and —CH=CH—, B is a radical selected from the group consisting of

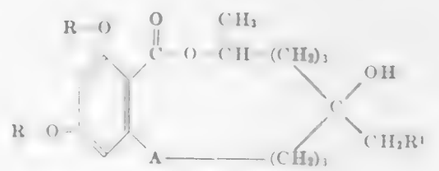


and



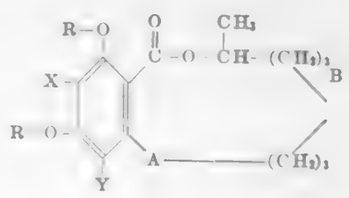
and R is selected from the group consisting of hydrogen, benzyl and lower alkyl, and animal feeds containing growth promoting amounts thereof.

3,373,027
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 561,371, June 29, 1966. This application Mar. 3, 1967, Ser. No. 620,261
10 Claims. (Cl. 99—2)



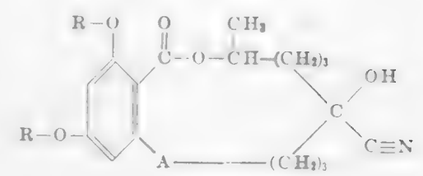
where R is selected from the group consisting of hydrogen, benzyl and lower alkyl, R^1 is selected from the group consisting of nitro- and amino-radicals and A is a radical selected from the group consisting of —CH=CH— and —CH_2—CH_2—, and animal feeds containing growth promoting amounts thereof.

3,373,028
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 561,392, June 29, 1966. This application Mar. 3, 1967, Ser. No. 620,262
10 Claims. (Cl. 99—2)



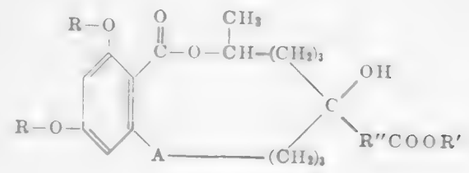
where A is a radical selected from the group consisting of —CH_2—CH_2— and —CH=CH—; R is selected from the group consisting of hydrogen, lower alkyl such as methyl, benzyl and lower saturated acyclic acyl, e.g. acetyl, one of X and Y is —CO_2H and the other is hydrogen; and B is a radical selected from the group consisting of >C=O, >CHOH and >CH_2, with the proviso that A is —CH_2—CH_2— when B is >CH_2, and animal feeds containing growth promoting amounts thereof.

3,373,029
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 561,393, June 29, 1966. This application Mar. 3, 1967, Ser. No. 620,263
10 Claims. (Cl. 99—2)



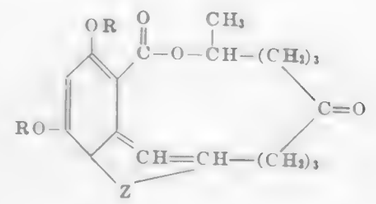
where R is selected from the group consisting of hydrogen, lower alkyl and benzyl and A is a radical selected from the group consisting of —CH=CH— and —CH_2—CH_2—; and animal feeds containing growth promoting amounts thereof.

3,373,030
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 561,403, June 29, 1966. This application Mar. 3, 1967, Ser. No. 620,265
10 Claims. (Cl. 99—2)

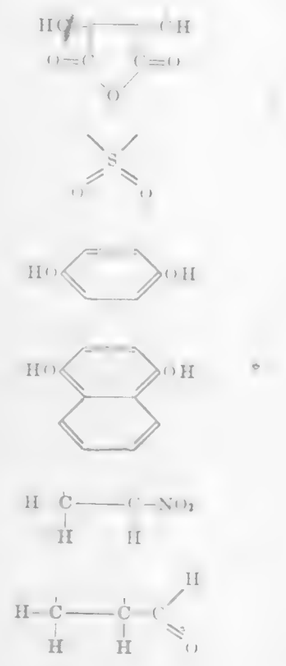


where A is a radical selected from the group consisting of —CH_2CH_2— and —CH=CH—, R is selected from the group consisting of hydrogen, benzyl and lower alkyl, e.g., methyl, R′ is lower alkyl such as ethyl, hexyl, etc., and R″ is lower alkylene, e.g., methylene, and animal feeds containing growth promoting amounts thereof.

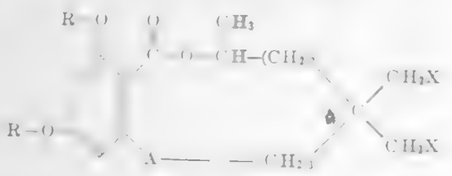
3,373,031
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Jerome L. Martin, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 566,486, July 20, 1966. This application Mar. 3, 1967, Ser. No. 620,266
8 Claims. (Cl. 99—2)



where R is selected from the group consisting of hydrogen, benzyl and lower alkyl, and Z is selected from the group:

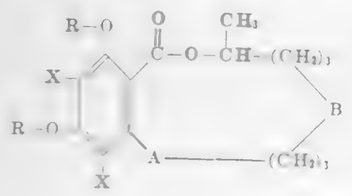


3,373,032
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Jerome L. Martin, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 561,401, June 29, 1966. This application Mar. 3, 1967, Ser. No. 620,269
10 Claims. (Cl. 99—2)



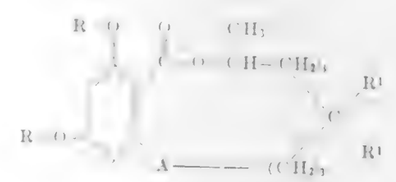
where A is a radical selected from the group consisting of —CH=CH— and —CH_2—CH_2—, R is selected from the group consisting of hydrogen, lower alkyl and benzyl, and X is selected from the group consisting of nitro- and amino-; and animal feeds containing growth promoting amounts thereof.

3,373,033
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 561,373, June 29, 1966. This application Mar. 3, 1967, Ser. No. 620,270.
10 Claims. (Cl. 99—2)



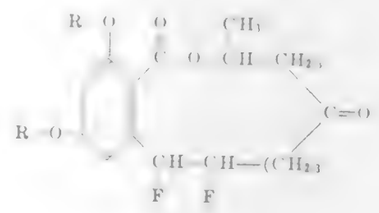
where A is selected from the group consisting of —CH=CH— and —CH_2—CH_2—; R is selected from the group consisting of hydrogen, lower alkyl, benzyl and lower saturated acyclic acyl; X is selected from the group consisting of hydrogen, —SO_3H, —SO_3R_1, —SO_2Cl and —SO_2NHR_2 wherein R_1 is lower alkyl and R_2 is selected from the group consisting of hydrogen, alkyl of about 1 to 20 carbon atoms, monocyclic aryl and halogen with the proviso that not more than one X is hydrogen and that R is selected from the group consisting of lower alkyl and benzyl when X is —SO_2Cl, and B is selected from the group consisting of >C=O, >CHOH and >CH_2 with the proviso that A is —CH_2—CH_2—, when B is >CH_2; and animal feeds containing growth promoting amounts thereof.

3,373,034
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 561,372, June 29, 1966. This application Mar. 3, 1967, Ser. No. 620,271.
10 Claims. (Cl. 99—2)



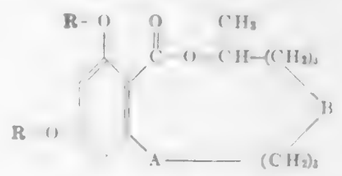
where R is selected from the group consisting of hydrogen, benzyl, and lower alkyl, A is a radical selected from the group consisting of —CH=CH— and —CH_2—CH_2—, and R^1 is selected from the group consisting of hydrogen and halogen, with the proviso that at least one R^1 is Halogen; and animal feeds containing growth promoting amounts thereof.

3,373,035
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Jerome L. Martin, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 561,400, June 29, 1966. This application Mar. 3, 1967, Ser. No. 620,284
6 Claims. (Cl. 99—2)



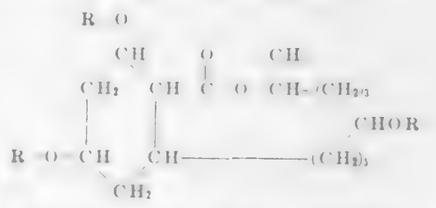
where R is selected from the group consisting of hydrogen, lower alkyl and benzyl and animal feeds containing growth promoting amounts thereof.

3,373,036
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 561,410, June 29, 1966. This application Mar. 3, 1967, Ser. No. 620,286.
10 Claims. (Cl. 99—2)



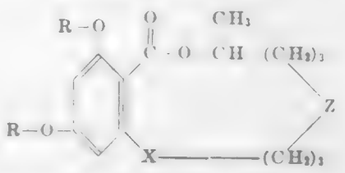
wnere R is selected from the group consisting of hydrogen, benzyl and lower alkyl, A is a radical selected from the group consisting of —CH=CH— and —CH_2—CH_2— and B is a radical selected from the group consisting of —CH_2—CO— and —CO—CH_2—, and animal feeds containing growth promoting amounts thereof.

3,373,037
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Richard L. Abbott, Monroe, La., assignor to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 561,350, June 29, 1966. This application Mar. 6, 1967, Ser. No. 620,604
10 Claims. (Cl. 99—2)

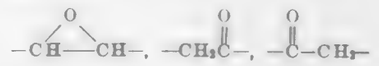


where R is selected from the group consisting of hydrogen, lower alkyl, lower saturated acylic acyl and benzyl and animal feeds containing the same.

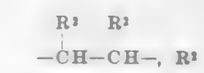
3,373,038
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 620,264, Mar. 3, 1967. This application Oct. 18, 1967, Ser. No. 676,079
10 Claims. (Cl. 99—2)



where R is selected from the group consisting of hydrogen, lower alkyl, and lower saturated acyclic acyl; Z is a radical selected from the group consisting of >C=O, >CHOH, and >CHOR; and X is a radical selected from the group consisting of

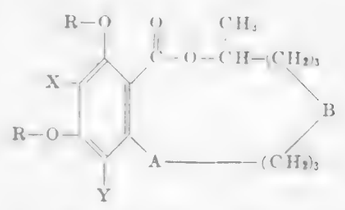


and



is selected from the group consisting of hydrogen, hydroxyl and —$N(R^3)_2$ and R^3 is selected from the group consisting of hydrogen, alkyl of about 1 to 15 carbon atoms, monocyclic aryl and aralkyl of about 1 to 15 carbon atoms, with the proviso that at least one R^2 is hydroxyl; and animal feeds containing growth promoting amounts thereof.

3,373,039
ESTROGENIC COMPOUNDS AND ANIMAL GROWTH PROMOTERS
Edward B. Hodge, Phil H. Hidy, and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 640,503, May 23, 1967. This application Oct. 26, 1967, Ser. No. 678,177
10 Claims. (Cl. 99—2)
Compounds of the formula



wherein A is —CH=CH— or —CH_2—CH_2—; B is >C=O, >CHOR, or >CH_2; R is hydrogen, alkyl, acyl or aryl; and X or Y is hydrogen, nitro, amino, dialkylamino, diazonium, cyano, hydroxyl, aryl, alkenyl, alkyl, alkoxy or acyl; and animal feeds containing growth promoting amounts of these compounds.

3,373,040
PRODUCTION OF MALT LIQUOR PRODUCTS HAVING VERY LOW PROTEIN, SUGAR AND REAL EXTRACT CONTENTS WITH DISTINCTIVE VINOUS FLAVOR
Charles Gluek, R.R. 5, Wayzata, Minn. 55391
No Drawing. Filed Jan. 8, 1965, Ser. No. 424,204
2 Claims. (Cl. 99—31)

Process for producing a malt liquor which comprises preparing a cooker mash and a main malt mash separately, withdrawing from the main mash a quantity of infusion liquid, mixing the main mash and the hot cooker mash, drawing off the wort from the mixed mash and boiling the wort and adding hops, fermenting the boiled wort during which withdrawn infusion liquid is added to the wort, adding to the fermented wort brewing water of pH 4.3 to obtain a beverage having 3.5% and 5% alcohol by volume, with a saccharometer indication by plato of less than 0.6%, a real extract content of less than 3.3 and a protein content of less than 3.8.

3,373,041
METHOD OF PREPARING BREWED COFFEE
Jack Bloom and Leroy W. Brown, Chicago, Ill., assignors to Continental Coffee Company, a corporation of Illinois
No Drawing. Filed Jan. 23, 1964, Ser. No. 339,596
6 Claims. (Cl. 99—68)

1. The method of preparing a coffee adapted for use with softened water which comprises roasting green coffee beans to a temperature in the range between about 375° F. and 425° F. until the filtrate obtained by brewing 2 ounces of comminuted roasted beans of a particle size of 100% passing a 30 mesh standard screen to 100 cc. of boiling distilled water and boiling for five minutes, cooling the decoction to 68° F., diluting with distilled water to a volume of 100 ml., and filtering, when read on the spectrophotometer at a 500 millimicron wavelength, has an optical density between 0.35 and 0.45, and irrespective

of order, the steps of incorporating an organic food acid in an amount between about 0.1% and about 0.5% by weight of the coffee and comminuting the roasted beans whereby a particulate material is recoverable of a particle size such that at least 95% passes through a No. 16 U.S. Standard Screen and the maximum amount of particles passing a No. 100 U.S. Standard Screen is less than about 6%.

3,373,042
PROCESS FOR CONTINUOUSLY FREEZING COFFEE EXTRACT

Byron Everett Elerath, Mountain Lakes, N.J., and Esra Pitchon, Flushing, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

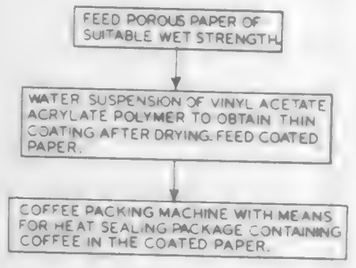
No Drawing. Filed Sept. 9, 1964, Ser. No. 395,299
6 Claims. (Cl. 99—71)

Coffee extract is partially frozen with agitation into a slush in a first conductive cooling zone, the slush is then placed in a second conductive cooling zone for completion of the freeze, and the completely frozen product is then freeze-dried.

3,373,043
METHOD OF PACKAGING COFFEE AND PACKAGE

Sherman Rubenstein, Skokie, Ill., assignor to Robert L. Kahn and Harry Rubenstein, both of Chicago, Ill., as joint trustees.

Filed July 29, 1966, Ser. No. 568,972
3 Claims. (Cl. 99—77.1)


FEED POROUS PAPER OF SUITABLE WET STRENGTH.
WATER SUSPENSION OF VINYL ACETATE ACRYLATE POLYMER TO OBTAIN THIN COATING AFTER DRYING. FEED COATED PAPER.
COFFEE PACKING MACHINE WITH MEANS FOR HEAT SEALING PACKAGE CONTAINING COFFEE IN THE COATED PAPER.

A desired quantity of coffee is disposed in normally porous paper sized with a harmless water soluble material as vinyl acetate acrylate copolymer. The package is heat sealed and, prior to brewing, protects coffee from atmosphere. During brewing, the water soluble sizing is dissolved and permits normal brewing to occur. After brewing, the entire package may be thrown out.

3,373,044
CULINARY COMPOSITION CONTAINING ACIDIC LIPID ALKYL CARBONATES

James E. Thompson, Colerain Township, Hamilton County, and Norman B. Howard, Hamilton, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 17, 1964, Ser. No. 419,234
22 Claims. (Cl. 99—92)

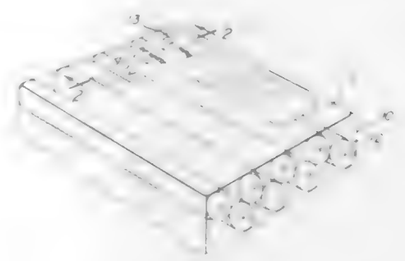
Shortening, cake batters, dry cake mixes and the like containing minor amounts of acidic lipid alkyl carbonates.

3,373,045
PACKAGE AND INSERT LABEL

Harold F. Peterson, Chicago, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 27, 1965, Ser. No. 490,392
4 Claims. (Cl. 99—171)

1. In combination with a food package having a wrapper with a transparent cover, a removable insert label secured by transpurent pressure-sensitive adhesive to the underside of the wrapper cover, said label being imprinted upon its outer side facing said wrapper with notice information, and upon its reverse side with a coupon, said

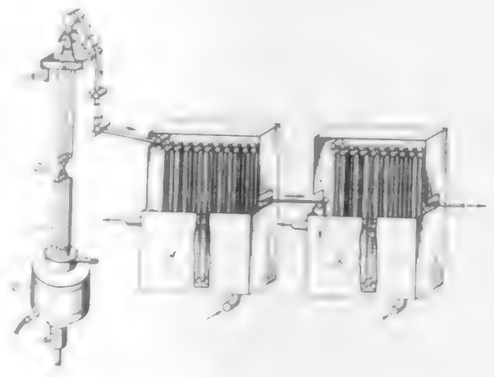


reverse side being covered with a non-toxic, ink-impervious coating, whereby the purchaser, after opening the package, may peel off the label and apply it to a forwarding mailing piece.

3,373,046
PROCESS FOR THE MANUFACTURE OF COLLAGEN CASINGS FROM LIMED HIDES

Paul V. Fagan, Bridgewater Township, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Continuation-in-part of application Ser. No. 395,828, Sept. 11, 1964. This application June 15, 1965, Ser. No. 464,112
14 Claims. (Cl. 99—175)



Collagen sausage casings are prepared from limed hides by reacting the comminuted hides with a proteolytic enzyme. The hide particles are then acid swollen to form a fluid mass of acid swollen collagen fibrils that is extruded in the form of a tube.

3,373,047
MATERIAL FOR HOT TOP

Herbert D. Sheets and John W. Lennon, Columbus, Ohio, assignors, by mesne assignments, to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware

Filed Oct. 6, 1964, Ser. No. 401,944
5 Claims. (Cl. 106—38.2)

1. An insulating structure for use in hot topping and adapted to be supported at the upper end of an ingot mold comprising a body to be supported at the upper end of the ingot mold, said body having one surface for defining at least a portion of an opening through which molten metal is poured into the mold, said one surface being contacted by molten metal poured into the mold, and said body at least in part constructed of a mixture consisting essentially

of 79–90 parts by weight of granular refractory filler, 5–10 parts by weight of inorganic fibrous asbestos form material having a water content between 0 to 6%, 0 to 2 parts by weight of organic fibrous material, and 5–10 parts by weight of a binder therefor.

3,373,048
HARDENING ACCELERATED PORTLAND CEMENT

Richard L. Angstadt, Silver Spring, and Forrest R. Hurley, Ellicott City, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed June 23, 1964, Ser. No. 377,281
9 Claims. (Cl. 106—90)

Lithium oxalate is added to Portland cement compositions to accelerate the hardening rate of the cement.

3,373,049
METHOD FOR BONDING SILICEOUS FIBERS TO SILICONE RUBBER

Siegfried Nitzsche and Karl-Heinrich Wegehaupt, Burghausen, Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Bavaria, Germany

No Drawing. Filed July 5, 1963, Ser. No. 293,127
Claims priority, application Germany, July 11, 1962, W 32,590
6 Claims. (Cl. 117—76)

1. A method for adhering silicone rubber to a siliceous substrate consisting essentially of

(1) contacting the substrate with a mixture of silanes containing 10 to 85 mol percent of silicon tetrahalide, 15 to 90 mol percent of triorganohalogenosilane and 0 to 50 mol percent of diorganodihalogenosilane in each of said silanes the organic substituents being selected from the group consisting of monovalent hydrocarbon and halogenohydrocarbon radicals,

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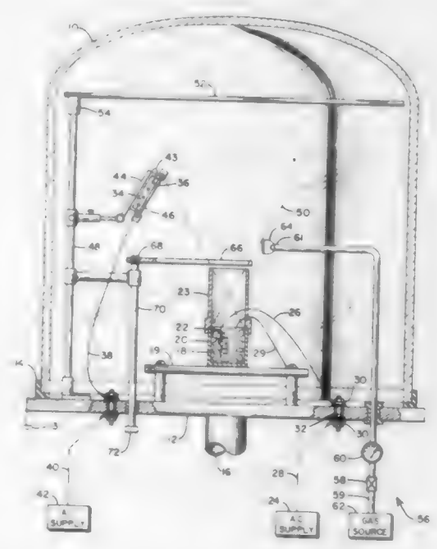
3,373,050
DEFLECTING PARTICLES IN VACUUM COATING PROCESS

Maynard C. Paul and Paul E. Oberg, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 30, 1964, Ser. No. 422,161
9 Claims. (Cl. 117—106)

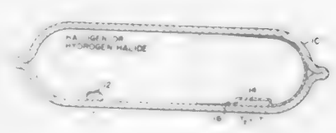


The use of a jet of inert gas in a thin film vacuum deposition apparatus to separate unduly large particles which may spatter from the melt from the evaporant to be deposited on the substrate.

3,373,051
USE OF HALOGENS AND HYDROGEN HALIDES IN INSULATING OXIDE AND NITRIDE DEPOSITS

Ting L. Chu, Forest Hills, Pittsburgh, and Harold F. John, Wilkingsburg, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Original application Apr. 27, 1964, Ser. No. 362,733. Divided and this application Mar. 16, 1967, Ser. No. 623,699
9 Claims. (Cl. 117—106)

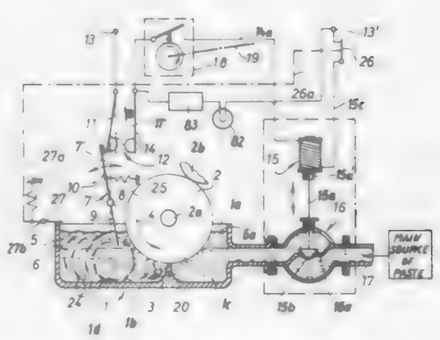


Certain oxide and nitride insulating materials are deposited on a substrate by a transport process using halogens or a hydrogen halide as the transport agent and having the substrate at a lower temperature than the source of the insulating material. Application of layers of such insulating materials to semiconductor devices is also described.

3,373,052
METHOD AND APPARATUS FOR FEEDING PASTE IN CIGARETTE MACHINES AND THE LIKE

Ludwig Rode, Neu-Bornsen, Kreis Herzogtum, Lauenburg, Germany, assignor to Hauni Werke Korber & Co. K.G., Hamburg-Bergedorf, Germany

Filed Mar. 12, 1964, Ser. No. 351,287
Claims priority, application Great Britain, Mar. 19, 1963, 10,736/63
26 Claims. (Cl. 117—111)



A minimum supply of paste in a paste tank is maintained by a feeler which dips into the supply of paste and changes its position in response to changes in the strength of a current produced by agitation of the supply of liquid, such agitation being produced by the paste-withdrawing roller or by an independent agitating device. The feeler can effect generation of visible or otherwise detectable signals or it controls the operation of a valve which admits fresh paste when the strength of the current is reduced to an extent which indicates that the supply of liquid has decreased below a minimum permissible value.

3,373,053
TRANSPARENT SHEET MATERIAL

Harold A. Clark, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed Sept. 3, 1964, Ser. No. 394,147
2 Claims. (Cl. 117—126)

A thermally stable siloxane transparent sheet material. When used in electrostatic printing equipment the sheet

material retains suitable flexibility and exhibits nonstickiness during the heating process. When used in image projection instruments the sheet material displays appropriate clarity for transparencies.

An illustrative example being dipping twice with subsequent curing 116 type glass cloth into a 35% by weight xylene solution of copolymer resin having the following composition: 10 mol percent monomethylsiloxane, 33.5 mol percent dimethylsiloxane, 40 mol percent monophenylsiloxane, and 16.5 mol percent diphenylsiloxane.

3,373,054

CHEMICAL PLATING

Konrad Lang, Cologne-Stammheim, and Heinz-Günter Klein, Cologne-Deutz, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed June 18, 1964, Ser. No. 376,207
Claims priority, application Germany, July 22, 1963, F 40,295
9 Claims. (Cl. 117—130)

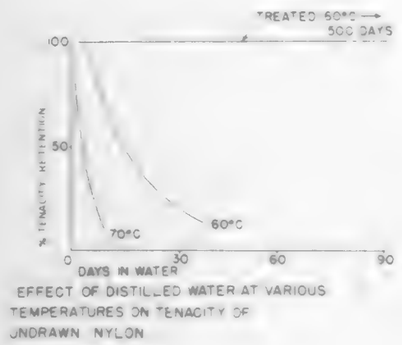
An improved process for chemical plating with alkaline aqueous plating baths containing a nickel and/or cobalt salt, a primary complexing agent such as ethylene diamine and a boron hydride compound is disclosed. The improvement is directed to the regeneration of such plating baths, the same to be carried out in the plating bath itself and without interrupting the process. The improvement in accordance with the invention lies in the teaching to add to the bath during the plating process an aqueous solution containing a secondary complex forming agent, the same being characterized in that it is volatile at the temperature at which the plating operation is being carried out; the primary complexing agent not being volatile at such temperature and further the secondary complexing agent being characterized in that it forms less stable complexes with the metal salt than does the primary complexing agent, together with a metal salt, i.e., nickel and/or cobalt salt.

3,373,055

PROCESS FOR TREATING POLYAMIDE MATERIALS

John Edward Swallow, Farnborough, England, assignor to Minister of Aviation, in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England

Filed May 22, 1963, Ser. No. 282,427
4 Claims. (Cl. 117—138.5)



EFFECT OF DISTILLED WATER AT VARIOUS TEMPERATURES ON TENACITY OF UNDRAWN NYLON

1. A process for treating nylon to increase its resistance to deterioration consisting of the immersion of said nylon in a saturated solution of aqueous 8-hydroxyquinoline for a time sufficient to impregnate said nylon, removing said impregnated nylon from said solution and drying the same.

3,373,056

MODIFYING CELLULOSE ESTER OSMOTIC MEMBRANES

Fred Eli Martin, Azusa, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed Aug. 28, 1964, Ser. No. 392,932
7 Claims. (Cl. 117—144)

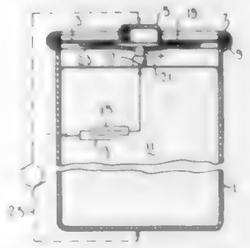
A method for improving the salt retention characteristics of a cellulose reverse osmosis membrane by treatment with various modifiers such as polyvinyl methyl ether, guartec gum, activated charcoal and copper ferrocyanide.

3,373,057

BATTERY HAVING AN AUTOMATIC CIRCUIT BREAKER THEREIN

Ernest M. Jost, Attleboro, and Pieter J. Nieuwkoop, Norton, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 24, 1965, Ser. No. 504,359
5 Claims. (Cl. 136—6)



The cover of a sealed rechargeable-battery casing is provided centrally with an inwardly concave contact button. A dished (which is to say concavoconvex) snap-acting spring disc of the automatic reset type is marginally sealed to the inside of the cover. Its concave side faces the cover. An automatic reset disc after snapping in one direction in response to pressure on its convex side will return with snap action when the pressure is relieved. The disc is provided centrally with a sealed movable contact for engagement and disengagement with an internal fixed contact when the disc snaps to and fro. The arrangement is such that when the contacts are engaged the disc is slightly sprung toward the cover but short of causing snap action. This maintains good electrical contact pressure under safe internal gas pressures. The fixed contact is electrically connected with one set of battery plates and the other set of plates is electrically connected with the casing.

3,373,058

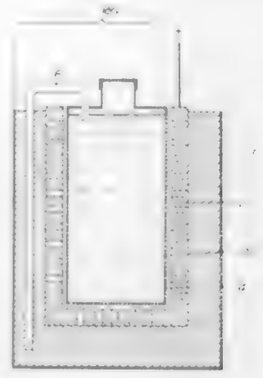
PRIMARY CELL COMPRISING AN AQUEOUS SOLUTION CONTAINING HALOGEN AND A METAL HALIDE

Moshe Rudolf Bloch, Beersheba, Israel, assignor to Dead Sea Works Limited, Beersheba, Israel, an Israeli company

Filed June 14, 1965, Ser. No. 463,633
Claims priority, application Israel, June 24, 1964, 21,599
8 Claims. (Cl. 136—83)

1. A primary cell comprising a casing, an aqueous solution containing halogen and a metal halide selected from the group of zinc halides and cadmium halides within the casing, an Me electrode where Me is a metal selected from the group consisting of zinc and cadmium and spaced therefrom an inert perforated electrode, said Me and inert

electrode are both in contact with said aqueous solution, and in contact with said aqueous solution at least one



halogen permeable container enclosing a source of free halogen.

3,373,059

METHOD OF MAKING PHOTOSENSITIVE ELEMENTS

Frank Augustine, Cleveland, Ohio, assignor to Clevite Corporation, a corporation of Ohio

Filed Oct. 24, 1963, Ser. No. 318,692
14 Claims. (Cl. 136—89)

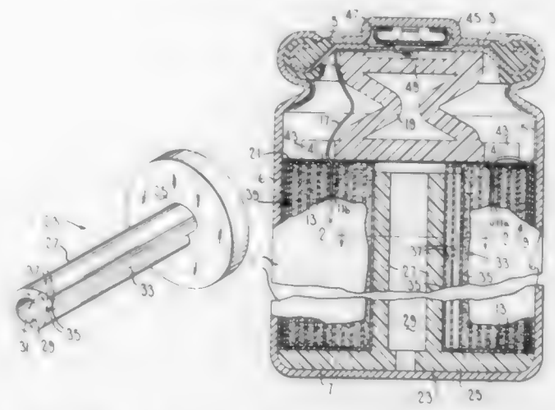
1. The method of fabricating a photosensitive cell which includes the steps of: fabricating a plate of semiconductor material doped throughout its bulk with donor defects; coating one surface of the plate with an aqueous acceptor impurity slurry containing precipitated hydrated metal selected from the group consisting of copper, silver, gold; heating the plate for a predetermined time at a predetermined temperature to diffuse the acceptor impurity into the plate and establish a photosensitive diffused layer not greater in thickness than about .01 mm.; and attaching electrodes to the plate.

3,373,060

ELECTRICAL CELL WITH COILED SEPARATORS AND ELECTRODES

Earl E. Gray, North Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Jan. 3, 1966, Ser. No. 518,218
10 Claims. (Cl. 136—100)



1. An electrode assembly for an electrical cell comprising a mandrel having a periphery of spiral form providing a longitudinal offset shoulder on a substantially radial plane extending substantially throughout the length of said mandrel, alternating separator and electrode strips wound around said mandrel, the inner ends of said strips abutting said shoulder, and means holding the strips wound around the mandrel.

3,373,061

CHALCOGENIDE THERMOELECTRIC DEVICE HAVING A BRAZE COMPRISING ANTIMONY COMPOUNDS AND METHOD OF FORMING SAID DEVICE

Leopold Pessel, Wyndmoor, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed July 19, 1962, Ser. No. 210,889
5 Claims. (Cl. 136—237)

1. The method of forming a low electrical resistance connection between a thermoelectric body composed of at least one member selected from the group consisting of sulfides, selenides, and tellurides, and another body, comprising the step of bonding said bodies with a braze selected from the group of intermetallic compounds consisting of palladium antimonide, antimony telluride, indium antimonide, and silver antimony telluride, said thermoelectric body being composed of a different compound from said braze compounds.

3. The method of forming a low electrical resistance connection between a thermoelectric body composed of at least one member of the group consisting of sulfides, selenides, and tellurides, and another body, comprising the steps of comminuting a compound selected from the group consisting of palladium antimonide, antimony telluride, indium antimonide, and silver antimony telluride; pressing said comminuted compound into a preform; positioning said preform between the surfaces of said bodies to be joined; pressing said bodies together; and heating said bodies in a non-oxidizing ambient to a temperature above the melting point of said compound but below the melting point of said thermoelectric body while maintaining said pressure.

4. A thermoelectric device including a body of thermoelectric material comprising at least one member of the group consisting of sulfides, selenides, and tellurides, and having another body bonded thereto, the bond between said bodies comprising a layer of a braze selected from the group consisting of palladium antimonide, antimony telluride, indium antimonide, and silver antimony telluride, said thermoelectric material being comprised of a different compound from said braze compounds.

5. A thermoelectric device including a doped body of thermoelectric material comprising at least one member of the group consisting of sulfides, selenides, and tellurides, and having another body bonded thereto, the bond between said bodies comprising a layer of a braze selected from the group consisting of palladium antimonide, antimony telluride, indium antimonide, and silver antimony telluride, said layer of braze including from about 0.1 to 2.0 weight percent of the substance used as a doping agent in said thermoelectric body, said thermoelectric material being comprised of a different compound from said braze compounds.

3,373,062

ENCAPSULATION OF PARTICULATE METAL HYDRIDE IN SOLID PROPELLANTS

Quentin L. Morris, McGregor, Tex., assignor to North American Aviation, Inc.

No Drawing. Filed July 14, 1964, Ser. No. 384,030
8 Claims. (Cl. 149—6)

8. A solid propellant grain comprising:
a binder,
a fuel,
and an encapsulated reactive oxidizer prepared by dissolving two pre-polymers capable of copolymerization in a solvent therefor,
suspending the reactive material in the resultant polymer solution,
adding a nonsolvent material to the solution effecting phase separation,
heating for a sufficient period of time to cure said polymers in a film about said reactive material.

3,373,063
CONTROLLED BURNING OF POTENT SOLID OXIDIZER

Herman Bieber, Kenilworth, N.J., George Chludzinski, Brooklyn, N.Y., and Lawrence Spenadel, Fanwood, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 29, 1960, Ser. No. 79,946
3 Claims. (Cl. 149—7)

1. Nitronium perchlorate mixed with a critical quantity in the range of about 2 to 5 wt. percent of finely divided, solid, hydrocarbonaceous material which is principally polymethylene in composition.

2. A solid oxidizer of composition defined in claim 1 in which the hydrocarbonaceous material is polyethylene.

3,373,064
APPARATUS FOR SINGLE SURFACE ETCHING OF GLASS PLATES

Albert E. Junge, New Kensington, and Joseph Chabal, Curtisville, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 4, 1964, Ser. No. 387,392
3 Claims. (Cl. 156—34.5)

This invention relates to a method and apparatus for etching, and in particular to a method and apparatus for etching only selected surface portions of an article while the article is immersed in a bath of etching solution. More specifically, the present invention relates to a method and apparatus for completely etching only a single major surface of flat glass articles while immersed in a bath of acid etching solution and to a novel manufacture employing the use of the etched article thus obtained. More particularly, the invention relates to an apparatus comprising an impervious or etch resistance protective seal disposed between the faces of a pair of glass plates to be etched in such a manner to form a void and means for creating a vacuum within the void formed by the gasket and plates.

3,373,065
GYPSUM BOARD-FORMING METHODS AND MACHINES

Douglas F. Gutzman, Arlington Heights, and Rupert J. Straub, Lisle, Ill., assignors to United States Gypsum Company, Chicago, Ill., a corporation of Illinois

Filed Apr. 29, 1964, Ser. No. 363,497
18 Claims. (Cl. 156—40)

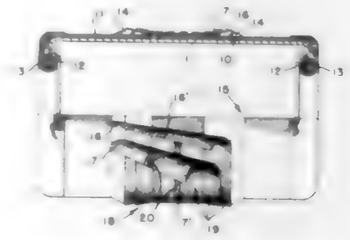
Sealed edge gypsum board of the type having the edge portions of the bottom cover sheet underlapping and adhered to the edge portions of the top cover sheet is formed with the slurry being confined entirely by the cover sheets throughout the formation of the board. Support guides on the support bed of the machine raise the edge portions of the bottom cover sheet to form a trough which is of a depth substantially greater than the clearance in the throat. The slurry is deposited in this trough. The top cover sheet is guided onto the raised edge portions of the bottom sheet, with these edge portions contacting the underside of the top sheet to form an envelope of

the cover sheets. Support guides maintain the contact between the cover sheets to confine the slurry, including the slurry head accumulated at the entrance to the throat, as the sheets and the slurry are moved to and through the throat and are thereby formed into board.

3,373,066
METHOD AND INTERMEDIATE ARTICLE OF MANUFACTURE FOR MAKING RADIAL TIRES

Herbert B. Hindin, Southfield, Mich., assignor to Uniroyal, Inc., a corporation of New Jersey

Filed Jan. 2, 1964, Ser. No. 335,162
8 Claims. (Cl. 156—128)



This application discloses a method of making a radial tire including a single building stage wherein the radial body ply or plies are applied conventionally to the building drum, a breaker comprised of an even number of low bias cut angle cord plies is subsequently applied thereon, the breaker plies being lubricated except for a narrow central circumferential strip which is left tacky, and the building of the tire is thereafter completed followed by the forming and curing of the tire. It also discloses the intermeditae article of said method before the forming of the tire.

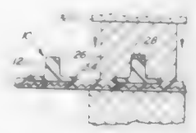
3,373,067
METHOD OF MAKING CLEATED CONVEYOR BELTS

Carlyle E. Hagstrom, Portland, Oreg., assignor to Goodyear Rubber & Supply Company, Inc., Portland, Oreg., a corporation of Oregon

Filed Feb. 19, 1965, Ser. No. 433,917
4 Claims. (Cl. 156—153)

This application discloses a method of making cleated conveyor belts. In the illustrated method the outer cured rubber surface of a length of finished belt material is roughened at intervals therealong corresponding to the desired spacing of the cleats. A generally I-shaped strip of uncured rubber cleat material is then inserted into a preheated aluminum mold having a cavity conforming in size and shape to the desired finished size and shape of the cleat, the amount of strip material being such that it substantially fills the cavity and has an edge portion protruding beyond the outer end thereof. A vulcanizing cement is applied to the roughened surface that will receive the cleat, and the loaded mold is placed on the belt overlying the roughened surface, after which

a vulcanizer press presses the mold against the belt and applies heat to the mold. The resulting heat and pressure transmitted to the strip material causes such material to flow into exact conformity with the mold cavity and into interengagement with the roughened surface of the belt to form a permanent bond with the latter. Simultaneously, the strip material is cured. The open end portion of the mold cavity is so shaped that the base of

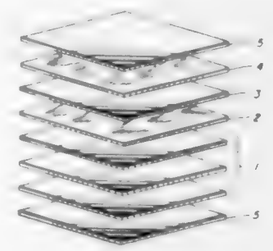


the resulting finished cleat is formed with curved surfaces which merge smoothly and gradually with the surface of the belt. Thus, upon removal of the mold from the belt, no finish grinding operations are required, and the belt is provided with a permanent cleat which appears as an integral part of the belt material. Several cleats can be joined to the belt simultaneously using the foregoing method.

3,373,068
PROCESS FOR PREPARING AN EMBOSSED LAMINATE

Gene Edward Grosheim and George Edward Power, Cincinnati, Ohio, assignors to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware

Continuation-in-part of application Ser. No. 423,945, Jan. 7, 1965. This application Nov. 16, 1966, Ser. No. 604,507
13 Claims. (Cl. 156—219)



1. A process for producing a decorative laminate with an embossed surface comprising preparing an assembly in superimposed relationship of

(1) a plurality of thermosetting phenolic resin impregnated core sheets,

(2) a decorative sheet positioned immediately above said core sheets and impregnated with a noble thermosetting resin which is not subject to significant darkening upon the application of heat,

(3) a release sheet positioned above said decorative sheet carrying on the side of said release sheet away from said decorative sheet a raised printed design providing increased thickness in the printed area wherein the raised printed design has substantially no tendency to deform under the subsequently applied laminating conditions, thereupon heat and pressure consolidating the assembly to a unitary structure and removing the release sheet carrying the raised printed design.

3,373,069
METHOD OF MAKING AN INFLATABLE PANEL

Warren Gillespie, Jr., Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Original application Jan. 13, 1961, Ser. No. 82,658, now Patent No. 3,220,004, dated Nov. 23, 1965. Divided and this application Aug. 10, 1964, Ser. No. 392,992
2 Claims. (Cl. 156—285)

This invention relates to a method of forming inflatable panels for use as erectable radio signal reflecting space vehicles wherein two sheets of the material making up the inflatable are placed in overlying relationship on a plate having a plurality of male protuberances thereon, a partial vacuum is created between the plate and the sheet of material adjacent thereto to draw the sheets into conformity with the male protuberances thereon, a flow of heated gas is directed against the top of said sheets to thereby further conform the sheets to the pattern on the plate through the combined effects of heat and pressure, a sublimatory inflation material is inserted between the sheets and the peripheries of the sheets are bonded to thereby form an inflatable panel.

3,373,070
LAMINATES

Peter E. Fuerst, Coshocton, Ohio, assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 1, 1964, Ser. No. 364,319
2 Claims. (Cl. 161—79)

2. An abrasion-resistant plastic laminate comprising a core and print sheet and superimposed thereon a cured thermosetting resin-impregnated overlay paper of fibrous material containing silica flour, said silica being uniformly distributed throughout said paper, the silica particles being held in a network of fibrous material, said silica being present in said paper in weight proportions of about one part of silica to from about six parts to about forty parts of fibrous material, said resin-impregnated overlay paper being clear and highly translucent in its cured condition.

3,373,071
LAMINATES

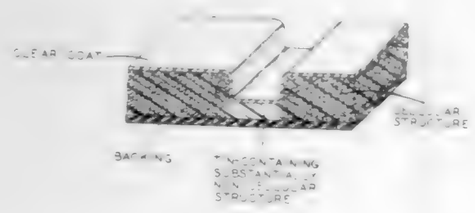
Peter E. Fuerst, Coshocton, Ohio, assignor to General Electric Company, a corporation of New York

Filed Mar. 26, 1964, Ser. No. 354,968
4 Claims. (Cl. 161—79)

2. An abrasion-resistant decorative laminate comprising a core and a single surface lamina positioned thereover, said surface lamina comprising a print sheet impreg-

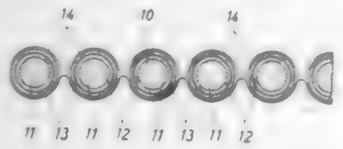
nated with a thermosetting resin and coated with a composition comprising (1) 100 parts by weight of a melamine aldehyde resin, (2) from about 5 to about 30 parts by weight of silica flour, (3) from about 10 to about 50 parts by weight of microcrystalline cellulose having a refractive index approximating that of the cured melamine aldehyde resin said microcrystalline cellulose being mechanically disintegrated level-off D.P. cellulose, and (4) up to about 3% of a water-soluble thickening agent, said composition being clear and highly translucent in its cured condition.

3,373,072
CHEMICAL EMBOSSING METHOD AND PRODUCT
James R. Jones, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Dec. 16, 1965, Ser. No. 514,353
7 Claims. (Cl. 161—116)



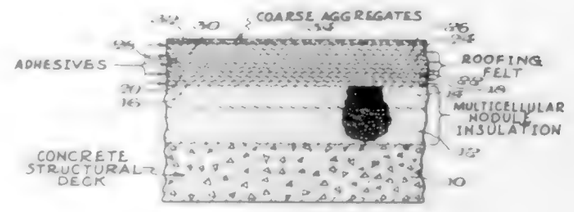
1. A chemically embossed surface covering comprising a sheet of fused and plasticized vinyl resin, the sheet having a plurality of cellular elevated regions separated by substantially non-cellular lower regions arranged in a predetermined pattern, the cellular elevated regions containing the decomposition products of an organic blowing agent, the substantially non-cellular lower regions containing said blowing agent in undecomposed form and a tin salt.

3,373,073
ELASTICALLY EXTENSIBLE BAND
Christian Heinrich Turcksin, 27 Saganer Strasse, Detmold Lippe, Germany
Filed Mar. 18, 1964, Ser. No. 352,874
Claims priority, application Austria, May 31, 1963, A 4,438/63
5 Claims. (Cl. 161—144)



A band of high elasticity, which is extensible in both the longitudinal and transverse directions, is produced in an extremely simple manner by juxtaposing highly elastic longitudinal threads in side-by-side relationship and connecting them by means of an elastic material so as to form a flat band. Each of the elastic longitudinal threads consists of an elastically extensible core thread with textile threads wrapped around the core thread.

3,373,074
THERMAL ROOF INSULATION AND METHOD OF PREPARING AN INSULATED BUILT-UP ROOF
Dominic D'Eustachio, Pittsburgh, and Howard E. Johnson, Trafford, Pa., assignors to Pittsburgh Corning Corporation, Port Allegany, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 363,518, Apr. 29, 1964. This application July 27, 1965, Ser. No. 475,222
19 Claims. (Cl. 161—161)

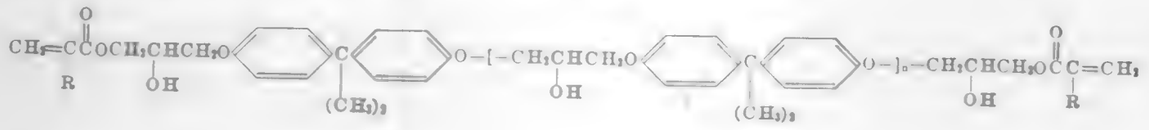


Thermal insulation having interconnected interstitial voids for the flow of fluid between contiguous spherical nodules. The thermal insulation includes substantially spherical multicellular glass nodules arranged in contiguous relation and bonded to each other by a thermoplastic bituminous material with interconnected interstitial voids between the nodules. The cellular glass nodules have thermal insulating properties and are themselves impervious to moisture. The thermo-plastic bonding material provides flexibility so that a layer of the thermal insulation can deflect and conform to irregular surfaces. The thermal insulation may be fabricated as a roof insulation board or may be applied directly to a substrate as a monolithic layer. The method of making the roof board includes admixing heated nodules and liquefied bitumen bonding material, forming a layer of this mixture and applying a compressive force thereto so that the nodules are bonded in contiguous relation with interconnected interstitial voids therebetween. The method of making a monolithic layer of the thermal insulation includes spreading an admixture of nodules and liquefied bitumen over a roof deck in a manner that the nodules are in contiguous relation with interconnected interstitial voids therebetween.

3,373,075
DIACRYLATE COMPOSITIONS, HEAT RESISTANT POLYMERS CONTAINING THE SAME AND METHOD OF MAKING ELECTRICAL LAMINATES THEREFROM
Frank Fekete, Monroeville, Patrick J. Keenan, Pittsburgh, and William J. Plant, Monroeville, Pa., assignors to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Continuation-in-part of abandoned application Ser. No. 160,247, Dec. 18, 1961. This application Dec. 17, 1963, Ser. No. 331,106
6 Claims. (Cl. 161—185)

4. A laminated article comprising glass fibers embedded within a cured thermoset resinous composition comprising a copolymerized mass formed by addition polymerization of

(a) from 95 to 50 percent by weight of a diacrylate having the formula



wherein R is a substituent selected from the class consisting of hydrogen, methyl and ethyl radicals and n is an integer from zero to twenty; and

(b) about 50 to 50 percent by weight of at least one copolymerizable monomer having a terminal $>C{=}CH_2$ radical;

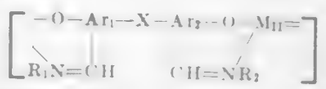
said laminated article after copolymerization of said mass having been exposed to an elevated temperature which is above its curing temperature and also is above 150° F. for more than one hour.

3,373,076
LAMINATION OF AMORPHOUS FLUOROCARBON POLYMER AND GLASS AND METHOD OF MAKING SAME
Rex B. Gosnell, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California
No Drawing. Filed Mar. 29, 1965, Ser. No. 443,682
13 Claims. (Cl. 161—189)

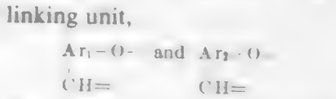
1. A novel glass laminate comprising at least two glass sheets separated by a plastic interlayer comprising an amorphous, high molecular weight chlorotrifluoroethylene, tetrafluoroethylene, vinylidene fluoride terpolymer.

3,373,077
SOLUBLE AND FUSIBLE, HEAT RESISTANT, CHELATE POLYMERS
John J. O'Connell, Waltham, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 7, 1963, Ser. No. 286,196
22 Claims. (Cl. 161—198)

1. Chelated metal polymers characterized by repeating units of the formula



where X is a linking unit,



are o-hydroxyarylcarboxaldehyde residues and wherein R_1 and R_2 are aliphatic groups having at least 4 carbon atoms, $=NR_1$ and $=NR_2$ are mono-primary-amine residues and M_{II} is a divalent tetracoordinated metal atom.

2. The polymers of claim 1, wherein said M_{II} represents a zinc atom.

3,373,078
LAMINATES HAVING AN ADHESIVE COMPOSITION CONTAINING AN OXIDIZED POLYETHYLENE AND A RUBBERY TERPOLYMER
Thomas E. Ferington, Sandy Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Dec. 17, 1964, Ser. No. 419,238
16 Claims. (Cl. 161—217)

1. Adhesive composition consisting essentially of:

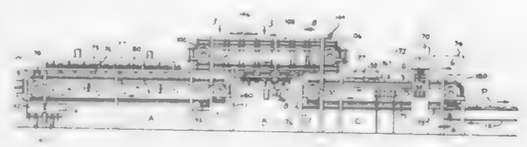
(a) a normally solid rubbery terpolymer of ethylene, propylene and a nonconjugated hydrocarbon diene;

(b) for each 100 parts by weight of said terpolymer, from about 15 to about 105 parts by weight of a normally solid oxidized, linear polyethylene having a density of from about 0.937 to about 1.050 grams per cubic centimeter, a crystalline melting point of from about 125° to about 135° centigrade, a melt index of from about 0.1 to about 50, a carbonyl content of from about 0.2 to about 7.5 percent by weight, and an oxygen functionality index greater than about 0.03; and

(c) for each of 100 parts by weight of said terpolymer, from about 30 to about 120 parts by weight of a hard clay.

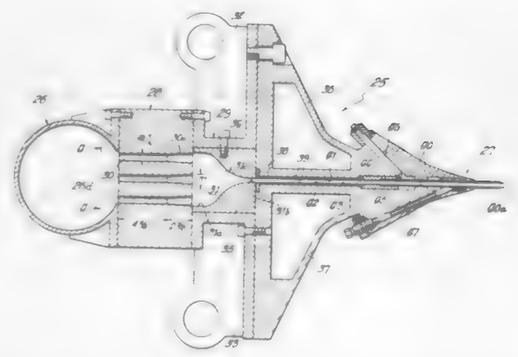
9. Laminate comprising superimposed layers of metal sheet each of which is directly adhered to an intervening layer consisting essentially of an adhesive composition as defined in claim 1.

3,373,079
PULP AND FIBER MOLDING APPARATUS INCLUDING RESIN APPLICATION MEANS
Watson S. Eastman, 7325 SW. Newton Place, Portland, Oreg. 97225, and Leo M. Bergman, Portland, Oreg.; said Bergman assignor to said Eastman
Filed Sept. 18, 1964, Ser. No. 397,369
17 Claims. (Cl. 162—265)



5. A pulp molding machine comprising suction pick-up dies, means for forming pre-forms on said dies from an aqueous slurry, a first drying stage arranged to dry said pre-forms from one side to center, a second drying stage arranged to dry said pre-forms from opposite side to center, means to move said pre-forms from said forming means to said first drying stage and from said first drying stage to said second drying stage, a high compression stage, and means for moving said pre-forms from said second drying stage to said high compression stage.

3,373,080
STOCK INLET FOR A PAPERMAKING MACHINE
David W. Appel and John B. Graham, Neenah, Wis., and Charles L. Sanford, Memphis, Tenn., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Apr. 8, 1965, Ser. No. 446,643
5 Claims. (Cl. 162—343)



A stock inlet for a papermaking machine including a stock redirecting section having an array of openings through it connected to the side of a stock header, a pair of parallel plates forming a thin stock turbulizing passage between them for directing stock onto a Fourdrinier fabric and a transition section formed with a passage therethrough which has the relatively large thickness at its entrance end of the array of openings and which has at its outlet end the relatively thin thickness of said passage for flowing the stock from said openings to said passage.

3,373,081
METHOD FOR DIAGNOSING PHEOCHROMOCYTOMA

Albert Sjoerdsma, Bethesda, Md., and Karl Engelman, Boston, Mass., assignors to the United States of America as represented by the Secretary of the Department of Health, Education, and, Welfare

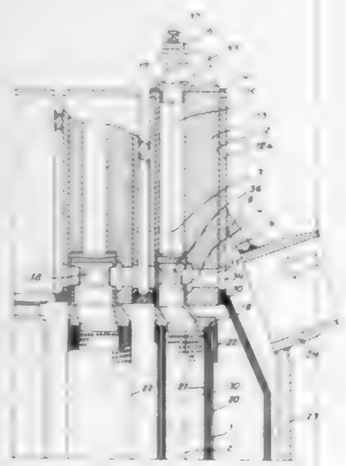
No Drawing. Filed Apr. 28, 1964, Ser. No. 363,282
4 Claims. (Cl. 167—84.5)

A new, accurate method for disgnosing pheochromocytoma which comprises determining the pressor response in systolic blood pressure to intravenous injection of tyramine. The baseline systolic blood pressure of a patient is determined, an intravenous injection of 250 to 1000 micrograms of tyramine is administered, and a rise in systolic blood pressure greater than 20 mm. of mercury is observed if pheochromocytoma is present.

3,373,082
CONTROL OF NUCLEAR POWER REACTOR

Jöns Arthur Dahlgren, Saltsjobaden, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden

Filed Jan. 11, 1966, Ser. No. 520,005
Claims priority, application Sweden, Jan. 20, 1965, 687/65
5 Claims. (Cl. 176—28)



The reactor core contains fuel elements extending generally parallel to a central axis of the core and having respective longitudinal axes located at different radial distances from the core axis. A moderator fluid is fed into the core and between the fuel elements, and means are provided to mount each of at least some of those elements for rotation about only one axis which is offset from the core axis and is eccentric to and parallels the said longitudinal axis of the element, whereby the quantity of moderator fluid between the fuel elements is variable.

3,373,083
METHOD OF INHIBITING THE CORROSION OF GRAPHITE IN A CO_2-COOLED NUCLEAR REACTOR

Charles Koch and René Ranc, Grenoble, France, assignors to Commissariat à l'Energie Atomique, Paris, France

No Drawing. Filed May 16, 1966, Ser. No. 550,142
Claims priority, application France, June 9, 1965, 20,087
3 Claims. (Cl. 176—38)

The corrosion of graphite in a graphite moderated CO_2-cooled nuclear reactor is inhibited by adding about 0.2% by weight of SiH_4, Si_2H_6 or $Si(OC_2H_5)_4$ to the CO_2 coolant.

3,373,084
SYNTHESIS OF STEROIDS

Patrick A. Diassi, Westfield, and Pacifico A. Principe, South River, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 23, 1965, Ser. No. 442,202, now Patent No. 3,320,290, dated May 16, 1967. Divided and this application Jan. 27, 1967, Ser. No. 623,789
1 Claim. (Cl. 195—51)

Preparation of 4,8,14-trimethyl - 18 - nor-8α,9β,14β-androst-4-en-3,11,17-trione by subjecting 4α,8,14 - trimethyl-18-nor-5α,8α,9β,14β-androstane-3,11,17-trione to *Pseudomonas testosteroni*.

3,373,085
METHOD OF PURIFYING COKE-WORKS WASTE LIQUOR

Philip X. Masciantonio, Penn Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of Delaware

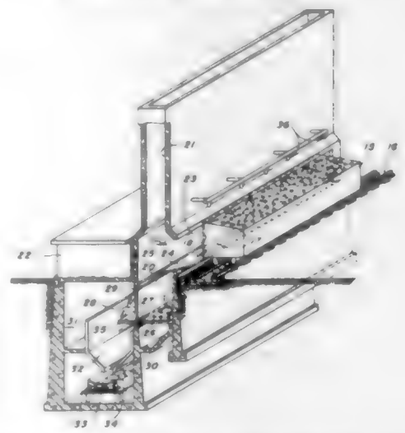
Filed Sept. 12, 1962, Ser. No. 223,181
5 Claims. (Cl. 201—21)

1. In a method of recovering phenol from coke-works waste water contaminated therewith, the steps comprising bringing said water into contact with coking coal, thereby permitting adsorption by the coal of phenol from the water, draining the water from the coal, and charging the coal into a coke oven.

3,373,086
METHOD AND APPARATUS FOR QUENCHING COKE

Hugo S. Wilson, Gary, Ind., assignor to United States Steel Corporation, a corporation of Delaware

Filed Nov. 19, 1963, Ser. No. 324,778
9 Claims. (Cl. 201—39)

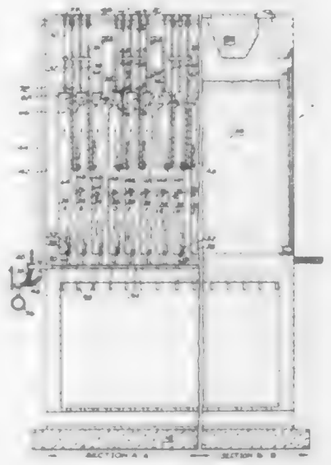


Coke-quenching method and apparatus in which coke is pushed from ovens into a car, transported to a quenching apparatus and dumped therein. Water is sprayed on the coke within the apparatus, after which the quenched coke is conveyed away for further processing. Expedites return of cars and prolongs their life by avoiding quenching while coke remains in cars.

3,373,087
COKE OVEN STRUCTURE

Joseph Van Ackeren, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Aug. 31, 1964, Ser. No. 393,124
10 Claims. (Cl. 202—135)



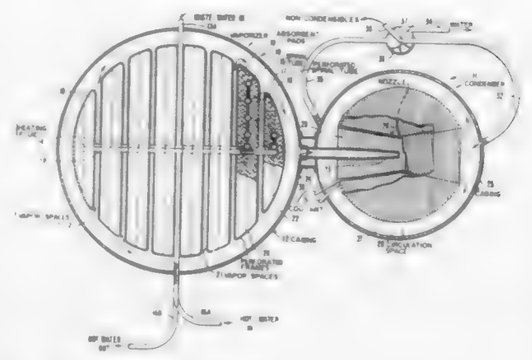
1. In a high chambered horizontal coking retort oven the combination of heating elements therefor to provide uniform heat for the coking chambers comprising,
elongated heating walls on opposite sides of said coking chambers,
said heating walls each having transverse division walls and a plurality of intermediate partition walls therebetween forming groups of vertical combustion flues connected to a common crossover duct,
said combustion flues each having a base portion with an opening therein forming a gas port for a low burner,
a source of pressurized fuel gas for each of said low level burners located below said combustion flue base portion,
conduit means connecting said source of pressurized fuel gas to each of said low level burners,
said division walls having vertical passageways extending downwardly therethrough and each said pasageway terminating in a gas port for a high level burner in a flue adjacent to said respective division wall,
said high level burner positioned above said low level burner in said respective flues,
a source of pressurized fuel gas for each of said high level burners located above the upper portion of said combustion flues, and
means connecting said vertical passageways with said source of pressurized fuel gas.

3,373,088
ATTITUDE-INDEPENDENT DISTILLATION APPARATUS

James F. Harkee, Glendora, and Myron B. Cooley, Pomona, Calif., assignors to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

Filed Jan. 8, 1965, Ser. No. 424,300
8 Claims. (Cl. 202—185)

1. Distillation apparatus for obtaining pure water from waste water and like contaminated liquids comprising:
a vaporizer unit generating vapor from the contaminated liquid,
means for circulating heating medium through said vaporizer unit, and
a vapor delivering nozzle leading heated vapor out of said vaporizer unit;
a condenser unit comprising a casing associated with said vaporizer unit and having a nozzle arranged therein, the vapor delivering nozzle discharging vapor into the throat of the nozzle in the condenser casing,
an internal wall within said casing and disposed outwardly with respect to the nozzle in the casing in surrounding relation thereto,

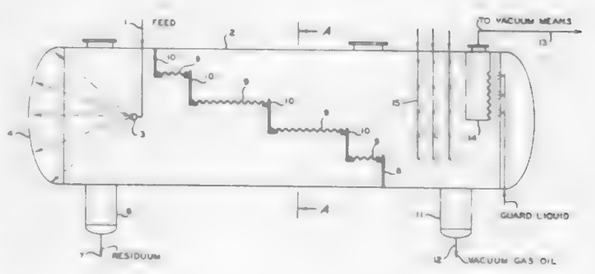


means associated with said nozzle in the casing and said internal wall within the casing for circulating cooling medium within said casing so as to cool said nozzle in the casing and said internal wall within the casing, and
said internal wall within said casing cooperating therewith to define a circulation path therebetween from the outlet end to the inlet end of said nozzle in the casing for the vapor flowing through said nozzle in the casing and effective to cause condensation of the said vapor; and
means effective to continuously withdraw some of the condensed vapor from said condenser unit and deliver it as liquid to storage, to vent non-condensed vapor, and to return undelivered condensed vapor to said condenser unit.

3,373,089
HORIZONTAL DISTILLATION VESSEL HAVING DEMISTERS IN DIFFERENT PLANES AND METHOD

Lucien H. Vautrain and Dale L. Smith, Okmulgee, and Paul M. Waddill and Donald M. Little, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed July 27, 1964, Ser. No. 385,422
17 Claims. (Cl. 203—40)



A distillation vessel adapted for horizontal flow therethrough of vapors is equipped with at least one demister element disposed at a substantial angle to the vertical. In one embodiment the demister is disposed horizontally.

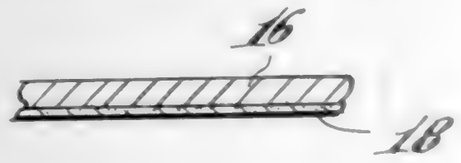
In another embodiment the demister section of the vessel contains several demister elements as described. In a further embodiment a stair-step demister arrangement is provided, a specific form of which is accomplished by forming the stair-step arrangement employing a screen extended over progressively lower disposed support bars extending across the vessel. In operation a method for distilling a distillable material by feeding it to one end of a vessel according to the invention causing horizontally travelling vapors momentarily to depart from their horizontal travel, then continuing the horizontal travel of these vapors and recovering vapors and or condensate from the other end of said distillation vessel.

3,373,090

ADHESIVE ELECTROLYTIC RECORDING PAPER

Milton Alden, 419 Grove St.,
Needham, Mass. 02192

Filed Nov. 15, 1963, Ser. No. 324,003
2 Claims. (Cl. 204—2)



A moist recording paper impregnated with a solution of electrolyte and coated on one surface with an adhesive which may be electrically conductive.

3,373,091

DATA STORAGE DEVICE AND METHOD

Eugene Findl, Pasadena, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California

Filed May 21, 1964, Ser. No. 369,240
12 Claims. (Cl. 204—18)

1. An efficient, easily reversible process for the reproduction of a light image requiring a low electrical potential comprising:

(a) exposing to said light image a photoconductive layer on a contiguous electrolytically conductive layer, said electrolytically conductive layer consisting essentially of:

(I) a first film having a dye fixed therein whose color changes at a set electrical potential and having at least one associated ion movable therein adapted to change concentration by the passage of current through said first film with said concentration change causing an electrical potential change in said first film which includes said set dye electrical potential, and

(II) a contiguous second film having at least one counterpart ion movable therein adapted to change concentration by the passage of current through said second film, said counterpart ion concentration change being opposite to said associated ion concentration change; and

(b) preventing said associated ions from mixing with said counterpart ions, said ions being related by a reversible electrochemical reaction; and passing current selectively through the light exposed portions of said photoconductive layer and the adjoining portions of said electrolytically conductive layer to change the color of said dye in said portions.

3,373,092

ELECTRODEPOSITION OF PLATINUM GROUP METALS ON TITANIUM

Kenkichi Yoshimura, Yokohama-shi, Kanagawa-ken, Kiyoshi Aoki, Tokyo, and Shiro Honda, Yokohama-shi, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed Mar. 24, 1964, Ser. No. 354,825
Claims priority, application Japan, Mar. 29, 1963, 38/14,116
4 Claims. (Cl. 204—32)

When titanium objects are immersed in fused alkali metal halide salts until the surface is roughened, platinum metal electrodeposits formed thereafter in aqueous electrolytes perfectly adhere to the titanium and are so continuous that the plated titanium, when employed as an anode in a mercury cell for caustic and chlorine production, significantly reduces the cell voltage as compared to similarly plated titanium electrodes pretreated in a conventional manner.

3,373,093

METHOD OF FORMING AN OXIDE COATING ON METALS

Richard L. Every, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Continuation-in-part of application Ser. No. 368,956, May 20, 1964. This application Mar. 2, 1966, Ser. No. 531,261
2 Claims. (Cl. 204—39)

1. A method of putting an oxide coating on metallic nickel comprising:

(a) immersing the metallic nickel in a molten salt consisting essentially of one salt selected from the group consisting of alkali metal nitrates and alkali metal chlorates;

(b) making the metallic nickel the anode in an electrolytic circuit including the alkali metal salt; and

(c) passing sufficient current through said electrolytic circuit to provide a current density between about 1 to about 50 ma./sq. cm.

2. A method of putting an oxide coating on platinum having a previously applied coating of platinum black deposited thereon comprising:

(a) immersing said platinum in a molten salt consisting essentially of one salt selected from the group consisting of alkali metal nitrates and alkali metal chlorates;

(b) making said platinum the anode in an electrolytic circuit including the alkali metal salt; and

(c) passing sufficient current through said electrolytic circuit to provide a current density between about 1 to about 50 ma./sq. cm.

3,373,094

GOLD AND GOLD ALLOY ELECTROPLATING

Donald Gardner Foulke, Plainfield, N.J., assignor to Sel-Rex Corporation, Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 392,286, Aug. 26, 1964. This application Oct. 18, 1965, Ser. No. 497,454
15 Claims. (Cl. 204—43)

Bright electroplated gold and gold alloys are obtained from an aqueous acid electroplating bath which contains as a brightening agent a proportion of piperazine or alkyl substituted piperazine.

3,373,095

ELECTROPLATING OF COPPER

Charles N. Abbott, Dayton, Ohio, assignor to The Dayton Bright Copper Company, Dayton, Ohio

No Drawing. Continuation-in-part of application Ser. No. 375,344, June 15, 1964. This application June 5, 1967, Ser. No. 643,405
8 Claims. (Cl. 204—52)

The present invention relates to improved extender compositions used in copper electroplating comprising a sulfurized sulfonated aromatic compound, an amino derivative of a triarylmethane, and as a leveling agent a compound containing the radical

$$-N=C-X-$$
$$\|$$
$$S$$
$$|$$
$$Hg$$

The combination of the ingredients of the type specified gives synergistic results in the form of improved brightness and leveling properties over a wider range of current density than previous compositions used in copper electroplating baths.

3,373,096

ELECTROLYTIC PREPARATION OF CHLORINE PENTAFLUORIDE

Emil A. Lawton and Howard H. Rogers, Woodland Hills, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Filed Sept. 24, 1964, Ser. No. 399,110
3 Claims. (Cl. 204—59)

1. A process for synthesizing chlorine pentafluoride comprising the steps of passing an electric current between spaced electrodes in an electrolyte comprising chlorine, hydrogen fluoride, and an alkali metal halide, whereby chlorine pentafluoride is evolved, and collecting the evolved chlorine pentafluoride.

3,373,097

METHOD FOR SEPARATION OF A METAL-CONTAINING HALIDE PHASE FROM A GANGUE-CONTAINING SILICATE PHASE AND ELECTROLYSIS OF HALIDE PHASE TO OBTAIN THE METAL

John M. Gomes, Don H. Baker, Jr., and Kenji Uchida, Reno, Nev., assignors to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Feb. 16, 1965, Ser. No. 433,229
9 Claims. (Cl. 204—64)

1. A process for separating a metal from gangue constituents in a mineral comprising adding to the mineral an alkali metal halide and an alkali metal silicate, heating the mixture to a temperature and for a time sufficient to form a halide phase containing the desired metal and a silicate phase containing the gangue constituents, and separating the two phases.

9. The process of claim 1 in which the metal is separated from the halide phase by electrolysis.

3,373,098

PHOTOCHEMICAL METHOD FOR THE PREPARATION OF SUBSTITUTED POLYHEDRAL BORANE ANIONS

Swiatoslaw Trofimenko, Philadelphia, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 10, 1964, Ser. No. 337,514
9 Claims. (Cl. 204—157.1)

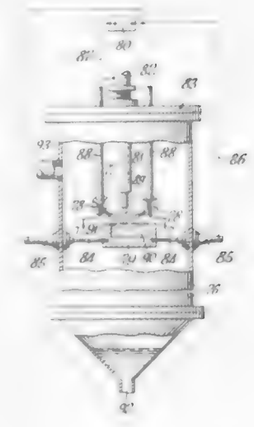
1. A process for preparing substituted polyhedral borane anions which comprises irradiating with ultraviolet light a solution containing a divalent polyhedral borane anion selected from the class consisting of $[B_{10}H_{10-n'}(Hal.)_{n'}]^{-2}$ and $[B_{12}H_{12-n''}(Hal.)_{n''}]^{-2}$ wherein n' is a positive whole number from 1 to 10, inclusive, n'' is a positive whole number from 1 to 12, inclusive, and Hal. is a halogen, and an anion A, to form a polyhedral borane anion distinct from the anion irradiated.

3,373,099

PROCESS OF CRACKING LIQUID HYDROCARBONS IN AN ELECTRIC ARC USING LIQUID METAL ELECTRODES

Harry E. Kennedy, Berkeley, Calif., assignor to Union Carbide Corporation, a corporation of New York

Filed Mar. 24, 1965, Ser. No. 442,270
3 Claims. (Cl. 204—171)



1. A process for cracking liquid hydrocarbons which comprises directing a stream of electrically conductive liquid downward toward a pool of electrically conductive liquid, said pool being at a negative potential in relation to said stream, forming an electric arc in the region where said stream contacts said pool and introducing liquid hydrocarbon to the region of said arc.

3,373,100

PRECONTROL SALINITY COMPENSATOR FOR AUTOMATIC CATHODIC PROTECTION SYSTEM

Haydn Rubelmann, 1222 Cromwell Ave., Chesapeake, Va. 23320

Filed May 22, 1964, Ser. No. 369,645
8 Claims. (Cl. 204—196)

1. A cathodic protection assembly for controlling the amount of alternating current supplied to a cathodic protection load in accordance with the resistance of an electrolyte, comprising:

a source of alternating current;

first and second input windings connected in opposing senses;

first and second current rectifying paths each coupled to said alternating current source and coupled to said first and second input windings respectively;

means in said second path responsive to the resistance of the electrolyte for changing its electrical characteristics in accordance with the resistance of the electrolyte;

bi-directional gating means coupled to said source for receiving supply current therefrom;

a threshold conduction device connected in circuit with said bi-directional gating means;

said threshold conduction device having a signal control element for receiving signals to drive said device to conduction; and

first and second signals control windings connected to the signal control element of said threshold device, said windings being located in coupling relation with said first and second input windings to thereby receive by induction the algebraic sum current thereof;

whereby when the current flowing in said first and second input windings is sufficiently unequal, a gating signal pulse is produced in said signal control windings to drive said threshold device to conduction thereby causing current to flow in said bi-directional gating means for a portion of an alternating current cycle according to the resistance of said electrolyte.

3,373,101

FRIEDEL-CRAFTS CATALYST PLUS BITUMEN TO PRODUCE PITCH OF INCREASED BETA RESIN CONTENT

Hillis O. Folkins and John W. Walsh, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Jan. 24, 1964, Ser. No. 339,905
14 Claims. (Cl. 208—40)

1. A process for the preparation of a petroleum pitch which comprises heating a cracked petroleum bituminous material at a temperature of about 650° to 850° F. in the presence of a Friedel Crafts catalyst, the concentration of said catalyst being about 0.1 to 5.0 wt. percent of the petroleum bituminous material until a pitch having a softening point of 180° to 250° F. and a beta-resin content from 17 to 24 percent is produced and recovering said pitch from said process.

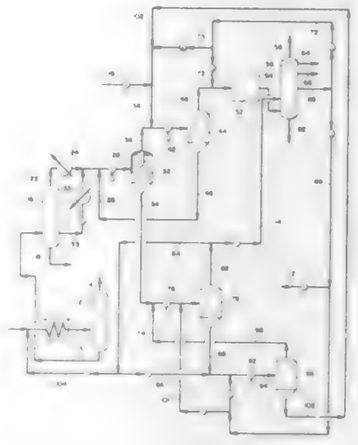
3,373,102

PRETREATMENT OF CATALYTIC CRACKING FEED STOCKS

Bernard L. Schulman, Livingston, N.Y., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Dec. 17, 1965, Ser. No. 514,603
6 Claims. (Cl. 208—91)

1. A method for removing catalyst contaminating material from oil feed stocks for catalytic cracking which comprises mixing a high boiling contaminated hydrocarbon oil feed with finely divided cracking catalyst at an elevated temperature in at least one stage, passing the resulting oil-catalyst mixture into a hydroclone for separating at least 95% of the partially spent catalyst particles from treated oil feed having a reduced contaminant content, catalytically cracking the treated oil feed to produce lower boiling hydrocarbons, fractionating the catalytically cracked lower boiling products to recover gasoline and cycle oil, mixing at least part of the recovered cycle oil with said partially spent finely divided catalyst particles separated in said hydroclone to regenerate and wash said finely divided catalyst particles and passing the resulting mixture to a second hydroclone for separating



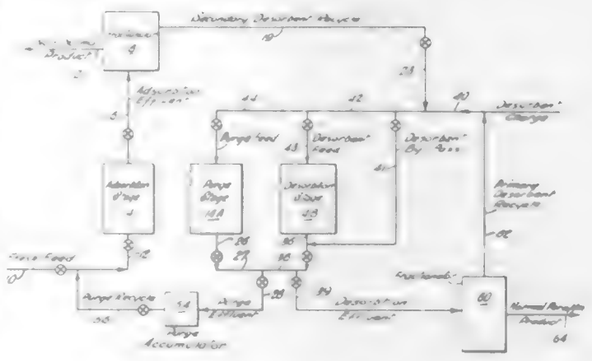
washed or regenerated finely divided catalyst particles from the cycle oil in at least one stage and utilizing the separated washed finely divided catalyst for treating further amounts of contaminated oil feed for catalytic cracking.

3,373,103

N-HYDROCARBON SEPARATION WITH A MOLECULAR SIEVE

David E. Cooper and Ralph M. Lewis, Nederland, Henry D. Moorer, Port Arthur, and Benjamin F. Smith, Groves, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 1, 1966, Ser. No. 524,050
16 Claims. (Cl. 208—310)



A vapor phase process for the separation of straight chain hydrocarbons from mixtures thereof with non-straight chain hydrocarbons with a molecular sieve selective adsorbent which adsorbs the straight chain hydrocarbons from the feed mixture. The adsorbed straight chain hydrocarbons are desorbed from the molecular sieve by a desorbing gas stream composed of lighter straight chain hydrocarbons.

3,373,104

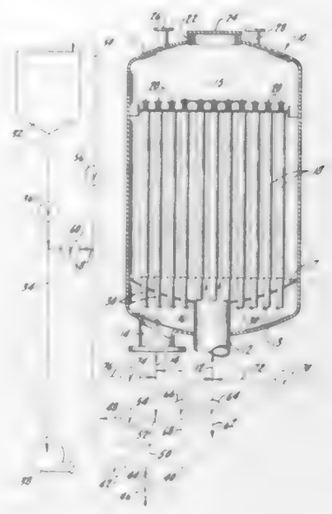
METHOD OF CLEANING FILTER TANK

Leo F. Ryan, Westwood, N.J., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey

Filed Dec. 17, 1964, Ser. No. 419,126
15 Claims. (Cl. 210—32)

A method of cleaning pre-coated filters in a filter tank in which the tank is drained, then air is passed through the filters in reverse flow to normal operation while wash

water is gradually added to the tank to gradually submerge the filters, whereafter the wash liquid is drained



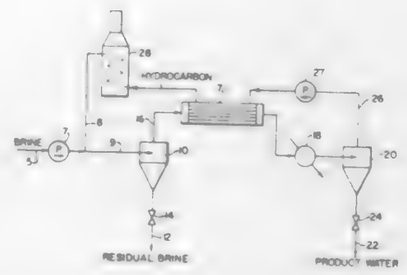
from the tank while air flow is continued, finally air flow is stopped and the filters are backwashed with liquid.

3,373,105

RECOVERY OF FRESH WATER FROM BRINE

Frank E. Guptill, Jr., Fishkill, and Howard V. Hess, Glenham, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 3, 1964, Ser. No. 394,244
19 Claims. (Cl. 210—59)



Fresh water is separated from brine by selective extraction with an organic liquid at elevated temperature and pressure in a batch extraction process, preferably in a series of counterflow batch extraction steps, utilizing as solvent higher molecular weight hydrocarbons, alcohols, ethers, aldehydes, and forming a liquid complex or extract phase immiscible with residual brine, wherein separation of said extract phase from residual brine is preferably carried out by utilizing a centrifugal force of at least one g developed in a vortex-forming zone, e.g. a cyclone separator.

3,373,106

WELL-DRILLING METHOD

John B Lister, Scottsdale, Ariz., and Victor A. Rundle, Oakland, Calif., assignors to Seepage Control, Inc., Phoenix, Ariz., a corporation of Arizona

No Drawing. Filed Apr. 8, 1965, Ser. No. 446,713
10 Claims. (Cl. 252—8.5)

A method of drilling a borehole through an earth formation containing strata which tend to absorb water and swell or slough using an aqueous drilling fluid such as brine or water to which has been added a minor quantity of an emulsion of petroleum wax.

3,373,107

FRICTION PRESSURE REDUCING AGENTS FOR LIQUIDS

Herbert L. Rice, Kenneth W. Becker, and Frank L. Szabo, Houston, Tex., assignors to Milchem Incorporated, Houston, Tex., a corporation of Delaware

No Drawing. Filed July 16, 1964, Ser. No. 383,230
2 Claims. (Cl. 252—8.55)

Friction pressure reducing compositions including cationic compounds generally characterized as alkyl-substituted mono- or poly-functional amines in which at least one alkyl group contains from 16–20 carbons having a straight-chain segment of at least 16 carbon atoms.

3,373,108

METHOD OF PREPARING OVERBASED CALCIUM SULFONATE OIL CONCENTRATES

Robert A. Woodle, Edward H. Holst, and Robert S. Edwards, Nederland, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 12, 1966, Ser. No. 541,949
4 Claims. (Cl. 252—33)

A method of producing an overbased calcium sulfonate lube oil concentrate comprising contacting a mixture of normal calcium sulfonate, basic calcium inorganic compound, an oxygenated vehicle, a lubricating oil and a thiophenol with carbon dioxide and separating residual water, oxygenated vehicle and thiophenol from the final reaction mixture leaving said concentrate as residue.

3,373,109

CRYSTALLINE ALUMINOSILICATE CATALYST

Vincent J. Frilette, Cherry Hill Township, Camden County, N.J., and Russell W. Maatman, Sioux Center, Iowa, assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 774,124, Nov. 17, 1958. This application Oct. 29, 1963, Ser. No. 319,639
8 Claims. (Cl. 252—455)

1. A catalyst consisting essentially of a crystalline aluminosilicate characterized by rigid three-dimensional networks and uniform pores not in excess of about 6 angstroms in diameter and containing therein a minor amount of a metal, ions of said metal, or mixtures thereof, said metal being one capable of forming a Werner complex of the formula

$$[(M^n)a_xb_yc_zd_w]^m$$

wherein

M is the metal,

n is the valence state of the metal and is an integer from $+1$ to $+6$,

a, b, c, and d are coordinated groups,

x, y, z, and w are integers from zero to 8, the sum of x, y, z, and w being not in excess of 8, and

m is the electrostatic charge of the complex,

said aluminosilicate having resulted from the growth of crystals of said aluminosilicate from an aqueous medium containing a water-soluble compound of said metal.

3,373,110

PROCESS FOR THE PREPARATION OF PLATINUM METAL CONTAINING ALUMINOSILICATES

Nai Yuen Chen, Cherry Hill, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 235,135, Nov. 2, 1962. This application Apr. 14, 1966, Ser. No. 542,455
9 Claims. (Cl. 252—455)

The invention relates to a method for preparing crystalline aluminosilicates which contain a metal of the platinum series. The invention is directed to preparing crystalline aluminosilicates by incorporating a platinum type metal in the forming or precursor solutions used

for preparing crystalline aluminosilicates, followed by crystallization, washing, drying and calcining to obtain a crystalline aluminosilicate which contains a metal of the platinum series.

3,373,111

REACTION PRODUCTS OF AN ORGANIC EPOXIDE AND AN ACYLATED POLYAMINE

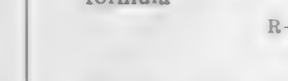
William M. Le Suer, Cleveland, and Clark O. Miller, Willoughby, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 14, 1963, Ser. No. 321,385

19 Claims. (Cl. 252—51.5)

1. Oil-soluble nitrogen-containing compositions prepared by reacting an acylated amine with at least 0.2 equivalent of an organic epoxide at a temperature within the range from about 50° C. to the decomposition temperature, said acylated amine being prepared by reacting at a temperature above about 80° C., an alkylene amine with from about 0.2 to 2 equivalents, per equivalent of alkylene amine, of an acid-producing compound selected from the class consisting of

(A) substituted succinic acids having the structural formula



wherein R is a hydrocarbon radical having at least about 50 aliphatic carbon atoms,

(B) monocarboxylic acids having the structural formula

R'COOH

wherein R' is a branched-chain, hydrocarbon radical having from about 12 to about 50 aliphatic carbon atoms in the principal chain and at least 1 aliphatic substituted aryl pendant group,

(C) mixtures of succinic acids of (A) and monocarboxylic acids selected from the class consisting of the monocarboxylic acids of (B) and aliphatic monocarboxylic acids having from about 12 to about 50 carbon atoms, and

(D) the esters of alcohols boiling below about 120° C. and phenol.

3,373,112

TRIS(HYDROCARBYL ALKYLENE POLYAMINES) AS LUBRICATING OIL DETERGENTS

Robert Gordon Anderson, Novato, and Yngve G. Hendrickson, El Cerrito, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed May 18, 1966, Ser. No. 550,897

10 Claims. (Cl. 252—51.5)

Tris(aliphatic hydrocarbon substituted alkylene polyamines) bonded to a central nucleus, finding use as lubricating oil detergents.

3,373,113

PROCESS FOR ETCHING COPPER PRINTED CIRCUITS

Karl Achenbach, Frankfurt am Main, Germany, assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,750

Claims priority, application Germany, Aug. 22, 1964, D 45,263

5 Claims. (Cl. 252—79.2)

Process for etching printed copper circuits in which an aqueous solution of a mineral acid such as H_2SO_4 or HNO_3 containing H_2O_2 as activator and H_3PO_4 as stabilizer for the H_2O_2 is employed as the etching liquid.

3,373,114

DRY COMPOSITIONS FOR DEOXIDIZING AND DESMUTTING ALUMINUM AND ALUMINUM ALLOYS

John J. Grunwald, New Haven, Conn., assignor to MacDermid Incorporated, Waterbury, Conn., a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 313,785, Oct. 4, 1963. This application Jan. 3, 1967. Ser. No. 606,575

4 Claims. (Cl. 252—136)

1. A dry composition for desmutting aluminum and aluminum alloys, which consists essentially of an admixture of dry salts selected from the group consisting of sodium, potassium, and ammonium persulfate, and a soluble acid salt of an acid selected from the group consisting of the sodium, potassium and ammonium acid salts of sulfuric acid, said acid salt of sulfuric acid and said persulfate salt being present, on a mol equivalent basis, in ratios of from 1:1 to 10:1.

3,373,115

CLEANING SOLUTION FOR PRINTING PLATES

Hartmut Steppan, Wiesbaden-Dotzheim, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,943

Claims priority, application Germany, Oct. 14, 1963, K 50,998

2 Claims. (Cl. 252—153)

1. A process for removing undesired tone from the non-image areas of a negative-working planographic printing plate which comprises treating the plate with a solution consisting essentially of effective amounts of an organic solvent capable of dissolving lacquers and greasy ink, and a compound selected from the group consisting of hydrochloric acid, hydrobromic acid, and salts of such acids with a base selected from the group consisting of ammonia, hydroxylamine, hydrazine, and aromatic amines and carboxylic acid amides having a dissociation constant less than 10^{-3} at 25° C., the compound being present in the solution in a quantity of 0.01 to 10 equivalents per liter of total solution.

3,373,116

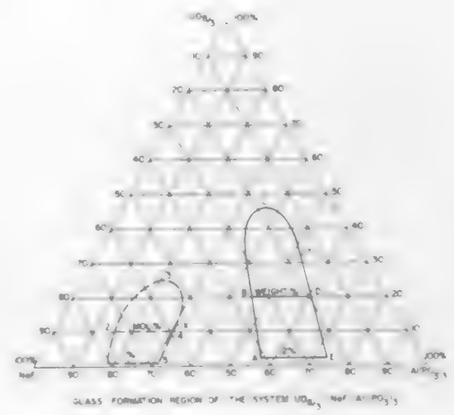
RADIOACTIVE FLUOPHOSPHATE GLASS COMPOSITION

Kuan-Han Sun, Pittsburgh, Pa., Ching-Tang Chen-Tsai, Hsin-Chu, Taiwan, China, and Yueh Shan, Bloomington, Ind., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 15, 1965, Ser. No. 439,536

19 Claims. (Cl. 252—301.1)

1. A stable fluophosphate glass melting above about 800° C. consisting essentially of by weight from 34 to 75% of at least one phosphate of a metal of the group consisting of aluminum and beryllium; 15 to 43% of at least one fluoride or oxide selected from the group consisting of a univalent metal fluoride, a bivalent metal oxide, and boron oxide; and 2 to 46% of at least one compound selected from the group consisting of uranium oxide, uranium fluoride, plutonium oxide, plutonium fluoride, thorium oxide and thorium fluoride, with the proviso



that there be present a fluoride selected from either of the two last groups.

3,373,117

LUBRICANTS CONTAINING CHLOROANILINE-PHOSPHATE SALTS

Earl Eugene Sommers, Graylyn Crest, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing Filed Dec. 17, 1965, Ser. No. 514,711

3 Claims. (Cl. 252—32.5)

Salts of aromatic chloroamines and C_8–C_{10} alkyl acid phosphates as extreme pressure additives for conventional lubricating oils and "break-in" lubricating oils.

3,373,118

SHIELDING COMPOSITION OF ANHYDROUS NAPHTHENIC AND 2-ETHYL-HEXANOIC ACID SALTS OF CADMIUM, GADOLINIUM, AND SAMARIUM IN PARAFFIN AND METHOD OF SHIELDING

Anthony R. Ronzio, Littleton, Colo., assignor to Morco Oil Corporation, Denver, Colo., a corporation of Nevada

Filed Sept. 22, 1965, Ser. No. 493,304

4 Claims. (Cl. 252—478)

1. A composition for shielding components from neutron irradiation which comprises a wax-soluble organic salt of an element having a high neutron capture cross section, in solid solution in wax or a mixutre of waxes, said element being selected from the group consisting of anhydrous cadmium 2-ethyl-hexanoate, anhydrous gadolinium 2-ethyl-hexanoate and anhydrous samarium 2-ethyl hexanoate.

3,373,119

TERNARY METALLIC OXIDE AGGLOMERATE AND METHOD OF PREPARATION

Casimir W. Krystyniak, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 1, 1965, Ser. No. 510,886

2 Claims. (Cl. 252—517)

1. In a powder mass consisting of discrete particles of metal oxide composition for the preparation of a high temperature fuel cell component, said fuel cell component exhibiting both ionic and electronic conductivity and comprising a first material selected from the group consisting of zirconia and thoria with said first material being stabilized with one or more oxides selected from the group consisting of calcium oxide, yttrium oxide, ytterbium oxide and a mixture of rare earth oxides, and a second material selected from the group consisting of iron oxide, cobalt oxide, nickel oxide, titanium oxide, zinc oxide, titanium oxide-iron oxide, zinc oxide-iron oxide and zinc oxide-lead oxide, the improvement comprising the discrete particles each being substantially spherically-shaped agglomerates substantially uniform in composition with respect to the requisite component metal oxides.

2. In the preparation of a powder mass consisting of discrete particles of metal oxide composition for the preparation of a high temperature fuel cell component, said fuel cell component exhibiting both ionic and electronic conductivity and comprising a first material selected from the group consisting of zirconia and thoria with said first material being stabilized with one or more oxides selected from the group consisting of calcium oxide, yttrium oxide, ytterbium oxide, and a mixture of rare earth oxides, and a second material selected from the group consisting of iron oxide, cobalt oxide, nickel oxide, titanium oxide, zinc oxide, titanium oxide-iron oxide, zinc oxide-iron oxide and zinc oxide-lead oxide, the improvement comprising the steps of

(a) preparing a slurry containing the requisite finely-divided component metal oxides in the desired proportions in a liquid comprising one or more of the group consisting of water and alcohol,

(b) spray drying said slurry, and

(c) collecting the mass of discrete particles of agglomerated metal oxides produced therefrom, said particles being substantially uniform in composition and substantially spherical in configuration.

3,373,120

SEMICONDUCTIVE CERAMIC COMPOSITIONS WITH POSITIVE TEMPERATURE, COEFFICIENT OF RESISTANCE

Tsuneharu Nitta, Osaka-fu, Hiromitsu Taki, Sakai-shi, Osaka-fu, and Yoshihiro Matsuo, Suita-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan

Filed Dec. 2, 1965, Ser. No. 511,185

3 Claims. (Cl. 252—520)

A ceramic composition for semiconductive materials with a positive temperature coefficient of electrical resistance consists of (a) 95.5 to 99.85% by weight of barium titanate composed of 46 to 51 mole percent of barium oxide and 49 to 54 mole percent of titanium oxide and (b) 0.15 to 4.5% by weight of an additive combination of aluminum oxide and silicon oxide, the molar ratio of aluminum oxide to silicon oxide in said combination ranging from 0.1 to 1.00 to 9.0 to 1.00. From 0.1 to 30 atomic percent of barium and/or of titanium can be replaced by an equivalent amount of lead oxide or strontium oxide.

3,373,121

POLYEPOXIDE FOAM

Billy E. Burgert and William G. Moore, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

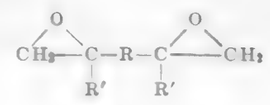
No Drawing. Filed Feb. 12, 1962, Ser. No. 172,799

10 Claims. (Cl. 260—2.5)

1. A cellular resinous solid foam consisting of the reaction product of:

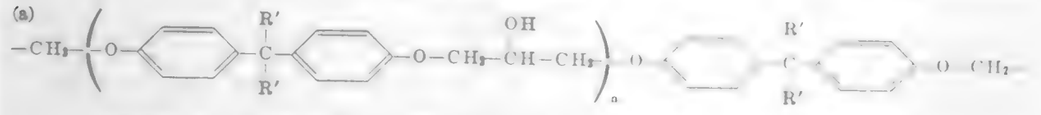
component (A) a diglycidyl compound selected from the class consisting of:

(I)



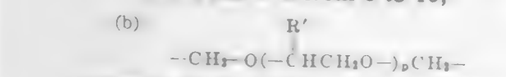
wherein R′ is a substituent selected from the class consisting of H, CH_3, and C_2H_5 and R is selected from the class having the formula:

(a)



wherein R′ has the same significance as in (1) above and *n* is from 0 to 10;

(b)



wherein R′ has the same significance as in (1) above and *p* is from 1 to 15;

(2) a mixture of the diglycidyl compounds of (a) and (b), and

component (B) a polyfunctional alcohol selected from the class consisting of (1) polyoxyalkylene glycols, having an average molecular weight of between about 1,000 and about 2,500, (2) reaction products of propylene oxide and glycerol having an average molecular weight of between about 2,000 and about 3,500, and (3) mixtures of the polyoxyalkylene glycols of (1) or the reaction product of (2) or of both (1) and (2) with glycerol in a weight proportion of between about 99 and 90 percent of the polyfunctional alcohol, selected from (1) and (2), and mixtures of both (1) and (2), and between about 1 and about 10 percent of the glycerol to provide a molar ratio of oxirane groups comprising component (A) to hydroxyl groups comprising component (B) of between 1 5 and 3;

(C) a Friedel-Crafts catalyst to effectuate cross-linking of components A and B;

(D) a blowing agent selected from the class consisting of substantially chemically inert gases and inert liquids and solids which yield a substantially chemically inert expanding gas in controlled amounts when dispersed in the reaction mixture upon the application of heat, in an amount sufficient to produce a foamed product of desired density.

3,373,122

FOAMED POLYURETHANES

Maurice Richard Porter, Sully, Glamorgan, and Basil Longden, Barry, Glamorgan, Wales, assignors to Midland Silicones Limited, London, England

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,537
Claims priority, application Great Britain, Jan. 29, 1963, 3,548/63
7 Claims. (Cl. 260—2.5)

1. A composition for use in the production of foamed polyurethanes based on reaction products of a polyhydric polyether and a compound selected from the group consisting of polyisocyanates and polyisothiocyanates consisting essentially of a mixture of (a) copolymer selected from the group consisting of polysiloxane-polyoxyalkylene copolymers and polysiloxane-polyalkyleneoxy copolymers and (b) 0.1 to 10.0% by weight based on the weight of copolymer (a) of an additive which is an anhydride of an aliphatic carboxylic acid and contains from 1–20 carbon atoms.

6. A process for the preparation of foamed polyurethanes which comprises reacting a polyhydric polyether, a compound selected from the group consisting of polyisocyanates and polyisothiocyanates, copolymer selected from the group consisting of polysiloxane-polyoxyalkylene copolymers and polysiloxane-polyalkyleneoxy copolymers and a foaming agent in the presence of a catalyst and 0.1 to 10.0% by weight based on the weight of copolymer (a) of an additive selected from the group consisting of aliphatic carboxylic acids and anhydrides thereof, and thereafter allowing the mixture to foam.

3,373,123

COMPOSITION OF MATTER AND GOLF BALL MADE THEREFROM

George H. Brice, Glen Rock, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,902
9 Claims. (Cl. 260—2.5)

The invention is a composition of matter comprising a blend of hard crystalline polytetrahydrofuran and an elastomer such as cis-polybutadiene, styrene-butadiene copolymer, or natural rubber. The invention is also a molded golf ball or golf core comprising a vulcanized blend of aforesaid components, optionally with added filler.

3,373,124

PHENOLIC RESIN ADHESIVE EXTENDED WITH PARTIALLY CARBONIZED CELLULOSIC MATERIAL

Fred Bryner, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporaton of Delaware

No Drawing. Continuation-in-part of application Ser. No. 213,901, Aug. 1, 1962. This application July 18, 1966, Ser. No. 565,744
16 Claims. (Cl. 260—17.2)

Highly extended, phenolic-resin based adhesives for wood products are prepared comprising, a material proportion up to about 1 part by weight of a finely divided, partially carbonized cellulosic material. The useful materials are obtained by heating cellulose at an elevated temperature until it undergoes a weight loss of about 10 to 35 weight percent. In addition, the adhesive composition contains a water-swellable extender, a basic catalyst for initiating the thermosetting reaction of the resin and sufficient water to adjust the total glue solids within the range from about 35 to about 65 weight percent of the total composition.

3,373,125

PROCESS OF PRODUCING ACRYLONITRILE-NEVER DRIED CUPRAMMONIUM CELLULOSE RAYON YARN GRAFT POLYMERS

Robert L. McClure, Elizabethton, Tenn., assignor to Beaunit Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,558
4 Claims. (Cl. 260—17.4)

1. The process of producing graft polymers which comprises reacting monomeric acrylonitrile dissolved in an aqueous medium at a pH not greater than 3.5 in the presence of a ceric salt with a freshly formed, never dried cuprammonium cellulose rayon yarn, said ceric salt being soluble in at least one component of said aqueous medium.

3,373,126

STARCH COMPOSITION CONTAINING HYDROPHOBIC POLYTETRAFLUOROETHYLENE PARTICLES

David Lehrman, Cheltenham, Pa., and Joseph J. Shay, Wilmington, Del., assignors to The Ironees Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,806
3 Claims. (Cl. 260—17.4)

1. A liquid laundry starch composition having superior anti-sticking pressing properties comprising an aqueous mixture of 2 to 25 weight percent of starch and from ½ to 6 percent by weight based on the starch of tetrafluoroethylene resin in the form of a hydrophobic negatively charged colloidal dispersion of particles having a diameter of between 0.05 and 0.5 micron.

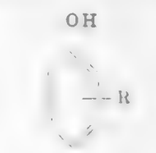
3,373,127

WAX EMULSION SYSTEMS

Claude Thomas Bean, Jr., Niagara Falls, and Donald H. Thorpe, Williamsville, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 143,543, Oct. 9, 1961. This application June 30, 1966, Ser. No. 561,688
10 Claims. (Cl. 260—28)

1. A wax emulsion polishing composition comprising a wax component and an ammonia-soluble resin in a weight ratio of between about 1:15 and 15:1, said ammonia-soluble resin comprising a thermoplastic ester derivative prepared by the process comprising the steps of (A) reacting together (1) a fusible, organic solvent soluble condensation product of a phenol and an aldehyde containing condensate units having reactive phenolic hydroxyl groups, said phenol being defined by the formula:



where R may be H, F, Cl, Br or a suitable substituent selected from (a) alkyl groups of 1 to 18 carbon atoms, (b) alicyclic groups of 5 to 18 carbon atoms, (c) aromatic or aralkyl groups of 6 to 18 carbon atoms, (d) alkyl, alicyclic, aryl and aralkyl ketones wherein the respective hydrocarbon is defined as in (a), (b), and (c), (e) alkyl, alicyclic, aryl and aralkyl carboxylic groups wherein the respective hydrocarbon is defined as in (a), (b) and (c), and (f) mixtures thereof wherein when the phenol is a mixture of phenol itself and an above-defined substituted phenol the mole ratio of substituted phenol groups to phenol groups is between zero to one and about 0.75 to one, and (2) a substance reactive with the phenolic hydroxyl groups selected from the group consisting of monooxirane ring compounds, alkylene halohydrins, alkylene carbonates, and mixtures thereof, in a proportion in the range of about one to about three moles of said substance per phenolic hyroxyl group of said condensation product, to produce a hydroxy ether derivative containing substantially no free reactive phenolic hydroxyl groups, and (B) esterifying the hydroxy ether derivative by reacting it together with between about 0.8 and about one mole per hydroxyl equivalent of a substance selected from the group consisting of polycarboxylic acids, polycarboxylic acid anhydrides, polycarboxylic acid halides and mixtures thereof to produce a thermoplastic ester derivative which has an acid number above at least about 100.

3,373,128

STABLE GELLED DISPERSIONS OF HYDROXYL TERMINATED URETHANE POLYMERS

George S. Wooster, Hamburg, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 12, 1964, Ser. No. 344,256
3 Claims. (Cl. 260—29.1)

Production of stable hydroxyl terminated urethane polymer gel dispersions having a viscosity within the range of D to H on the Gardner-Holdt scale at 20–25% non-volatiles and a hydroxyl number of within the range of 30–40, adapted for use in the produc ion of non-penetrating urethane coatings by blending (1) a low viscosity hydroxyl terminated urethane polymer gel dispersed in a solvent free of active hydrogen containing groups, said viscosity being less than D on the Gardner scale at 20–25% non-volatiles, said hydroxyl terminated urethane polymer having a hydroxyl number in the range of 30 to 40 (2) a high viscosity hydroxyl terminated urethane polymer gel dispersed in a solvent free of active hydrogen containing groups as determined by the Zerewitinoff method, said viscosity being greater than H on the Gardner scale at 20–25% non-volatiles.

3,373,129

METHOD FOR THE PRODUCTION OF FORMABLE RESIN MATERIALS OF INCREASED VISCOSITY

Shoichiro Kori, 2147 Higashiterao, Tsurumi-ku; Yasuo Sagane, 62 Kuritaya, Kanagawa-ku; and Keitaro Inoue, 2441 Kawashima-cho Hodogaya-ku, all of Yokohama, Japan

No Drawing. Continuation-in-part of application Ser. No. 420,120, Dec. 21, 1964. This application June 9, 1967, Ser. No. 644,794
Claims priority, application Japan, Dec. 25, 1963, 38/69,464; May 26, 1964, 39/29,395
7 Claims. (Cl. 260—29.6)

Unsaturated polyester resin is mixed with an aluminum alkoxide compound capable of increasing the viscosity of said resin and a free water-supplying material. The free water content of the resulting mixture is maintained during the mixture below 0.75 mol per mol of said aluminum alkoxide compound, and when heated, the mixture releases free water from said free water-supplying material to raise a total free water content of the mixture to the order between above 0.75 to about 4.0 mol per mol of said aluminum alkoxide compound, thereby the viscosity of the mixture being increased and controlled appropriately.

3,373,130

VINYL CHLORIDE POLYMER INSULATION COMPOSITIONS CONTAINING ORTHO-HYDROXYBENZALDEHYDE

George F. Hardy, Madison, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 8, 1965, Ser. No. 431,151
1 Claim. (Cl. 260—31.8)

1. A plasticized vinyl chloride polymer resin composition having improved volume resistivity comprising a vinyl chloride polymer of the class consisting of vinyl chloride homopolymers and polymers containing predominant portions of vinyl chloride with minor proportions of other ethylenically unsaturated compounds, from about 15 to about 40% of organic ester plasticizer based on weight of the composition, and from about 0.001 to 0.5% of ortho-hydroxybenzaldehyde, based on weight of the composition.

3,373,131

EPOXY RESIN COMPOSITIONS AND NOVEL INKS CONTAINING THE SAME

Richard Bolstad, Bronx, N.Y., and Michael J. Tinghitella, Wayne, and Rupert J. Schefbauer, Hasbrouck Heights, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,691
14 Claims. (Cl. 260—31.8)

1. A composition comprising (1) an epoxy resin produced by the reaction of p,p′-dihydroxy diphenyl dimethyl methane and epichlorohydrin and containing a plurality of 1,2-epoxide groups and (2) a dialkyl terephthalate wherein the alkyl group has from 1 to 3 carbons.

3,373,132
PROCESS FOR THE PRODUCTION OF ELASTOMERIC DIENE POLYMERS WITH IMPROVED PROPERTIES

Hubert Sutter, Cologne-Flittard, Karl Nutzel and Kurt Vohwinkel, Cologne-Stammheim, and Friederich Haas, Cologne-Buchheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 5, 1965, Ser. No. 477,587
Claims priority, application Germany, May 26, 1965, F 46,163
3 Claims. (Cl. 260—33.6)

Vulcanizable oil-extended diene polymers are produced by treating diene polymers with sulfur chlorides and extending the treated polymers with extender oils.

3,373,133
ANTICORROSIVE COMPOSITIONS

Georg Stern and Felix Munk, Haifa, and Simha Harel, Motzkin, Israel, assignors to Chemicals and Phosphate, Ltd., Haifa Bay, Israel, a company of Israel

No Drawing. Filed July 31, 1964, Ser. No. 386,739
Claims priority, application Israel, Aug. 6, 1963, 19,742
3 Claims. (Cl. 260—37)

1. Protective paint compositions comprising 10–55% by weight of a potassium-chromium-fluoride pigment of the formula

$$(KF)_a(HF)_bCrF_3[Cr(OH)_3]_c(H_2O)_d$$

wherein a is a number of 1.5 to 3, b is a number from 0 to 1, c is a number of 0 to 1, d is a number from 0 to 3, 14–35% by weight of binder solids selected from the group consisting of alkyd resins, phenolic resin varnishes, epoxy resins, chlorinated rubber, and polyvinyl copolymers the balance comprising conventional filters, other pigments, solvents and dryers.

3,373,134
COMPOSITIONS OF CALCIUM CARBONATE, PROCESS FOR THE PRODUCTION AND USES OF THE SAME

Eizo Yasui, Shichiro Shoda, Hiroshi Suzuki, and Hiroshi Yamada, Nagoya-shi, Japan, assignors to Toa Gosei Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Aug. 13, 1964, Ser. No. 389,453
Claims priority, application Japan, Oct. 18, 1963, 38/54,917; May 7, 1964, 39/25,527
6 Claims. (Cl. 260—41.5)

Calcium carbonate crystals of the vaterite and aragonite type containing silicic acid for use as a reinforcing filler in a vulcanization composition, and a process for the preparation thereof.

3,373,135
SHAPED ARTICLES OF SELF-EXTINGUISHING EPOXY RESINS

Herbert Jenkner, Cologne-Deutz, and Hans Eberhard Praetzel, Bensberg-Frankenforst, Germany, assignors to Chemische Fabrik Kalk G.m.b.H., Cologne-Kalk, Germany

No Drawing. Filed Dec. 1, 1965, Ser. No. 510,959
Claims priority, application Germany, Dec. 1, 1964, C 34,507
3 Claims. (Cl. 260—45.7)

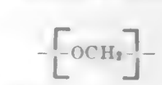
Self-extinguishing cured epoxy resin molding compositions containing about 0.1 to 20% of halogen bound directly to a carbon atom in an organic compound and an effective amount of red phosphorus to render said compositions self-extinguishing.

3,373,136
3,5-DIOXABICYCLO(5.4.0) UNDECANE AND COPOLYMERS THEREOF

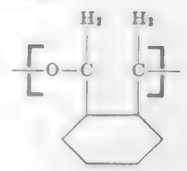
Thomas H. Wicker, Jr., Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 11, 1964, Ser. No. 343,964
11 Claims. (Cl. 260—45.9)

1. A copolymer consisting essentially of the units of the formula



and units of the formula



3,373,137
NITROGEN-CONTAINING ORGANOSILICON COMPOUNDS AND THEIR PREPARATION

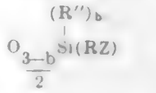
John C. Saam, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 195,970, May 18, 1962. This application Jan. 4, 1963, Ser. No. 249,314
31 Claims. (Cl. 260—46.5)

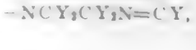
1. A nitrogen-containing compound of the general formula

wherein R′ is a monovalent hydrocarbon radical containing no aliphatic unsaturation, R″ is a monovalent saturated hydrocarbon radical, R is a divalent saturated aliphatic hydrocarbon radical containing at least two carbon atoms, there being at least two carbon atoms between the silicon atom and the carbon atom which is bonded to nitrogen, X is a halogen atom selected from the group consisting of chlorine, bromine and iodine atoms and b is an integer of less than 4.

9. A nitrogen-containing siloxane copolymer consisting essentially of (I) at least one unit of the formula

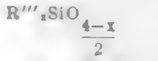


wherein R″ is a monovalent saturated hydrocarbon radical, R is a divalent saturated aliphatic hydrocarbon radical containing at least 2 carbon atoms, there being at least two carbon atoms between the Z radical and the silicon atom, Z is selected from the group consisting of



and

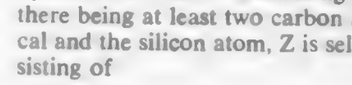
radicals, wherein Y is selected from the group consisting of hydrogen atoms and monovalent saturated hydrocarbon radicals and b has an average value of less than 3, and (II) units of the formula



wherein R‴ is selected from the group consisting of monovalent hydrocarbon and monovalent halogenated hydrocarbon radicals and x has an average value of from 1 to 3 inclusive.

11. A nitrogen-containing compound of the general formula

wherein R′ is a monovalent hydrocarbon radical containing no aliphatic unsaturation, R″ is a monovalent saturated hydrocarbon radical, R is a divalent saturated aliphatic hydrocarbon radical containing at least two carbon atoms, there being at least two carbon atoms between the Z radical and the silicon atom, Z is selected from the group consisting of



and

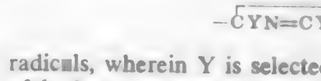
radicals, wherein Y is selected from the group consisting of hydrogen atoms and monovalent saturated hydrocarbon radicals, Q is selected from the group consisting of halogen atoms and

radicals wherein M is selected from the group consisting of alkyl and phenyl radicals and b is an integer of less than 4.

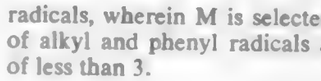
13. A nitrogen-containing siloxane of the unit formula

wherein R″ is a monovalent saturated hydrocarbon radical, R is a divalent saturated aliphatic hydrocarbon radical containing at least 2 carbon atoms, there being at least 2 carbon atoms between the Z radical and the silicon atom, Z is selected from the group consisting of

and



radicals, wherein Y is selected from the group consisting of hydrogen atoms and monovalent saturated hydrocarbon radicals, Q is selected from the group consisting of halogen atoms and



radicals, wherein M is selected from the group consisting of alkyl and phenyl radicals and b has an average value of less than 3.

3,373,138
PROCESS FOR MAKING SILOXANE POLYMERS FROM SILANES

Eric D. Brown, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 341,095, Jan. 29, 1964. This application Dec. 30, 1965, Ser. No. 517,793
4 Claims. (Cl. 260—46.5)

The process of hydrolyzing with vigorous agitation at least one organohalosilane in an aqueous solution in the absence of solvents for the siloxance products and the subsequent aging thereof.

3,373,139
POLYURETHANES PREPARED FROM 4,4′-(HEXAFLUOROISOPROPYLIDENE)DIPHENOL AND DIAMINES

Paul Winthrop Morgan, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 30, 1964, Ser. No. 422,436
7 Claims. (Cl. 260—47)

High melting polyurethanes suitable for use in the manufacture of fibers for wash-wear fabrics are prepared from selected bisphenols and diamines.

3,373,140
THERMOPLASTIC EPOXY RESIN PHOTOCONDUCTORS

Siegfried Aftergut, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Sept. 24, 1964, Ser. No. 399,085
7 Claims. (Cl. 260—47)

A process is disclosed whereby high molecular weight epoxy resins are reacted in dilute solutions with compounds having phenol and amine groups which are reactive with the epoxy groups to produce reaction products which are substantially free of cross-linking and hence are thermoplastic and soluble. These products are also photoconductive and useful in electrophotographic processes.

3,373,141
PHOTOCONDUCTIVE COPOLYMERS OF STYRENE AND ACROLEIN DERIVATIZED WITH ARYL AMINES

Siegfried Aftergut, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 8, 1964, Ser. No. 401,635
8 Claims. (Cl. 260—52)

A copolymerized styrene-acrolein resin is reacted with an aromatic amine or hydrazine to give a photoconductive material.

3,373,142
PREPARATION OF FORMALDEHYDE-DICHLOROACETALDEHYDE COPOLYMERS WITH ALKYLAMINE CATALYST

Kornel D. Kiss, University Heights, and Irving Rosen, Painesville, Ohio, assignors to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,723
3 Claims. (Cl. 260—67)

The present invention relates to the preparation of thermoplastic copolymers possessing flame-resistant properties, by reacting a major amount of formaldehyde and a minor amount of dichloroacetaldehyde under substantially anhydrous conditions and in the presence of between 0.001 to about 25 millimols per mol of formaldehyde, of either triethylamine, dipropylamine or tributylamine as the polymerization catalyst.

3,373,143
MANUFACTURE OF POLYURETHANE SOLUTIONS

Kenneth William Chilvers, Gordon Trappe, and Gerald Patrick Crowley, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 24, 1963, Ser. No. 282,875
Claims priority, application Great Britain, May 30, 1962, 20,856/62
5 Claims. (Cl. 260—75)

A process for obtaining solutions of polyurethanes in organic solvents, suitable for preparing elastomeric films, coatings, and adhesives, by interaction in an inert solvent of a hydroxyl-terminated compound and excess diisocyanate in presence of a controlled small quantity

of water, and thereafter adding isocyanate reactive compounds to remove residual free isocyanate groups.

3,373,144

PROCESS FOR THE PREPARATION OF ISOMERIZED UNSATURATED POLYESTERS

Harald Janssen, Witten-Heven, and Helmut Wulff, Witten-Annen, Germany, assignors to Chemische Werke Witten G.m.b.H., Witten (Ruhr), Germany

No Drawing. Filed May 13, 1964, Ser. No. 367,218

Claims priority, application Germany, May 18, 1963, C 29,973

14 Claims. (Cl. 260—75)

A method for isomerizing maleic acid and esterifiable derivatives thereof and preparing unsaturated polyester resins of fumaric acid comprising polycondensing maleic acid or esterifiable derivatives thereof with a polyhydric alcohol in the presence of an effective catalytic quantity of a cyclic secondary amine, to effect a cis-trans isomerization of the maleic acid or esterifiable derivative thereof to fumaric acid and to shorten the esterification time of the fumaric acid and polyhydric alcohol.

3,373,145

WASHING OF POLYMER PARTICULATES BY REGULAR PERIODIC EBB AND FLOW OF AQUEOUS SOLVENT

John W. Wagner, Petersburg, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Apr. 29, 1965, Ser. No. 451,886

9 Claims. (Cl. 260—78)

This invention reduces the volume of aqueous solvent required for continuous washing of impurities from particles of organic polymer. The aqueous solvent is supplied in countercurrent flow in contact with the particles in an extraction vessel, and an independent ebb and flow of solvent in the extraction vessel is simultaneously created by introducing an increment of solvent into the incoming solvent stream and periodically withdrawing the increment of solvent from the extraction vessel.

3,373,146

MERCAPTAN TERMINATED POLYMERS

Glen E. Meyer, Kent, Arthur H. Weinstein, Hudson, Albert J. Costanza, Akron, and Richard J. Coleman, Uniontown, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 329,231, Dec. 9, 1963. This application Nov. 25, 1966, Ser. No. 596,751

6 Claims. (Cl. 260—79.7)

1. A composition of matter capable of reacting with lead dioxide to yield a cured product which has a solubility at 75° F. in benzene of less than 30 percent by weight and having the structure of $HSM_p(S_xH_0)_kSH$, where M is a monomer unit derived from a conjugated diene having from 4 to about 8 carbon atoms and a mono-alpha-olefin having from 2 to about 20 carbon atoms with the priviso that some of the M units are always derived from the conjugated diene and the M units derived from the mono-alpha-olefin may be zero; p, q and k are integers having values of at least 1 to values less than those where the sum of p, q and k give the composition a molecular weight of about 10,000; and x is an integer having values of 0 to 8 with the priviso that at least some of the x units must be at least 1.

3,373,147

POLYMERIZATION OF ACRYLONITRILE IN DIMETHYL SULFOXIDE SOLVENT USING AZO CATALYST AND HYDROXYLAMINE SALT COLOR INHIBITOR

Zenzi Izumi and Hideji Kitagawa, Masaki-machi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Oct. 15, 1964, Ser. No. 404,057

Claims priority, application Japan, Oct. 21, 1963, 38/55,875

6 Claims. (Cl. 260—85.5)

A process for that solution polymerization of acrylonitrile using dimethyl sulphoxide as the solvent and an azobis compound as the catalyst, the improvement comprises effecting the polymerization reaction in the presence of at least one hydroxylamine salt, also included within the scope of the invention is the combination of sulfuric acid with the hydroxylamine salt; as a result of the incorporation of at least one hydroxylamine salt alone or in combination with sulfuric acid in the reaction mixture, a remarkable coloration-inhibiting effect is provided. The solution polymerization product obtained in accordance with the process can be used as a spinning solution, from which spinning solution may be manufactured acrylic fibers having an excellent degree of whiteness.

3,373,148

POLYMERIZATION OF ETHYLENE

Edwin J. Mackie and Gordon H. Lovett, Texas City, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Continuation-in-part of application Ser. No. 179,292, Mar. 16, 1962, which is a continuation-in-part of application Ser. No. 125,655, July 21, 1961. This application July 1, 1965, Ser. No. 472,394

17 Claims. (Cl. 260—87.3)

2. In a process for the manufacture of ethylene polymers in an elongated polymerization zone into which ethylene-containing monomer and free-radical initiator are introduced at elevated pressures in the range from 5,000 to 60,000 p.s.i. to establish flow through said elongated polymerization zone and elevated temperatures continuously increasing from the inlet of said elongated polymerization zone to form a polymerization mixture containing polymer and unpolymerized monomer, the improvement comprising withdrawing said polymerization mixture from said elongated polymerization zone at at least one point where the temperature is above the polymerization initiation temperature and introducing said withdrawn polymerization mixture into said elongated polymerization zone at at leasst one point upstream where said withdrawn polymerization mixture is subjected to further polymerization.

6. The process of claim 2 wherein said ethylene-containing monomer is ethylene and a comonomer selected from the group consisting of an olefin having not more than 8 carbon atoms per molecule and a vinyl ester.

3,373,149

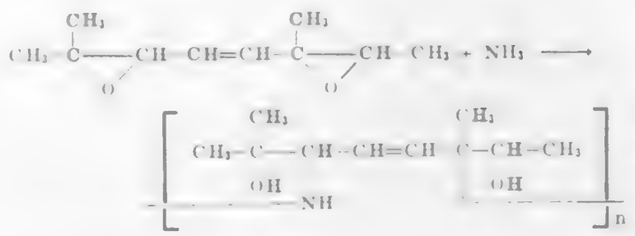
POLYMERS OF ALLO-OCIMENE DIEPOXIDE AND AMMONIA AND THEIR PRODUCTION

William C. Doyle, Jr., Fairway, Kans., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Nov. 19, 1964, Ser. No. 412,331

11 Claims. (Cl. 260—88.3)

The present invention relates to copolymers, and their production, of allo-ocimene diepoxide and ammonia containing recurring amino groups and recurring divalent, open-epoxy ring hydroxylated allo-ocimene diepoxide groups. A major portion of the recurring groups are secondary amino groups. Essentially, the reaction to form the copolymers involves reacting from 0.8 to 1.2 moles of ammonia with one mole of the diepoxide under superatmospheric pressure with the initial pressure being at least 50 pounds per square inch gauge at a temperature at least initialy above 75° C. The primary reaction involved is:



in which n has a greater value than 2. As the epoxy groups may open in either direction the hydroxyl group shown on the 2 carbon atom may be on the 3 carbon atom and the hydroxyl group shown on the 7 carbon atom may be on the 6 carbon atom. There may be some cross-linking through the oxygen or nitrogen atoms.

3,373,150

POLYMERISING VINYL CHLORIDE

Gordon Edmund Alfred Pears, St. Albans, and Andrzej Pajaczkowski, Harpenden, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,511

Claims priority, application Great Britain, Dec. 7, 1962, 46,247/62

21 Claims. (Cl. 260—92.8)

Paste grade vinyl chloride polymers are prepared by homogenised dispersion polymerisation using dialkyl peroxydicarbonate catalysts, in which the alkyl groups contain at least 5 carbon atoms, in conjunction with long chain peroxides, thereby obviating the long reaction times associated with such peroxides when used alone and the excessive build up occurring with the use of peroxydicarbonates alone.

3,373,151

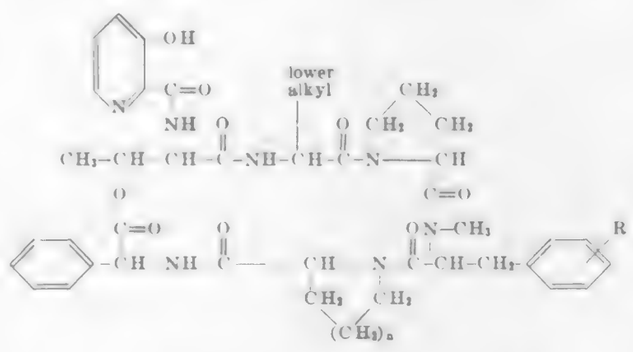
PATRICIN A AND B AND RELATED COMPOUNDS

Miklos Bodanszky, Princeton, Miguel A. Ondetti, Highland Park, and John T. Sheehan, Middlesex, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 28, 1965, Ser. No. 428,845

16 Claims. (Cl. 260—112.5)

This invention relates to new chemical compounds having the formula



and to new intermediates used in the synthesis of those compounds. R in the above formula represents hydrogen, halogen or lower alkyl and n represents 1 or 2. Preferred are compounds in this group wherein R is hydrogen and the lower alkyl group is ethyl. When $n=1$, the compound has been named patricin A; when $n=2$, the compound has been named patricin B. The compounds are useful as antimicrobial agents.

3,373,152

METHOD OF DEGASSING VISCOSE

Harry F. Haeusel, Chester, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,365

6 Claims. (Cl. 260—218)

1. A method of degassing viscose containing aqueous sodium hydroxide including the steps of adding oxygen into the viscose, mixing the viscose during the oxygen addition to disperse the oxygen throughout the viscose and maintaining the oxygen treated viscose in a quiescent condition after the mixing thereof whereby the added oxygen and entrained gases are expelled therefrom.

3,373,153

N-LOWER ALKYLIDENE AMINO-IMINODIBENZYL

Aaron Cohen, Basil Heath-Brown, and Christopher John Cattanach, Welwyn Garden City, England, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 25, 1965, Ser. No. 458,765

Claims priority, application Great Britain, Apr. 14, 1965, 22,738/64

1 Claim. (Cl. 260—239)

1. A compound of the formula

(IV)

wherein R′ is selected from the group consisting of hydrogen and a C_1–C_6 alkyl group.

3,373,154

PROCESS FOR THE PREPARATION OF N-AMINO-IMINODIBENZYL

Aaron Cohen and Basil Heath-Brown, Welwyn Garden City, and Carey Ernest Smithen, Ware, England, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 25, 1965, Ser. No. 458,770

Claims priority, application Great Britain, Apr. 14, 1965, 16,041/65

4 Claims. (Cl. 260—239)

1. A process for the preparation of N-amino-iminodibenzyl comprising the steps of:

(a) reacting iminodibenzyl with an alkali metal derivative of dimethyl sulfoxide and

(b) treating the resulting reaction product with chloramine.

3,373,155

SUBSTITUTED PENICILLINS AND CEPHALOSPORINS

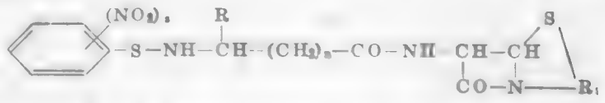
Bertil Åke Ekström and Berndt Olof Harald Sjöberg, Sodertalje, Sweden, assignors to Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden

No Drawing. Filed Jan. 11, 1965, Ser. No. 424,811

Claims priority, application Sweden, Jan. 16, 1964, 545/64

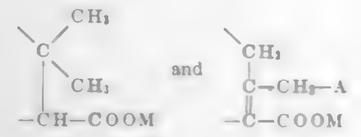
10 Claims. (Cl. 260—239.1)

1. Antimicrobially active compounds of the general formula:



wherein R is a radical selected from the group consisting of hydrogen, lower alkyl, monocarbocyclic aryl, lower alkyl-substituted monocarbocyclic aryl, sulfur-heterocyclic radicals containing from 4 to 7 ring members, mercaptoalkyl, lower alkyl-substituted mercaptoalkyl,

lower alkylamide, and nitrophenyl-sulfenyl-amino-substituted monocarbocyclic aryl radicals; R_1 is a radical selected from the group consisting of:



and

wherein A is a radical selected from the group consisting of hydrogen, 1-pyridinium, alkanolyoxy, and benzoyloxy radicals; and M is a radical selected from the group consisting of hydrogen, and pharmaceutically useful, nontoxic cations forming salts with the substituted penicillanic and cephalosporanic acids; said NO_2 radical is attached to the phenyl radical at a position selected from positions 2 and 4, z is an integer from 1 to 2; and n is an integer from 0 to 4.

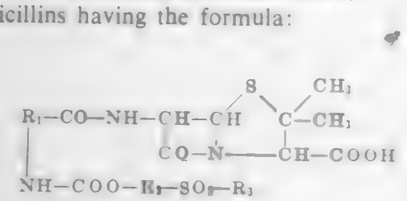
3,373,156

SUBSTITUTED 6-AMINOPENICILLANIC ACIDS AND SALTS

Peter Bamberg, Bertil Åke Ekström, and Berndt Olof Harald Sjöberg, Sodertalje, Sweden, assignors to Aktiebolaget Astra, Sodertalje, Sweden, a company of Sweden

No Drawing. Filed Aug. 29, 1966, Ser. No. 575,533
Claims priority, application Sweden, Aug. 30, 1965, 11,313/65
13 Claims. (Cl. 260—239.1)

1. Penicillins having the formula:



and non-toxic salts thereof; wherein R_1 is selected from the group consisting of unsubstituted and substituted lower alkyl radicals, with the substituted lower alkyl radicals having substituent radicals selected from the group consisting of lower alkyl, lower alkanoyloxy, monocarbocyclic aryl containing from 6 to 10 carbon atoms, carbethoxy, lower alkanoyloxyamino and lower monocarbocyclic aryloxyamino, lower alkyl sulfoxy, lower alkyl sulfonyl, lower alkyl thio and sulfur and oxygen-substituted monoheterocyclic radicals containing a maximum of 10 carbon atoms, and monocarbocyclic aryloxy radicals containing from 6 to 10 carbon atoms; R_2 is ethylene; R_3 is selected from the group consisting of unsubstituted and substituted monocarbocyclic aryl radicals containing from 6 to 10 carbon atoms, with the substituted radicals having substituent radicals selected from the group consisting of halide, lower alkyl, lower alkoxy, and nitro radicals.

3,373,157

6,6-ETHYLENE-19 NORTESTOSTERONES

Vlasios Georgian, Belmont, Mass., and Kenneth G. Holden, Stratford, N.J., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 17, 1965, Ser. No. 488,274
4 Claims. (Cl. 260—239.55)

6,6-ethylene-19-nortestosterones having anabolic-androgenic activity are prepared by ring closure of appropriate 6-hydroxyethyl testosterones.

3,373,158

TETRAHYDRO-1,3,5-THIADIAZINE-2-THIONES

Manfred Schorr, Frankfurt am Main, Walter Dürckheimer, Hattersheim am Main, and Georg Lämmler, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 19, 1965, Ser. No. 434,126
Claims priority, application Germany, Feb. 20, 1964, F 42,061
10 Claims. (Cl. 260—243)

Tetrahydro-1,3,5-thiadiazine-2-thiones substituted in the 3-position by a halogen-substituted aralkyl and in the 5-position by lower alkyl, lower alkenyl or lower hydroxy alkyl. These compounds are good fungistatics and bacteriostatics, and are especially useful for the treatment of trematodes infections.

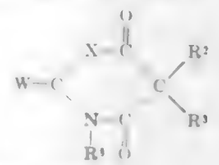
3,373,159

AZINEDIONES

James C. Martin and Kent C. Brannock, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

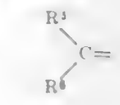
No Drawing. Filed Dec. 13, 1965, Ser. No. 513,602
10 Claims. (Cl. 260—244)

1. An azinedione of the formula:



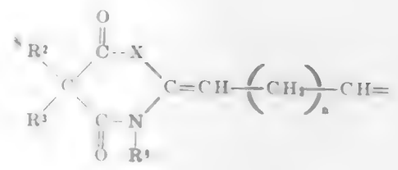
in which W has the formula

(a)



or

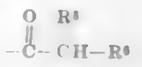
(b)



X is
- (a) oxygen
- (b) sulfur, or
- (c) imino of the formula

each of R^2 and R^3, when taken singly, is
- (a) alkyl of 1 to 10 carbons, or
- (b) mononuclear aryl of 6 to 10 carbons

each of R^4 and R^8, when taken singly, is
- (a) hydrogen
- (b) alkyl of 1 to 10 carbons
- (c) mononuclear aryl of 6 to 10 carbons, or
- (d) acyl of the formula



each of R^5 and R^6, when taken singly, is
- (a) hydrogen
- (b) alkyl of 1 to 10 carbons,
- (c) mononuclear aryl of 6 to 10 carbons, or
- (d) halogen

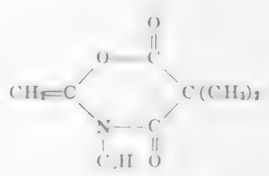
R^2 and R^3, when taken collectively with the carbon atom to which they are attached, represent joined alkylene groups completing a carbocyclic ring of 4 to 6 ring carbon atoms

R^5 and R^6, when taken collectively with the carbon atom to which they are attached, represent joined alkylene groups completing a carbocyclic ring of 4 to 6 ring carbon atoms

R^6 and R^8, when taken collectively with the carbon and nitrogen atom to which they are attached, represent joined alkylene groups completing a heterocyclic ring of 4 to 6 ring atoms, and

n is an interger from 0 to 8.

2. A compound as defined in claim 1 having the formula:



3,373,160

PROCESS FOR OXYGENATING SOLID CYCLIC ACETALS AND PRODUCTS OBTAINED THEREBY

Carol K. Ikeda, Wallingford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 111,174, May 19, 1961. This application Oct. 1, 1963, Ser. No. 312,882
The portion of the term of the patent subsequent to June 8, 1983, has been disclaimed
12 Claims. (Cl. 260—248)

1. A process for improving the air-drying properties of a normally solid cyclic acetal which contains a plurality of 1,3-cyclic acetal radicals, each bearing, in the 2-position, a radical selected from the group consisting of vinyl and isopropenyl, said cyclic acetal radicals being linked together by an interposed polyvalent radical, said process comprising contacting said solid cyclic acetal, in the molten state, with oxygen until the acetal is normally liquid.

3,373,161

PIPERAZINE DERIVATIVES

Laszlo Beregi, Boulogne-sur-Seine, Pierre Hugon, Rueil-Malmaison, and Jean-Claude Le Douarec, Suresnes, France, assignors to Societe en nom Collectif dite: Science Union et Cie, Societe Francaise de Recherche Medicale, Suresnes, France

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,562
Claims priority, application Great Britain, Sept. 10, 1964, 37,087/64
16 Claims. (Cl. 260—268)

Compounds which are 1-(1,1-dialkyl-2-phenyl-ethyl)-piperazines and benzylpiperazines having fluorine or halogenomethyl substituent on the phenyl ring which are useful as analgesics, anorexigencies, and lipid and glucide metabolism regulators, and process for the preparation thereof.

3,373,162

PREPARATION OF SUBSTITUTED PIPERAZINIUM SALTS

Clarence R. Dick, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 16, 1965, Ser. No. 508,138
6 Claims. (Cl. 260—268)

Substituted piperazinium halides are made by the reaction of an N-substituted aziridine with an alkylating agent in the presence of a source of halogen ion.

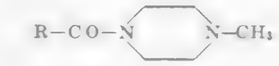
3,373,163

N-METHYL-PIPERAZIDES OF ALICYCLIC AND HETEROCYCLIC CARBOXYLIC ACIDS

Heinz Loewe, Kelkheim, Taunus, Josef Urbanietz, Schwalbach, Taunus, and Georg Lämmler, Giessen, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Jan. 18, 1966, Ser. No. 521,445
Claims priority, application Germany, Jan. 27, 1965, F 45,069
6 Claims. (Cl. 260—268)

1. A member selected from the group consisting of a carboxylic acid-N-methyl-piperazide and its physiologically tolerable salts, said piperazide having the formula



wherein R is a member selected from the group consisting of:
- (A) saturated and olefinically mono-unsaturated cycloaliphatic hydrocarbons having 5–7 carbon atoms;
- (B) such hydrocarbons having a monomethyl substituent thereon;
- (C) bicyclo [2.2.1] hept-5-ene-2-yl; and
- (D) 4-tetrahydro pyranyl.

3,373,164

DIFLUORAMINO-1-DIMETHANESULPHONYL-PIPERAZINES

Godfrey Fort, Ardrossan, Scotland, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Feb. 2, 1966, Ser. No. 524,972
Claims priority, application Great Britain, Feb. 5, 1965, 5,216/65
13 Claims. (Cl. 260—268)

1. The compound difluoramino - 1,4 - dimethanesulphonylpiperazine.

5. A process for the preparation of difluoramino-1,4-dimethanesulphonylpiperazine which comprises reacting a compound selected from the group consisting of 2,3,5,6-tetrahydroxy-1,4-dimethanesulphonylpiperazine, a partial difluoraminated derivative thereof and an acetic ester derivative thereof, with difluoramine in an inert atmosphere in the presence of an acidic condensing agent.

3,373,165

NOVEL SUBSTITUTED HYDRAZIYOHIMBANES

Anthony Edward Lanzilotti, Pearl River, and Leon Goldman, Nanuet, N.Y., assignors to American Cyanimid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 551,232, May 19, 1966. This application July 7, 1967, Ser. No. 651,672
10 Claims. (Cl. 260—287)

This disclosure describes 16-hydraziyohimbane and compounds of the class of ring-E substituted 17- and 18-hydraziyohimbanes, useful as central nervous system depressants.

3,373,166

NOVEL 17-[(METHYLTHIO)METHOXY] YOHIMBANES

Jay Donald Albright and Leon Goldman, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 556,584, June 10, 1966. This application July 7, 1967, Ser. No. 651,673
10 Claims. (Cl. 260—287)

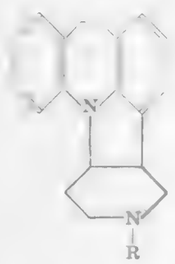
This disclosure describes compounds of the class of ring-E substituted 17-[(methylthio)methoxy]yohimbanes useful as central nervous system depressants.

3,373,167
PREPARATION OF ALPHA-BETA-UNSATURATED SULFONES
James L. Dever and Ivan C. Popoff, Ambler, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed July 28, 1964, Ser. No. 385,797
13 Claims. (Cl. 260—289)

A process for preparing vinyl sulfones by reacting in an inert organic solvent at a temperature between about −10° C. and about 30° C. a sulfonyl methylphosphinyl carbanion with an essentially stoichiometric amount of an aldehyde or ketone.

3,373,168
CERTAIN BENZAZEPINOXYRIDOINDOLE COMPOUNDS AND THEIR PREPARATION
Aaron Cohen and Basil Heath-Brown, Welwyn Garden City, England, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed May 25, 1965, Ser. No. 458,766
Claims priority, application Great Britain, June 2, 1964, 22,738/64; Apr. 14, 1965, 16,042/65
10 Claims. (Cl. 260—293)

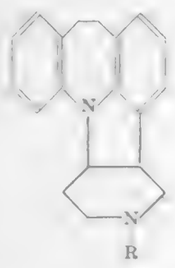
1. A compound selected from the group consisting of (a) a compound of the formula



(I)

wherein R is lower alkyl and (b) an acid addition salt of a compound of Formula I with a pharmaceutically acceptable acid.

9. A process for the preparation of a compound of the formula



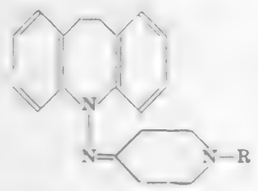
(I)

wherein R is lower alkyl comprising the steps of

(A) reacting iminodibenzyl with nitrous acid to form N-nitroso-iminodibenzyl,

(B) reducing N-nitroso-iminodibenzyl with an alkali metal-Group III metal hydride to form N-amino-iminodibenzyl,

(C) reacting a compound selected from the group consisting of (a) N-amino-iminodibenzyl and (b) an acid addition salt thereof with a 1-lower alkyl-4-oxo-piperidine to form a hydrazone of the formula



wherein R is lower alkyl

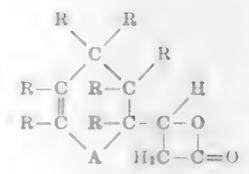
(D) reacting said hydrazone with an acidic cyclizing agent selected from the group consisting of glacial acetic acid and a mineral acid to form a cyclization product of the formula

wherein R is lower alkyl

(E) reducing the resulting cyclization product at the double bond common to the 5- and 6-membered heterocyclic rings to form a compound of Formula I.

3,373,169
HETEROCYCLIC-SUBSTITUTED β-LACTONES
Harald H. O. Cherdron, Ittenbach (Rhine), Hans H. W. Ohse, Oberdollendorf (Rhine), Richard A. Palm, Niederdollendorf (Rhine), Wilfried Draber, Ippendorf, Bonn, Juergen F. Falbe, Bonn, and Friedrich W. A. G. K. Korte, Hangelar, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 2, 1964, Ser. No. 380,028
2 Claims. (Cl. 260—343.9)

1. Chemical compound of the formula



wherein R is a member of the group consisting of hydrogen, chlorine and lower alkyl, and A is oxygen or sulfur.

3,373,170
AMINE SALTS OF BORIC ACID-POLYOL COMPLEXES
Loyd W. Jones, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
No Drawing. Filed Sept. 17, 1964, Ser. No. 397,289
7 Claims. (Cl. 260—345.8)

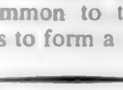
A group of compounds are proposed for inhibiting corrosion and controlling microbiological growth which can be generically described as amine salts of boric acid-polyol complexes, or as amine borates in polyol solutions.

3,373,171
1-NAPHTHALENE-PROPIONIC ACID, 4-CARBOXYL-α, 4-BIS(CARBOXYMETHYL)-1,2,3,4-TETRAHYDRO-4,4,α, 1-DIANHYDRIDE
Howard Robert Lucas, Greenwich, and Roland Ralph Di Leone, Rowayton, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 23, 1965, Ser. No. 442,207
1 Claim. (Cl. 260—346.8)

1-naphthalene-propionic acid, 4 carboxyl-α, 4-bis(carboxymethyl)-1,2,3,4-tetrahydro-4,4,α, 1-dianhydride.

3,373,172
PHARMACOLOGICALLY ACTIVE 10α-METHYL, 9β-STEROIDS OF THE PREGNANE SERIES
Engbert Harmen Reerink, Pieter Westerhof, and Hendrik Fredrik Louis Scholer, Van Houtenlaan, Weesp, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 201,824, June 12, 1962, which is a continuation-in-part of application Ser. No. 805,020, Apr. 8, 1959. This application Feb. 7, 1964, Ser. No. 343,233
Claims priority, application Netherlands, Apr. 12, 1958, 226,774
6 Claims. (Cl. 260—397.45)

1. A 10α methyl 9β, 8β, 13β, 14α hormonal steroid of the pregnane series having more than 19 carbon atoms in the molecule, a halogen free C_3 position on the steroid nucleus and wherein the substituent attached to the C_{17} carbon atom of the steroid nucleus in the β position is



wherein R′ is selected from the group consisting of monohydroxy substituted methyl and acyloxy substituted methyl.

8. 11α,17α,21-trihydroxy-retro-pregn-4-ene-3,20-dione.

3,373,173
WATER-SOLUBLE SURFACTANT COMPOSITIONS IN THE FORM OF CONDENSATION PRODUCTS OF LONG CHAIN MONOCARBOXYLIC ACIDS, DIETHANOLAMINE AND AROMATIC POLYBASIC ACIDS IN CERTAIN MOL RATIOS
John T. Foley, Verona, and Graham Barker, Fairlawn, N.J., assignors to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 24, 1964, Ser. No. 354,424
17 Claims. (Cl. 260—404)

Water-soluble surfactants which are useful as detergents and emulsifying agents and which comprise condensation products of long chain aliphatic monocarboxllic acids, diethanolamine, and mononuclear aromatic polybasic acids in certain molar ratios to each other, depending upon whether the mononuclear aromatic polybasic acid is dicarboxylic, tricarboxylic, tetracarboxylic or hexacarboxylic, illustrated by a condensation product of 1 mol of a long chain aliphatic monocarboxylic acid, 6 to 7.5 mols of diethanolamine, and 2 to 2.4 mols of phthalic anhydride.

3,373,174
A METHOD FOR IMPROVING COLOR AND THE COLOR AND ODOR STABILITY OF FATTY AMIDES
Edgar S. Hammerberg and Sydney H. Shapiro, Chicago, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Dec. 17, 1964, Ser. No. 419,222
6 Claims. (Cl. 260—404)

Improvement in color and color and odor stability of fatty amides is accomplished by admixing an alkaline-type borohydride with the fatty amide.

3,373,175
CONJUGATION OF VEGETABLE OILS VIA IRON TRICARBONYL COMPLEX
Edwin N. Frankel, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed July 9, 1965, Ser. No. 470,938
3 Claims. (Cl. 260—405.6)

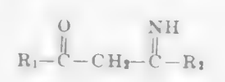
Conjugation of polyunsaturated vegetable oils or methyl esters thereof with excess iron pentacarbonyl for 2–4 hours at a critical temperature of 185° C. provides markedly improved yields of conjugated fatty iron tricarbonyl complex that is then completely decomposed with $FeCl_3$ to provide an almost fully conjugated drying oil product. At 185° C. the formation of conjugated complex is greatly increased and the reaction need not be interrupted to vent complex inhibiting formations of CO_2.

3,373,176
TERTAMETHYL CYCLOBUTANEDIOL DIESTERS OF LINSEED-DERIVED C_{18} SATURATED VICINALLY SUBSTITUTED CYCLIC MONOCARBOXYLIC ACID ISOMER MIXTURE
John P. Friedrich, Green Valley, Ill., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Sept. 22, 1965, Ser. No. 489,435
1 Claim. (Cl. 260—410)

The diesters formed by reacting a de-aromatized cyclized linolenic acid isomer mixture with two equivalents of tetramethyl cyclobutanediol exhibit low pour points coupled with high resistance to thermal oxidation. The product meets current military specifications for aviation lubricants.

3,373,177
PREPARATION OF METAL CHELATES OF β-IMINOCARBONYLS
Donald C. Young, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed May 20, 1963, Ser. No. 281,757
3 Claims. (Cl. 260—429)

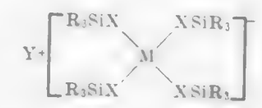
1. The preparation of a metal chelate salt from a transition metal that forms ammine salts in aqueous ammoniacal solutions and a ligand having the following structure:



wherein R_1 and R_2 are selected from the class consisting of hydrogen and alkyl groups having 1 to about 5 carbons; said method comprising forming the ammine salt of said metal in an aqueous ammoniacal solution and thereafter admixing said ligand with said solution containing from about 5 to 50 percent ammonia at a temperature between about 5° and about 50° C. to form said complex as a solid precipitate.

3,373,178
ALKALI METAL TETRAKIS (TRIORGANOSILOXY AND -SILYLAMINO) METAL III SALTS
Max Schmidt and Hubert Schmidbaur, Marburg, Germany, assignors to Wasag-Chemie Aktiengesellschaft, Essen, Germany
No Drawing. Filed Mar. 19, 1963, Ser. No. 266,172
Claims priority, application Germany, Aug. 18, 1962, W 32,807, W 32,808
10 Claims. (Cl. 260—429)

1. As a new composition of matter, an organo-silicon compound of the formula



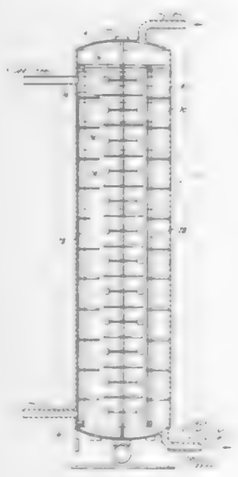
wherein M represents a metal selected from the group consisting of Al, Ga, Fe and Co, Y represents an alkali

metal, X is selected from the group consisting of O and NH, and R is selected from the group consisting of alkyl and cycloalkyl groups containing up to 6 carbon atoms, alkenyl and alkinyl hydrocarbon radicals containing up to 6 carbon atoms, mononuclear aryl radicals and monophenylated derivatives of saturated and unsaturated hydrocarbons containing up to 4 carbon atoms, and members of these groups which are between 1 and 4 times substituted with at least 1 substituent selected from the group consisting of nitro groups, amino groups and halogens.

3,373,179
METHOD FOR THE MANUFACTURE OF DIALKYL ALUMINUM HYDRIDE COMPOUNDS

Allen L. Lewis, Houston, Tex., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Sept. 14, 1962, Ser. No. 223,755
4 Claims. (Cl. 260—448)



1. In a process for preparing dialkyl aluminum hydride by the reaction of trialkyl aluminum, aluminum, and hydrogen at an elevated temperature and pressure, the improvement which comprises:

(a) introducing to the upper end of a vertical, multistage reaction zone having a plurality of vertically-tiered reaction spaces therein separated by baffle means and containing mechanical agitation means, said reaction zone being capable of handling aluminum particles as large as 0.125 inch, a slurry of finely divided metallic aluminum, having a particle size between about 3 microns and about 0.125 inch, in a liquid trialkyl aluminum compound in which the alkyl substituents of the trialkyl aluminum contain from 2 to 20 carbon atoms;

(b) introducing to the lower end of said reaction zone, from about 0.45 to about 5 moles of hydrogen gas per mole of said trialkyl aluminum compound;

(c) thoroughly mechanically agitating the slurry-gaseous mixture in each of said reaction spaces while maintaining the temperature in said multistage reaction zone in the range of from about 200° F. to about 350° F., and the pressure therein from about 200 p.s.i.g. to about 5000 p.s.i.g.; and

(d) removing the dialkyl aluminum hydride reaction product from the same end of said multistage reaction zone wherein said hydrogen gas is introduced and opposite that end to which said slurry is introduced.

3,373,180
PURIFICATION PROCESS

John Arnold Glass, Texas City, Tex., and Wilbert H. Urry, Chicago, Ill., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 22, 1966, Ser. No. 559,420
11 Claims. (Cl. 260—450)

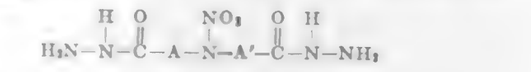
1. A process for the removal of iron carbonyl impurities from an alkanol stream containing such impurities, said alkanol having from 1 to 15 carbon atoms, which process comprises passing said stream at a temperature of from about 0° C. to about 120° C. through a resin bed, said resin bed having been prepared by replacing at least a portion of the replaceable cations in a cation exchange resin with ferric ions.

3,373,181
ALIPHATIC NITRAZA HYDRAZIDES AND PROCESSES FOR PREPARING NITRAZA DIISOCYANATES THEREFROM

Gustave B. Linden, Short Hills, N.J., and Karl Klager, Sacramento, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

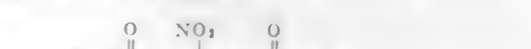
No Drawing. Filed May 21, 1962, Ser. No. 196,858
15 Claims. (Cl. 260—453)

1. As a composition of matter, the compounds have the formula:

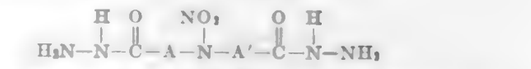


wherein A and A′ are alkylene radicals.

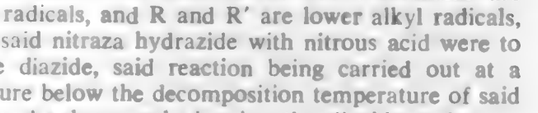
15. The method which comprises reacting hydrazine with a compound of the formula



to form a nitraza hydrazide of the formula



wherein A and A′ in each of the above formulae are alkylene radicals, and R and R′ are lower alkyl radicals, reacting said nitraza hydrazide with nitrous acid were to form the diazide, said reaction being carried out at a temperature below the decomposition temperature of said diazide, and subsequently heating the diazide under anhydrous conditions to effect rearrangement to the nitraza diisocyanate of the formula



wherein the above formula A and A′ are alkylene radicals.

3,373,182
PURIFICATION OF ISOCYANATES BY REDUCTION OF THE HYDROLYZABLE CHLORINE AND ACID CONTENT

Eugene L. Powers, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 395,952, Sept. 11, 1964. This application June 30, 1965, Ser. No. 468,619
10 Claims. (Cl. 260—453)

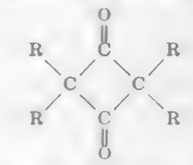
1. A method of reducing the hydrolyzable chlorine and acidity content of organic isocyanates containing hydrolyzable chlorides which comprises mixing with the organic isocyanate an amount of a compound selected from the group consisting of cadmium naphthenate, cobalt naphthenate, copper naphthenate, lead naphthenate, manganese naphthenate, zinc naphthenate, and mixtures thereof sufficient to reduce the hydrolyzable chlorides in the isocyanate and distilling the mixture to separate the isocyanate.

3,373,183
MANUFACTURE OF 2,2,4,4-TETRAALKYL-3-OXOBUTYRONITRILES

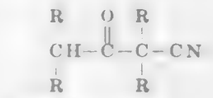
Edgar L. McDaniel and James P. Hawk, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 1, 1965, Ser. No. 505,951
10 Claims. (Cl. 260—465.1)

1. The process which comprises contacting a 2,2,4,4-tetraalkylcyclobutane-1,3-dione of the formula:



with ammonia in the vapor phase at elevated temperature and in the presence of dehydrogenation catalyst and obtaining a 2,2,4,4-tetraalkyl-3-oxobutyronitrile of the formula:



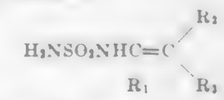
in which each R is lower alkyl.

3,373,184
SULFAMIDE DERIVATIVES

Milton Wolf, West Chester, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,083
15 Claims. (Cl. 260—465.4)

1. A compound selected from the group consisting of those having the formula:



wherein R_1 is selected from the group consisting of hydrogen and lower alkyl; and R_2 and R_3 are selected from the group consisting of cyano and carboxy(lower)alkyl.

3,373,185
3,3′,3″-NITRILOTRIS (1,2-PROPANEDIOL), HEXANITRATE AND METHOD FOR PREPARING SAME

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 17, 1967, Ser. No. 609,783
2 Claims. (Cl. 260—467)

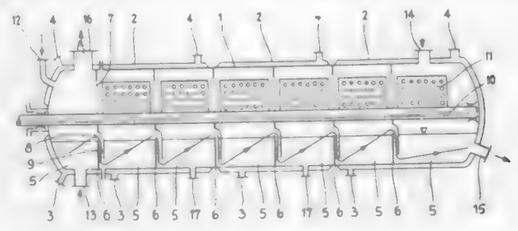
A new compound, 3,3′,3″-nitrilotris(1,2-propanediol), hexanitrate prepared by reacting triallylamine with iodine and silver nitrate, is useful as a vasodilator.

3,373,186
PROCESS FOR THE CONTINUOUS PREPARATION OF BIS-2-HYDROXYETHYL PHTHALATES

Ditmar Bachmann, Hofheim, Taunus, Karlheinz Grafen, Offenbach am Main, and Wolfgang Fischer and Armin Schubring, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed Mar. 22, 1965, Ser. No. 441,471
Claims priority, application Germany, May 2, 1964, F 42,776
2 Claims. (Cl. 260—475)

1. In a process for the continuous preparation of bis-2-hydroxyethyl esters of aromatic dicarboxylic acids selected from the group consisting of terephthalic acid and isophthalic acid and the polymers of said esters which have a low molecular weight and contain up to ten monomer units in the chain by reesterification of the dimethyl esters of the aforesaid acids with ethylene glycol in the presence of a catalyst in a heated apparatus which is subdivided into a plurality of parts in which the different stages of the process take place, into which ethylene glycol and dimethyl esters of the said acids are continuously introduced and from which the vapours that form and the bis-2-hydroxyethyl esters that form are continuously drawn off, in which process the vapours of



methanol, ethylene glycol and by-products which form are immediately drawn off and additional quantities of ethylene glycol are introduced into at least one part of the apparatus, the improvement which comprises conducting a gas that is inert towards the reaction in such a quantity in counter-current to the liquid reaction mixture that the speeds at which the vapours flow in the free spaces between the vapour chambers in which the individual reactions take place are higher than the speed at which the vapours diffuse into the inert gas.

3,373,187
METHOD OF PREPARING ASPIRIN

Robert T. Edmunds, Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Filed June 12, 1964, Ser. No. 374,812
3 Claims. (Cl. 260—480)

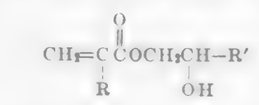
An improved method for the manufacture of aspirin utilizing a metallic salt catalyst.

3,373,188
STORAGEABLE, POLYMERIZABLE COMPOSITIONS CONTAINING 2-HYDROXYALKYL ESTERS OF ETHYLENICALLY UNSATURATED CARBOXYLIC ACIDS AND PROCESS OF PREPARING THE SAME

Glenn R. Svoboda, Port Washington, Wis., assignor to Freeman Chemical Corporation, Port Washington, Wis., a corporation of Delaware

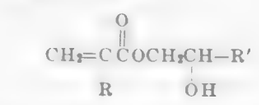
No Drawing. Filed June 22, 1964, Ser. No. 377,079
11 Claims. (Cl. 260—486)

1. A storageable, polymerizable composition comprising essentially (a) monomeric ester having the formula



wherein R is a substituent selected from the class consisting of hydrogen and methyl radical and R′ is a substituent selected from the class consisting of hydrogen, methyl and ethyl radical; and (b) a polymerization-inhibiting quantity of phenyl pyrazolidone.

8. In the method of preparing a storageable, polymerizable ester having the formula



wherein R is a substituent selected from the class consisting of hydrogen and methyl radical and R′ is a substituent selected from the class consisting of hydrogen,

methyl and ethyl radical; which comprises esterifying 1,2-alkylene oxide selected from the class consisting of ethylene oxide, propylene oxide and butylene oxide with a carboxylic acid selected from the class consisting of acrylic acid and methacrylic acid, the improvement comprising:

carrying out said esterification in the presence of a polymerization inhibiting quantity from about 0.01 to about 1.0 percent by weight, based on esterification reactants, of phenyl pyrazolidone; and

recovering substantially colorless, storageable, polymerizable ester containing the said phenyl pyrazolidone.

9. The improvement of claim 8 wherein the said reactants are combined in the presence of an ionic esterification catalyst.

11. The improvement of claim 9 wherein the said ionic esterification catalyst is selected from the class consisting of triphenyl phosphine, triphenyl stibine and mixtures thereof.

3,373,189

VAPOR PHASE PROCESS FOR PRODUCING VINYL ACETATE FROM ETHYLENE

David W. Lum, Cincinnati, Ohio, assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 9, 1965, Ser. No. 470,910
8 Claims. (Cl. 260—497)

1. The process for the preparation of vinyl acetate which comprises sequentially contacting, at temperatures within the range of about 110° to 250° C., a feed mixture consisting of ethylene, about 5 to 40% by volume of oxygen based on ethylene and 2 to 10% by volume of water based on the total volume of ethylene and oxygen in vapor phase with (a) a carbon-supported palladium group metal-oxide or salt catalyst, and (b) an alumina-supported palladium group metal oxide or salt catalyst, and recovering a gaseous reaction mixture containing said vinyl acetate.

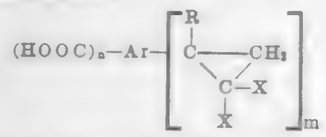
3,373,190

DIHALOCYCLOPROPYL AROMATIC CARBOXYLIC ACID

Ivan C. Popoff, Ambler, and Bernard Loev, Broomall, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 724,527, Mar. 28, 1958. This application Apr. 26, 1965, Ser. No. 451,032
4 Claims. (Cl. 260—515)

1. A 1-(2,2-dihalocyclopropyl) aromatic carboxylic acid having the formula



wherein Ar is an aromatic hydrocarbon group, *n* is 1, *m* is 1, and wherein R is hydrogen and X is chlorine.

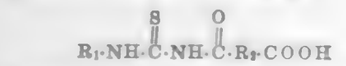
3,373,191

N-ARYLTHIOCARBAMOYLAMIC ACIDS

Asher A. Hyatt, Lexington, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 9, 1965, Ser. No. 470,919
6 Claims. (Cl. 260—516)

1. New compounds of the formula



where R_1 is an aromatic hydrocarbon radical containing up to 12 carbon atoms and R_2 is an aliphatic hydrocarbon radical of up to 5 carbon atoms.

3,373,192

PREPARATION OF ALKANE SULFONYL CHLORIDES FROM TRIALKYLALUMINUM AND SULFURYL CHLORIDE

Pat W. K. Flanagan, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Aug. 20, 1959, Ser. No. 834,958
7 Claims. (Cl. 260—543)

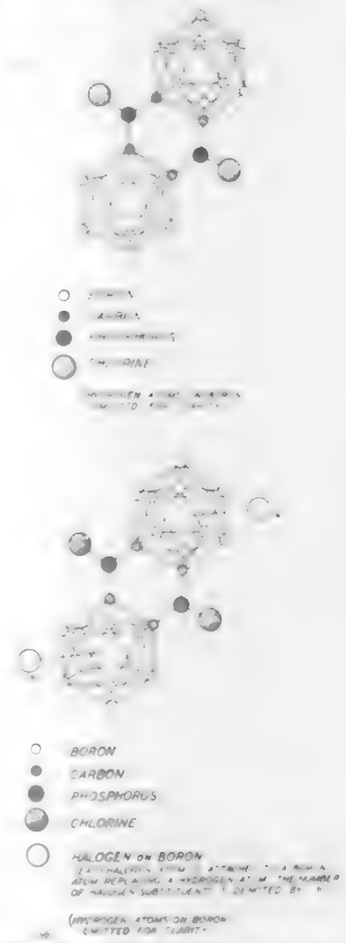
1. A process for the preparation of an alkane sulfonyl chloride which comprises reacting a trialkylaluminum compound with sulfuryl chloride wherein the alkyls in said alkyl aluminum compound contains from 1–18 carbon atoms therein, and wherein said trialkylaluminum compound is added under an atmosphere of an inert gas to sulfuryl chloride at a temperature within the range of −25 to 100° C. in the presence of an inert organic solvent, cooling the resultant reaction mixture, and then recovering the alkane sulfonyl chloride.

3,373,193

DIMERIC HALOPHOSPHA (III)-CARBORANES AND THEIR PRODUCTION

Roy P. Alexander, Killingworth, and Hansjuergen A. Schroeder, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Nov. 13, 1963, Ser. No. 323,278
15 Claims. (Cl. 260—543)



Dimeric halophospha (III)-carboranes are prepared by reacting a carborane compound of the formula:

$$B_{10}H_nX'_{10-n}[C(M)C(M)]$$

where X′ is chlorine, bromine or iodine, *n* is an integer of from 0 to 10 and M is an alkali metal such as sodium, potassium or lithium, with a phosphorus halide of the formula:

$$PX_3$$

where X is chlorine, bromine or iodine.

3,373,194

POLY(N-ACYLETHYLENIMINES) FROM 2-SUBSTITUTED-2-OXAZOLINES

Robert Fuhrmann, Morris Plains, Emery C. Lazar, Morristown, and Jan F. Van Peppen, Chester, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 26, 1965, Ser. No. 474,994
6 Claims. (Cl. 260—559)

This invention relates to novel polyethylenimines having etheric acyl group side chains attached to the nitrogen atoms of the backbone chain. These polymers are prepared by the polymerization of 2-oxazolines having ether-containing substituents on the 2-position.

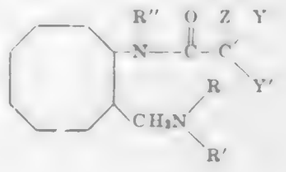
3,373,195

2-SUBSTITUTED AMINOMETHYLCYCLOOCTYL AMIDES OF ALKYL SUBSTITUTED ACETIC ACID

Edward J. Pribyl, Metuchen, and Jack Bernstein, New Brunswick, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 323,880, Nov. 15, 1963, now Patent No. 3,322,776, dated May 30, 1967, which is a continuation-in-part of abandoned application Ser. No. 72,328, Nov. 29, 1960. This application Mar. 7, 1967, Ser. No. 621,143
6 Claims. (Cl. 260—559)

This invention relates to basic amides having the general formula



the meaning of the symbols being explained below, and salts of compounds of this formula. These substances have central nervous system stimulant activity and are useful as psychotomimetic agents.

3,373,196

7- AND/OR 9-(LOWER ALKYL) AMINO-5a,6-ANHYDROTETRACYCLINES

Panayota Bitha, New York, and Joseph John Hlavka, Tuxedo, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 21, 1967, Ser. No. 624,711
10 Claims. (Cl. 260—559)

This disclosure describes compounds of the class of 7- and/or 9-nitro, amino or substituted amino-5a,6-anhydrotetracyclines and 7- and/or 9-nitro, amino or substituted amino-6-demethyl-5a,6-anhydrotetracyclines useful as intermediates in the preparation of the corresponding 7- and/or 9-substituted aminotetracyclines and 7- and/or 9-substituted amino-6-demethyltetracyclines which possess antibacterial activity.

3,373,197

SUBSTITUTED 6-EPITETRACYCLINES AND 5a-EPI-6-EPITETRACYCLINES

Michael Joseph Martell, Jr., Pearl River, and Adma Schneller Ross, Suffern, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 27, 1967, Ser. No. 634,100
10 Claims. (Cl. 260—559)

This disclosure describes compounds of the class of 6-epitetracyclines and 5a-epi-6-epitetracyclines, useful as anti-bacterial agents.

3,373,198

SUBSTITUTED 5a,11a-DEHYDRO-6-EPITETRACYCLINES

Michael Joseph Martell, Jr., Pearl River, and Adma Schneller Ross, Suffern, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corportion of Maine

No Drawing. Filed Apr. 27, 1967, Ser. No. 634,141
10 Claims. (Cl. 260—559)

This disclosure describes compounds of the class of 5a,11a-dehydro-6-epitetracyclines, useful as anti-bacterial agents.

3,373,199

WATER-MISCIBLE, STORAGE-STABLE AURAMINE BASE SOLUTION AND PROCESS OF PREPARING SAME

Werner Victor Cohen, Glen Farms, Md., and Eugene Coley Dietemann, Woodstown, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 28, 1962, Ser. No. 197,921
4 Claims. (Cl. 260—566)

1. A water-miscible, storage-stable, coloring composition of matter consisting essentially of a solution of auramine base in a solvent consisting of mixtures of acetic acid with hydroxyacetic acid containing the latter in a quantity not exceeding 30% by weight, said solution being essentially free of mineral acids, inorganic salts, salts of auramine base, and Michler's ketone, said solution being free of moisture in excess of 1.5% by weight and also free of acetic salts in excess of about 3% by weight.

3. A process for preparing a water-miscible, storage-stable, solution of auramine base, which comprises

(1) reacting auramine with a water-soluble alkali whereby to produce auramine base,

(2) filtering off the latter and drying the same at a temperature not exceeding 60° C. whereby to minimize hydrolysis of the base during said drying step, and

(3) dissolving the dried base at a temperature not exceeding 60° C. in a solvent consisting of mixtures of acetic acid with hydroxyacetic acid containing the latter in a quantity not exceeding 30% by weight, dissolving step excluding contamination of the solution with moisture in a quantity exceeding 1.5% by weight.

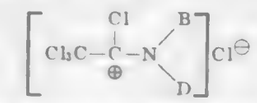
3,373,200

TRIHALOTHIONOACETAMIDES

Lowell R. Smith, St. Louis, and Angelo John Speziale, Creve Coeur, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 22, 1963, Ser. No. 296,427
1 Claim. (Cl. 260—566)

1. An iminium salt of the formula



wherein B and D respectively have from 1 to 10 carbon atoms and are alkyl radicals.

3,373,201

CONTINUOUS PROCESS FOR THE PRODUCTION OF CHOLINE CHLORIDE

Cyrille Van Eygen, Boitsfort, Belgium, assignor to UCB (Union Chimique-Chemische Bedrijven) S.A.

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,236
Claims priority, application Great Britain, Nov. 4, 1964, 44,989/64
11 Claims. (Cl. 260—567.6)

1. A continuous process for the production of an aqueous solution of choline chloride which comprises continuously introducing a stream of an aqueous solution of tri-

methylamine hydrochloride and a stream of liquid ethylene oxide in excess referred to the stoichiometric quantity, into a first reaction zone subjected to agitation, which is substantially free from gaseous phase and which is at a temperature of from at least 60° C. to at most 120° C. and at a pressure of 5 to 20 atmospheres, passing the resulting reaction mixture through a second reaction zone which is substantially free from agitation, which is substantially free from gaseous phase and which is at a temperature of from at least 60° C. to at most 120° C. and at a pressure of 5 to 20 atmospheres and finally passing the reaction mixture withdrawn from said second zone through a concentration zone wherein excess ethylene oxide is evaporated off and the reaction mixture is concentrated, thus obtaining an aqueous solution of choline chloride ready for use.

3,373,202

METHOD OF PREPARING TETRAETHYLAMMONIUM DECAHYDRODECABORATES

Joseph M. Makhlouf, Mars, and Gerald T. Heffernan, Butler, Pa., assignors to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 14, 1966, Ser. No. 579,198

3 Claims. (Cl. 260—567.6)

1. A method of preparing tetraethylammonium decahydrodecaborate comprising the steps of thermally decomposing tetraethylammonium borohydride under an inert non-oxidizing atmosphere and recovering the tetraethylammonium decahydroborate.

3,373,203

PREPARATION OF DECAHYDRODECABORATES

Joseph M. Makhlouf, Mars, and William V. Hough, Gibsonia, Pa., assignors to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 14, 1966, Ser. No. 579,220

6 Claims. (Cl. 260—567.6)

1. A method of preparing a decahydrodecaborate salt comprising thermally decomposing under an inert atmosphere an octahydrotriborate of the formula MB_3H_8, where M is potassium, cesium, tetramethylammonium, or tetraethylammonium and recovering the decahydrodecaborate salt.

3,373,204

PROCESS FOR PREPARING OXYALKYLENE AMINES

Ralph A. Hales, West Chester, Pa., and Francis A. Hughes, Wilmington, Del., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,129

7 Claims. (Cl. 260—570.7)

Process of producing secondary amines which comprises reacting in the liquid phase a polyoxyalkylene derivative of phenol, alcohol, or amine with an aminating agent at a temperature from 200° C. to 275° C. for at least two hours in the presence of a Raney metal catalyst, with water evolution as it is formed, and recovering a reaction product predominating in secondary amines.

3,373,205

STABILIZED COMPOSITION OF AROMATIC DIAMINES

Duncan J. Crowley, deceased, late of Penns Grove, N.J., by Helen T. Crowley, executrix, Penns Grove, N.J., assignor to E. I. du Pont de Nemours and Company

No Drawing. Filed May 27, 1965, Ser. No. 459,469

5 Claims. (Cl. 260—578)

1. A stabilized composition consisting essentially of an aromatic amine selected from the group consisting of m-phenylenediamine and 2,4-toluylenediamine and from about 0.001 to 0.5% by weight of said amine of a thiol ester selected from the group consisting of diphenyl dithiolisophthalate, dibenzyl dithiolisophthalate, di-n-amyl dithiolisophthalate and benzyl thiolbutyrate.

5. A process for stabilizing an aromatic amine selected from the group consisting of m-phenylenediamine and 2,4-toluylenediamine which comprises incorporating in said amine from about 0.001 to 0.5% by weight of said amine of a thiol ester selected from the group consisting of diphenyl dithiolisophthalate, dibenzyl dithiolisophthalate, di-n-amyl dithiolisophthalate and benzyl thiolbutyrate.

3,373,206

PROCESS FOR MANUFACTURE OF ALIPHATIC ARALKYL KETONES

André Rocca, Bolbec, France, assignor to Oril S.A., Paris, France

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,778

Claims priority, application Great Britain, Sept. 25, 1964, 39,261/64

6 Claims. (Cl. 260—590)

Process for manufacture of aliphatic aralkyl-ketones by reacting an organo-magnesium compound with an allyl halide, isomerizing the product to shift the double bond, reacting the product with an organic peroxide to produce a diol-1,2, and converting the diol into a ketone of desired structure by heating in the presence of an arylsulphonic acid catalyst.

3,373,207

IONYLIDENETHYL PHOSPHONIUM SALTS AND A PROCESS FOR PREPARING THE SAME

Axel Nuerrenbach, Wilhelm Sarnecki, and Werner Reif, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 19, 1964, Ser. No. 368,685

Claims priority, application Germany, May 24, 1963, B 72,042

The portion of the term of the patent subsequent to Dec. 27, 1983, has been disclaimed

3 Claims. (Cl. 260—606.5)

Production of quaternary β-ionylidenethyl phosphonium salts by reacting a carboxylic ester of β-ionylidenethanol with a tertiary phosphine and an acid or with the hydrosalt of a tertiary phosphine in a solvent or diluent at −20° C. to 120° C.

3,373,208

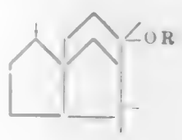
CEDROL ETHERS

Jack H. Blumenthal, Oakhurst, N.J., assignor to International Flavors & Fragrances Inc., New York, N.Y., a corporation of New York

No Drawing. Filed May 20, 1966, Ser. No. 551,535

5 Claims. (Cl. 260—611)

1. A lower aliphatic ether of cedrol useful as a perfume and having the formula



wherein R is selected from the group consisting of methyl, ethyl, propyl, butyl, allyl and methallyl.

3,373,209

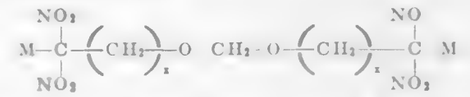
BIS(METALLO-DINITROALKYL) FORMALS AND PREPARATION THEREOF

Donald J. Glover, Bowie, Md., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Aug. 29, 1962, Ser. No. 220,944

4 Claims. (Cl. 260—615)

1. Bis(metallo-dinitroalkyl) formals having the following structural formula:



wherein M is an alkali metal selected from the group consisting of lithium, sodium and potassium and x is 0, 1, 2 or 3.

3. The method of preparing bis(metallo-dinitroalkyl) formals which comprises reacting a bis(trinitroalkyl) formal with hydrogen peroxide in the presence of a mutual solvent, adding an alkali metal hydroxide to the resultant solution and recovering a bis(metallo-dinitroalkyl) formal.

3,373,210

PROCESS FOR THE PRODUCTION OF ALKYLPHENOLS

Fumihiko Nishio and Reichi Oi, Ashigara-Kamigun, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,275

Claims priority, application Japan, Nov. 4, 1964, 39/62,399

7 Claims. (Cl. 260—624)

1. A process for the production of an alkylphenol which comprises reacting a phenol with diisobutylene in the presence of methanol using sulfuric acid as a catalyst, the volume of the methanol being from ½ to 2 times the volume of sulfuric acid in the system.

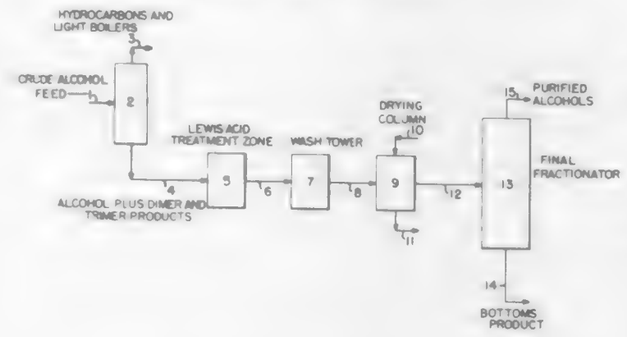
3,373,211

PURIFICATION OF ALCOHOLS BY TREATMENT WITH ANHYDROUS LEWIS ACIDS

Rhea N. Watts, deceased, late of St. Francisville, La., by Beulah Smith Watts, legal representative and sole heir, St. Francisville, La., David Edward Gensheimer, Calvert City, Ky., and Joseph Kern Mertzweiller, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Continuation of application Ser. No. 268,167, Dec. 28, 1962. This application Oct. 31, 1966, Ser. No. 591,019

8 Claims. (Cl. 260—643)



1. A process for purifying C_6 to C_{16} alcohols selected from the group consisting of oxo alcohols and alcohols prepared by the oxidation and subsequent hydrolysis of aluminum alkyls and containing between about 0.01 and about 1.0 wt. percent of carbonyl compound impurities in mixture therewith which consists essentially of contacting said alcohols with from 0.5 to 50 grams per liter of a substantially anhydrous material selected from the group consisting of aluminum chloride, boron trifluoride and zinc chloride at temperatures from about room temperature to below the boiling point of the alcohol for a sufficient time to convert said carbonyl compounds to higher boiling compounds, neutralizing the treated alcohol with caustic, washing the neutralized mixture with water and then distilling the treated mixture to recover the purified alcohols overhead substantially free of carbonyl compounds.

3,373,212

CERTAIN 2,3-DINITRO-5,8-ALKANO-5,6,7,8-TETRAHYDRONAPHTHALENES

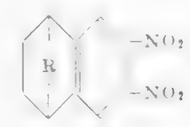
Hiroshi Tanida, Osaka-shi, and Ryonosuke Muneyuki, Itami-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka-shi, Japan

No Drawing. Original application Jan. 22, 1965, Ser. No. 427,470, now Patent No. 3,336,331, dated Aug. 15, 1967. Divided and this application Apr. 25, 1967, Ser. No. 647,269

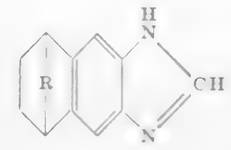
Claims priority, application Japan, Jan. 24, 1964, 39/3,392, 39/3,393

6 Claims. (Cl. 260—645)

2,3 - dinitro-5,8-alkano-5,6,7,8-tetrahydronaphthalenes of the formula



which are obtained by nitrating the corresponding 5,8-alkano - 5,6,7,8 - tetrahydronaphthalenes, are useful intermediates in the production of 5,8-alkano - 5,6,7,8-tetrahydro - 1H - naphtho[2,3-d]imidazoles of the formula



which are useful analgesic agents.

3,373,213

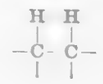
PROCESS FOR DEHYDROGENATING HYDROCARBONS

Israel S. Pasternak and Mohan Vadekar, Sarnia, Ontario, Canada, and Choo Seng Giam, Irvine, Calif., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 29, 1965, Ser. No. 475,884

18 Claims. (Cl. 260—666)

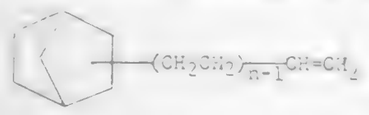
1. A process for producing an unsaturated organic compound from an organic feedstock having 2 to 20 carbon atoms and containing at least one



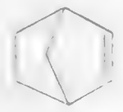
group which comprises a vapor phase reaction of said feedstock at a temperature in the range of 800° to 1400° F. with at least 0.25 mole of oxygen per mole of feed, at least 0.5 mole of H_2S per mole of oxygen and at least 0.001 mole of at least one halogen material per mole of said feed said halogen being selected from the group consisting of free halogens and hydrogen halides.

3,373,214
HIGH MOLECULAR WEIGHT COMPOUNDS CONTAINING AN ALIPHATIC-SUBSTITUTED BICYCLOHEPTANE STRUCTURE
Erich Marcus, Charleston, Donald L. MacPeek, South Charleston, and Samuel W. Tinsley, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Jan. 17, 1966, Ser. No. 520,870
16 Claims. (Cl. 260—666)

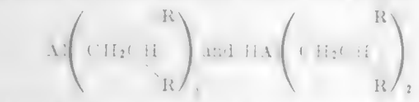
1. The process for the production of high molecular weight alkenylbicycloheptyl compounds of the formula:



wherein *n* is an integer of from 1 to 16, which process comprises the steps of (a) bringing a bicycloheptene compound of the formula:

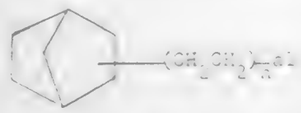


into reactive admixture with an isoalkylaluminum compound of the formula selected from the group:



wherein each R, independently, designates an alkyl radical of from 1 to 4 carbon atoms, at a temperature of from about 70° C. to about 200° C., for a period of time sufficient to produce a bicycloheptylaluminum compound containing bicycloheptylaluminum units of the formula:

(b) bringing said bicycloheptylaluminum compound into reactive admixture with at least one mole of ethylene per bicycloheptylaluminum unit thereof, in the absence of a catalyst, at a temperature of from about 70° C. to about 200° C., for a period of time sufficient to produce an ethylenically grown bicycloheptylalkylaluminum compound containing bicycloheptylalkylaluminum units of the formula:



wherein *n* is as defined above, and (c) bringing said ethylenically grown bicycloheptylalkylaluminum compound into reactive admixture with at least one mole of ethylene per bicycloheptylalkylaluminum unit thereof, at a temperature of from about 25° C. to about 350° C. and in contact with an alumnium displacement catalyst when said temperature is in the range of from about 25° C. to about 200° C., for a period of time sufficient to produce said high molecular weight alkenylbicycloheptyl compound.

3,373,215
ACID CATALYZED ISOMERIZATION OF CYCLIC-MONOOLEFINS
Paul R. Stapp, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed June 27, 1966, Ser. No. 560,815
8 Claims. (Cl. 260—666)

1. A process for isomerizing a cyclic-monoolefin containing from 6 to 15 carbon atoms in the ring to a mixture of cyclic-monoolefins having at least one less carbon atom in the ring which comprises contacting said cyclic-monoolefin with an acid catalyst in an inert diluent under isomerizing conditions at a temperature below 300° C.

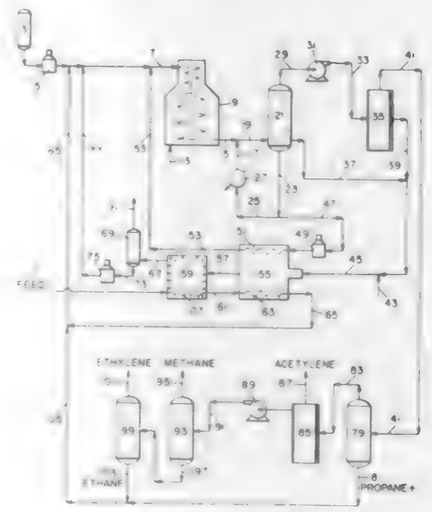
3,373,216
PREPARATION OF POLYALKENYL AROMATIC HYDROCARBONS FROM AROMATIC HYDROCARBONS AND DIOLEFINS
Erik Tornqvist, Roselle, Union, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Dec. 2, 1965, Ser. No. 511,228
10 Claims. (Cl. 260—668)

1. A process for the formation of polyalkenyl-aromatic polymers which comprises contacting an aliphatic diolefin having from 4 to 6 carbon atoms and an aromatic compound selected from the group consisting of unsubstituted mononuclear aromatic compounds, C_1 to C_4 alkyl substituted mononuclear aromatic compounds and tetrahydronaphthalene with a catalyst system comprising a chromium halide compound and a lower alkyl aluminum halide compound at polymerization temperatures for a time sufficient to recover a yield of said polymers.

3,373,217
HYDROGENOLYSIS OF SYM-DIPHENYLETHANE TO ETHYLBENZENE
Robert M. Engelbrecht and Richard N. Moore, St. Louis, and James C. Hill, Chesterfield, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Mar. 22, 1967, Ser. No. 624,988
10 Claims. (Cl. 260—668)

A process for the production of ethylbenzene by thermally hydrocracking bibenzyl (1,2-diphenylbenzene).

3,373,218
PRODUCTION OF ETHYLENE AND ACETYLENE
Seymour C. Schuman, P.O. Box 252, Rocky Hill, N.J. 08553
Filed June 7, 1965, Ser. No. 462,000
17 Claims. (Cl. 260—679)



A process for the production of ethylene and acetylene as major co-products by reaction of a light hydrocarbon with elemental sulfur in proportions corresponding to from about 0.25 to 2.5 moles of S_2 per moles of C_2 and heavier hydrocarbons in the total feed, and at a temperature from 1450° F. to 1650° F., and at other specified conditions of pressure and contact time.

3,373,219
PROCESS FOR THE SELECTIVE HYDROGENATION OF C_4-FRACTIONS
Walter Krönig, Wilhelm Mayrhofer, and Gerhard Scharfe, Leverkusen, and Kurt Halcour, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Oct. 26, 1966, Ser. No. 589,506
Claims priority, application Germany, Nov. 30, 1965, F 47,785
7 Claims. (Cl. 260—681.5)

The disclosure concerns selective hydrogenation with gaseous hydrogen of C_4-acetylenes in butadiene-containing C_4-fractions (e.g., at 15–50° C. and e.g., at 2–12 atm.) in trickle-phase through fixed palladium/lithium aluminum spindle-containing carrier catalysts prepared by heating lithium solution-impregnated highly active aluminum oxide (e.g., at 900–1300° C.) to form the spinel followed by palladium solution-impregnation thereof and reduction to palladium metal thereon.

3,373,220
ETHYLENE PRODUCTION
Harold J. Hepp, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 386,868
6 Claims. (Cl. 260—683)

Propane is converted to methane and ethylene by thermal hydrogenolysis followed by cracking, with recycle of hydrogen and heavy products of the thermal cracking to the hydrogenolysis.

3,373,221
REACTION PRODUCTS OF UNSATURATED ESTERS OF POLYEPOXIDES AND UNSATURATED CARBOXYLIC ACIDS, AND POLYISOCYANATES
Clayton A. May, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 4, 1964, Ser. No. 408,772
16 Claims. (Cl. 260—837)

Compositions are prepared from polyepoxides and unsaturated mono and dicarboxylic acids forming ester linkages. These esters are further reacted with polyisocyanates or polythioisocyanates. The ratio of polyepoxide to polycarboxylic acid ranges from 0.5 to 2.0 equivalents. Additionally from 1 to 70% of another ethylenically unsaturated monomer may be present. In an example 68.8 parts of the diglycidyl ether of bisphenol A were combined with 31.2 parts of glacial methacrylic acid and 0.43 parts of tetramethyl ammonium chloride and heated at 115° C. for 1 hr. and 15 min. to form a liquid ester. This was combined with styrenes to form a 50% styrene solution. 100 pts. of the polyester styrene soln. were combined with 6 pts. toluene diisocyanate incrementally added, and cured with a peroxide at 115° C.

3,373,222
COMPOSITIONS CONTAINING POLYAMIDES, POLYOLEFINS AND CARBOXYLATED POLYETHYLENE
Robert G. Armstrong, Chicago Heights, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 10, 1965, Ser. No. 486,559
20 Claims. (Cl. 260—857)

Homogeneous polymeric blends resistant to permeation by organic fluids may be prepared from 40–60% by weight of a polyolefin resin, 40–60% by weight of a polyamide resin, and 2–10% by weight of a carboxylated polyethylene having an acid number from 2.75 to 50.

3,373,223
COMPOSITIONS CONTAINING POLYAMIDES, POLYOLEFINS, AND ETHYLENE-ACRYLIC OR METHACRYLIC ACID COPOLYMERS
Robert G. Armstrong, Chicago Heights, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 28, 1965, Ser. No. 491,029
20 Claims. (Cl. 260—857)

Homogeneous polymeric blends resistant to permeation by organic fluids may be prepared from 25–90% of a polyolefin resin, 5–70% by weight of a polyamide resin, and 1–10% by weight of an ethylene-acrylic or methacrylic acid copolymer wherein the acid component is present in the range of 1–10 mole percent.

3,373,224
COMPOSITIONS CONTAINING POLYAMIDES, POLYOLEFINS AND ETHYLENE-ALPHA, BETA UNSATURATED ACID COPOLYMERS NEUTRALIZED WITH SODIUM IONS
Robert B. Mesrobian, Hinsdale, Paul E. Sellers, Oak Forest, and Domas Adomaitis, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 376,945, June 22, 1964. This application June 19, 1967, Ser. No. 652,990
8 Claims. (Cl. 260—857)

A composition having improved resistance to the permeation of fluids is comprised of a homogeneous mixture of a polyolefin resin, a water insoluble polyamide resin, and a metal ion-containing resin composed of a copolymer containing at least 50 mole percent ethylene based on the copolymer and an α,β-ethylenically unsaturated monocarboxylic acid, the acid monomer content of the copolymer being from 0.2 to 25 mole percent based on the copolymer, the copolymer having at least 10 percent of the carboxylic acid groups thereof neutralized by sodium ions.

3,373,225
TRANSPARENT FLAME RETARDANT UNSATURATED POLYESTER RESINS CONTAINING ANTIMONY TRIHALIDE
Edward R. Degginger, Syracuse, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,196
1 Claim. (Cl. 260—863)

Hard, transparent, flame retardant unsaturated polyester resins are prepared by reacting a halogenated unsaturated polyester resin, a vinyl monomer, an antimony tri-halide flame retardant and a catalyst.

3,373,226
POLYMERIC FILMS COMPRISING A POLYPHENYLENE OXIDE AND BLENDS THEREOF WITH POLYSTYRENE
Alastair C. Gowan, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,650
21 Claims. (Cl. 260—874)

13. A process for forming a craze resistant, ductile film from a blend of a polymeric composition consisting of a polyphenylene oxide and a polystyrene which comprises the steps of:

(a) forming a film from said polymeric composition
(b) cross-linking the polymeric components of said film
(c) contacting the film with a dilatant capable of causing said film to swell without dissolving
(d) removing the swollen film from contact with said dilatant
(e) securing said film at its edges to prevent shrinkage during drying
(f) drying said film.

3,373,227

POLYMERIZATION OF ABS RESINS IN THE PRESENCE OF LOW MOLECULAR WEIGHT, THERMALLY INITIATED POLYSTYRENE

Arnold B. Finestone, Leominster, Mass., and Gerald Goldberg, Parkersburg, W. Va., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 416,645, Dec. 7, 1964. This application Apr. 24, 1967, Ser. No. 632,923

18 Claims. (Cl. 260—880)

High impact solvent resistant moldable polymers having good flow characteristics prepared by copolymerizing at least one monovinyl aromatic compound, at least one monomer, such as acrylonitrile or methacrylonitrile, at least one rubbery polymer, and a low molecular weight polystyrene prepared by thermal initiation.

3,373,228

POLYVINYL CHLORIDE RESINS HAVING IMPROVED FUSING PROPERTIES

Emmett Jean Glazer, Stow, and Edwin Studley Smith, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 335,401, Jan. 2, 1964. This application Oct. 5, 1966, Ser. No. 584,344

4 Claims. (Cl. 260—884)

More readily processed thermoplastic resins characterized by reduced fusing time requirements during elevated temperature, high shear processing are formed by polymerization of a "soft" resin in the presence of a "hard" resin. A resin such as vinyl chloride forms the core of the particle and is surrounded by a shell of a softer resin such as a vinyl chloride vinylidene chloride polymer.

3,373,229

VINYL POLYMER COMPOSITIONS

David Joseph Philpot, Stockton-on-Tees, England, and David Victor Wise, Sarnia, Ontario, Canada, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Continuation-in-part of application Ser. No. 297,688, July 25, 1963. This application Jan. 10, 1966, Ser. No. 519,457

Claims priority, application Great Britain, Aug. 1, 1962, 29,568/62

8 Claims. (Cl. 260—899)

There is provided a rigid polyvinyl chloride composition containing high molecular weight polymers of methyl methacrylate, or copolymers of methyl methacrylate with a small amount of an alkyl acrylate, as processing aids. The methyl methacrylate polymers or copolymers have a reduced specific viscosity (measured on at 0.1% solution in chloroform at 20° C.) of at least 4.5.

3,373,230

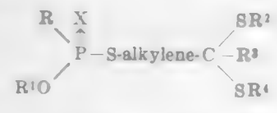
PHOSPHONATED MERCAPTALS AND MERCAPTOLES

Edward Nelson Walsh, Chicago Heights, Ill., and David J. Broadbent, San Jose, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 9, 1964, Ser. No. 381,512

5 Claims. (Cl. 260—949)

Phosphonated mercaptals and mercaptoles corresponding to the formula



in which "alkylene" means a divalent saturated aliphatic having from 1 to 3 carbon atoms; X is oxygen or sulfur; R is lower alkyl or phenyl; R^1 is lower alkyl; R^2 and R^4 are independently lower alkyl, phenyl or halo-substituted phenyl; and R^3 is lower alkyl or hydrogen. The above compounds are effective as pesticides. Representative compounds are O-ethyl-S-[2,2-bis(ethyl hio)propyl-1]ethylphosphonodithioate, O-ethyl-S-[2,2-bis(ethylthio)propyl-1]methylphosphonodithioate, O-ethyl-S-[2,2-bis(4-chlorophenyl)propyl-1]methylphosphonodithioate and O-ethyl-S-[2,2-bis(butylthio)propyl-1]ethylphosphonodithioate.

3,373,231

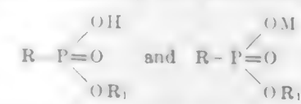
MONOESTERS OF PHOSPHONIC ACIDS

Emile Cherbuliez and Joseph Rabinowitz, Geneva, Switzerland, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 230,315, Oct. 11, 1962. This application Nov. 24, 1965, Ser. No. 509,646

8 Claims. (Cl. 260—956)

1. A compound selected from the group consisting of compounds represented by the formulas



wherein R is selected from the group consisting of phenyl, halogeno-phenyl and nitro-phenyl, R_1 is alkenyl of 2 to 18 carbon atoms, and M is selected from the group consisting of alkali metals and alkaline earth metals.

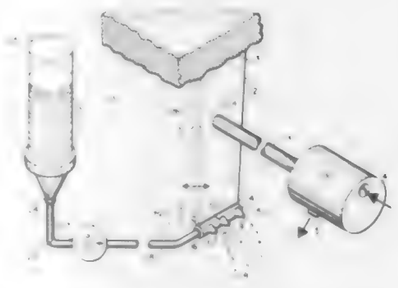
3,373,232

SONIC METHOD OF PRODUCING PARTICLES FROM A LIQUID

Boyd A. Wise and Larry M. Ogden, Penfield, N.Y., assignors to General Dynamics Corporation, a corporation of Delaware

Original application Oct. 2, 1964, Ser. No. 401,097. Divided and this application Nov. 21, 1966, Ser. No. 595,839

4 Claims. (Cl. 264—9)



The disclosure describes a method of producing uniform particles from a viscous liquid. The liquid is extruded at a uniform rate through the free end of a vibrating blade which accelerates the liquid in one direction to impart an inertia to a leading segment of the liquid and then reverses its direction so that the leading segment is pulled apart from the stream by virtue of the inertia imparted to the leading segment.

3,373,233

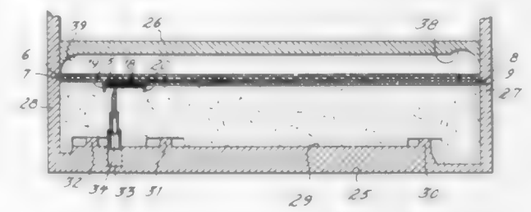
METHOD OF MOLDING COUNTERTOPS

Svend B. Rondum, Bradford, Pa., assignor to Plexowood, Inc., Bradford, Pa., a corporation of Pennsylvania

Filed Mar. 30, 1964, Ser. No. 355,669

7 Claims. (Cl. 264—25)

1. In the molding of a countertop, the method including steps of placing a mixture of wood chips and resin into a mold having a body portion and a backsplash portion, inserting a deformable connecting strip between the body portion and backsplash portion, covering said connecting strip with means for preventing adhesion, placing a plastic overlay over the body portion, the backsplash portion and the connecting strip, applying pressure and heat to the assembled plastic overlay, body portion and



backsplash portion thereby simultaneously molding a horizontal body and a backsplash on a common plane at the same time anchoring the connecting strip to said body and backsplash and at the same time molding the laminated plastic overlay that is bonded to said body and backsplash by the molding operation.

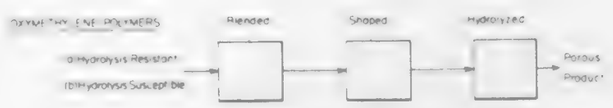
3,373,234

FORMATION OF CELLULAR OXYMETHYLENE POLYMER STRUCTURES

Arthur W. Schnizer, Corpus Christi, Tex., and Walter E. Heinz, Frankfurt am Main, Germany, assignors to Celanese Corporation, a corporation of Delaware

Filed July 28, 1964, Ser. No. 385,803

7 Claims. (Cl. 264—49)



Disclosed herein is a process for preparing strong, porous structures. In accordance with this invention, the structures are made by blending a mixture of two oxymethylene polymers which have different levels of resistance to alkaline hydrolysis, forming the mixture into a shaped article, and then at least partially removing one of the oxymethylene polymers by alkaline hydrolysis. This results in a strong, porous structure which is resistant to alkaline hydrolysis and which has cavities within the polymeric structure which results from the removal of the less resistant oxymethylene polymer.

ERRATUM

For Class 264—95 see:
Patent No. 3,372,920

3,373,235

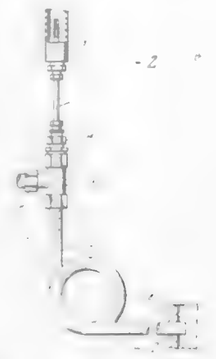
METHOD FOR PRODUCING POLYMERIC PARTICLES

Billy D. Rice, Pasadena, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

Filed Sept. 17, 1965, Ser. No. 487,986

9 Claims. (Cl. 264—143)

A method of separation of polybutene polymer from a solvent characterized by extruding the polymer at a positive pressure into an area of reduced pressure and impinging the polymer against an arcuate surface to achieve



further separation by volatilization of the solvent and particulation of the filament.

ERRATUM

For Class 264—310 see:
Patent No. 3,372,820

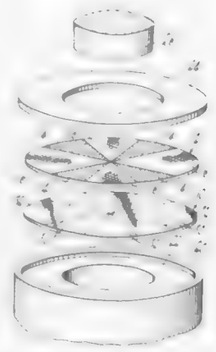
3,373,236

METHOD OF MAKING ROLLING SEAL DIAPHRAGMS

John F. Taplin, 15 Sewall St., West Newton, Mass. 02165

Filed Dec. 28, 1962, Ser. No. 248,049

8 Claims. (Cl. 264—313)



1. The method of manufacturing a rolling seal diaphragm which comprises the steps of

forming a blank from fabric defined by a multiplicity of threads in interlocking relationship to permit limited relative movement thereamong,

said fabric being compressible upon itself with rearrangement of said threads in directions tangential to imaginary circles around a center thereof,

said fabric being more readily compressible upon itself along a first of said directions in a first zone than along a second of said directions in a second zone, and

said fabric having upper and lower surfaces generally defined by said threads and spaced apart by an amount constituting the initial thickness of said fabric;

placing against at least one of said surfaces a deformable die to cooperate with said blank in forming a stack including said blank and said deformable die,

said deformable die including a third zone overlying said first zone and a fourth zone overlying said second zone,

said fourth zone being more readily compressible along said second of said directions than is said third zone along said first of said directions;

drawing said stack between male and female drawing dies to rearrange said threads and circumferentially compress said blank in directions including said first of said directions,

while simultaneously confining said stack in a thickness direction within and without said drawing dies to maintain said fabric throughout at a final thickness less than three times said initial thickness;

setting said fabric in the drawn configuration; and removing said deformable die.

3,373,237

METHOD OF FORMING DELUSTERED SHAPED ARTICLES OF SYNTHETIC RESINS

John A. Mihalik, Swarthmore, and Alfred H. Stewart, Jr., Collingdale, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 22, 1964, Ser. No. 377,123
5 Claims. (Cl. 264—316)

A method of forming delustered shaped articles of synthetic resins wherein an easily releasable sheet comprising a non-fibrous cellulosic sheet impregnated with finely-divided rubber particles is employed, is disclosed herein.

3,373,238

PROCESS FOR MOLDING MOLECULARLY ORIENTED PLASTIC CONTAINER CLOSURES

William J. Powers, Jr., Wilmington, Del., and Nathaniel C. Wyeth, Rosedale, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Original application Feb. 21, 1964, Ser. No. 346,509, now Patent No. 3,250,417, dated May 10, 1966. Divided and this application Feb. 18, 1966, Ser. No. 528,438
2 Claims. (Cl. 264—322)

A bottle cap is formed by cold extruding a cylindrical slug of thermoplastic resin into an axially symmetrical opening in a die cavity, with the cavity defining the top and a wall depending from the edge of the top and terminating in a bead, whereby the molecules of the resin become preferentially circumferentially aligned and the resin entering the bead portion of the cavity becomes folded over upon itself.

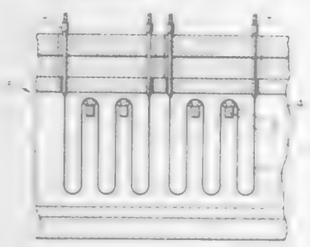
ELECTRICAL

3,373,239

HIGH-TEMPERATURE ELECTRIC FURNACE WITH MOLYBDENUM SILICIDE HEATER ELEMENTS

Ottmar Rubisch, Meitingen uber Augsburg, Germany, assignor to Siemens-Planiawerke Aktiengesellschaft fur Kohlefabrikate, Meitingen uber Augsburg, Germany, a German corporation

Filed June 16, 1965, Ser. No. 464,439
Claims priority, application Germany, June 18, 1964, S 91,595
2 Claims. (Cl. 13—25)



High-temperature electric furnace includes at least one molybdenum silicide heater element having two mounting terminals and having a glow portion forming a number of sequential meander loops between the terminals, the heater element being mounted in the furnace with the loops suspended from the terminals so as to have the bights of the loops alternately at top and bottom locations, ceramic structure supporting the glow portion between the terminals, and spacer means of molybdenum silicide interposed between the ceramic structure and the glow portion.

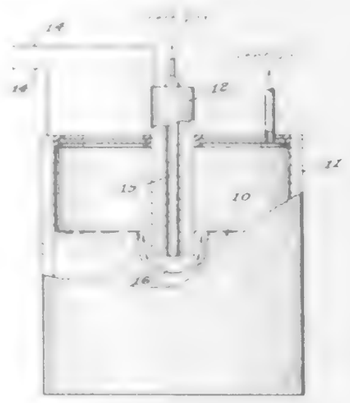
3,373,240

METHOD OF OPERATING AN ELECTRIC ARC FURNACE

Walter H. Boeckler, Gilbert S. Layne, and James O. Huml, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed June 1, 1964, Ser. No. 371,547
2 Claims. (Cl. 13—34)

An improved method of operating an electric arc furnace by immersing a hollow electrode below the surface of the melt and passing an inert gas through the hollow electrode to form an envelope of inert gas between the electrode and the melt. By varying the flow rate of the



inert gas and consequently varying the size of the gas envelope, the electrical resistance between the electrode and the bath is controlled thereby controlling the power to the electric arc furnace.

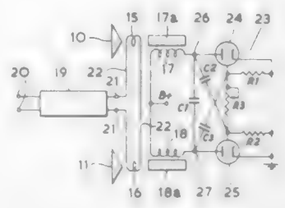
3,373,241

ELECTRONIC TREMULANT DEVICE PARTICULARLY FOR ELECTRONIC ORGANS

John Szabo, Kitchener, Ontario, Canada, assignor to Dominion Electrohome Industries Limited, Kitchener, Ontario, Canada

Continuation-in-part of application Ser. No. 211,597, July 23, 1962. This application Sept. 29, 1964, Ser. No. 400,180
10 Claims. (Cl. 84—1.25)

A tremulant effect is created electronically by alternately and periodically increasing and decreasing the intensity of sound reproduced by one loudspeaker while at the same time alternately and periodically decreasing and increasing the intensity of the sound reproduced by another loudspeaker by supplying out of phase signals to the field coils of the loudspeakers, both loudspeakers each having



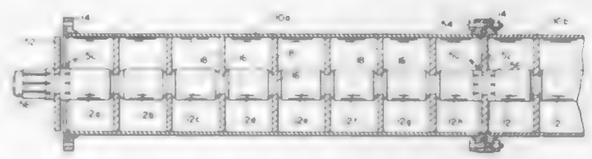
a voice coil supplied with an electrical signal to be reproduced.

3,373,242

RESILIENT INNER CONDUCTOR SUPPORT

Donald N. Sewell, Acton, Mass., assignor to Dielectric Products Engineering Company, Inc., Littleton, Mass., a corporation of Michigan

Continuation-in-part of application Ser. No. 555,147, June 3, 1966. This application Feb. 15, 1967, Ser. No. 616,298
19 Claims. (Cl. 174—21)



A resilient inner conductor support for use in coupling adjacent, axially-spaced inner conductor sections of a coaxial transmission line to allow, and provide mechanical and electrical compensation for, relative movement between the various portions of the transmission line. Each support includes rigid coupling rings secured to the ends of adjacent inner conductor sections and a relatively rigid beryllium copper connector located therebetween. No portion of the support protrudes beyond the outer circumference of the inner conductor sections. Each connector has a ring-shaped base of smaller diameter than the inner conductor sections and two, axially-spaced, flexible disc portions extending radially outwardly from the base, thereby defining an annular space, channel shaped in cross-section, for receiving a dielectric support that maintains the inner and outer conductors in coaxial relation. A flange at the outer circumference of each disc portion is secured to the adjacent coupling ring. In one disclosed embodiment, the connector is constructed of several circumferentially spaced, arcuate, channel-shaped in cross-section beryllium copper connector portions, each of which has a number of relief slots extending through its base portion and radially outwardly therefrom.

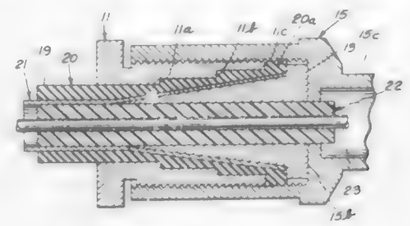
3,373,243

ELECTRICAL MULTICONDUCTOR CABLE CONNECTING ASSEMBLY

Robert M. Janowiak, Chicago, Joseph S. Conway, Freeport, and Walter J. Swistek, Chicago, Ill., and Edwin S. Oxner, Menlo Park, Calif., assignors, by mesne assignments, to The Bendix Corporation, Detroit, Mich., a corporation of Delaware

Continuation of application Ser. No. 451,675, Mar. 15, 1965, which is a division of application Ser. No. 48,534, Aug. 9, 1960, now Patent No. 3,209,287, dated Sept. 28, 1965. This application June 6, 1966, Ser. No. 587,338
6 Claims. (Cl. 174—89)

An electrical multi-conductor cable connecting assembly wherein a sleeve and collar coact to compress the jacket and shield of the cable between the collar and a tapered



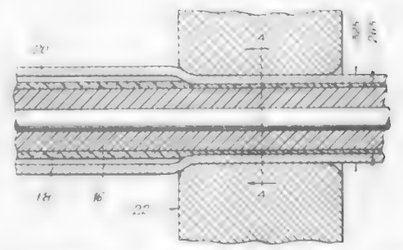
inner ferrule, with the cable inner conductor and di-electric passing centrally through the ferrule.

3,373,244

CO-AXIAL CABLE AND METHOD OF MAKING IT

John W. Holland, La Grange, Ill., assignor to Amphenol Corporation, Broadview, Ill., a corporation of Delaware

Filed Sept. 20, 1966, Ser. No. 580,743
9 Claims. (Cl. 174—102)



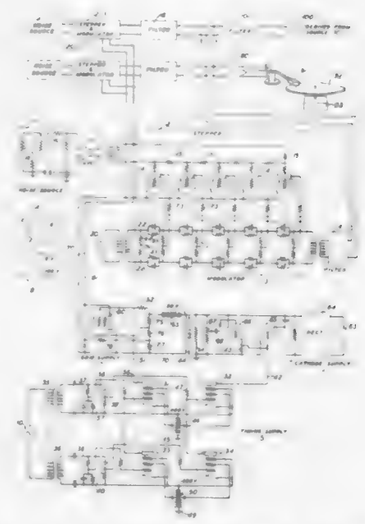
Co-axial cable having dielectric material between the outer and inner conductors, the dielectric material is of two layers, an inner solid non-compressible layer and an outer cellular compressible layer, the outer conductor being reduced in diameter on the outer layer which is thereby compressed, maintaining accuracy of dimensions of the conductors.

3,373,245

PRODUCTION OF CURRENT OF RANDOM VARIATION

Neal D. Newby, Leonia, N.J., and Henry E. Vaughan, Valley Stream, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

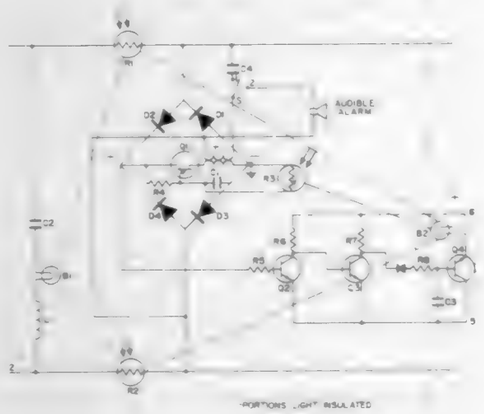
Filed Aug. 27, 1942, Ser. No. 456,356
4 Claims. (Cl. 178—22)



1. A circuit for producing currents having stepped amplitudes approximating random distribution in successive time intervals comprising a source of continuous

frequency noise waves, a group of trigger tubes having input electrodes coupled to said source with graduated increase of coupling from tube to tube, a loss pad divided into sections, means controlled from the output electrodes of said trigger tubes for effectively switching out individual sections of said loss pad in response to discharge current through respective trigger tubes, a timing circuit for blocking the inputs of said trigger tubes except for an instant at the beginning of each time interval and for restoring all trigger tubes at the end of each time interval, a source of voltage, an indicator, and a circuit for connecting said loss pad in series between said source of voltage and said indicator.

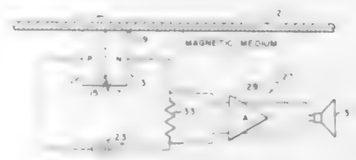
3,373,246
COUNTER-MEASURES SYSTEM FOR BLOCKING TELEPHONE LINES TO UNAUTHORIZED SIGNALS
Carlton Swain Moorefield, Fairfax County, Va. (6704 Edsall Road, Alexandria, Va. 22312)
Filed July 8, 1963, Ser. No. 293,497
5 Claims. (Cl. 179—2)



1. A protective device for a conductor of a communication instrument which uses a plurality of conductors as a signal and carrier means comprising,
light dependent elements series connected into said conductors,
means for insulating said elements for unwanted light,
a source of light within said insulating means,
means for detecting the signal used to announce an incoming call,
means connected to said means for detecting the signal to cause said light source to illuminate light dependent elements, said illumination decreasing the resistance of said light dependent elements,
means for detecting electrical energy on said conductors,
means connected to said electrical energy detector means for generating a noise signal in response to a predetermined amount of said electrical energy,
means for deactivating said noise generator under predetermined conditions in said conductors.

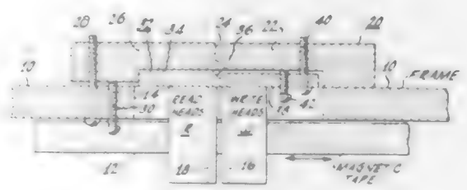
3,373,247
SEMI-CONDUCTOR JUNCTION MAGNETIC TAPE PLAYBACK HEAD
John F. Hyland, Fairfax County, Va. (914 Timber Lane, Vienna, Va. 22180)
Filed Apr. 29, 1963, Ser. No. 276,669
11 Claims. (Cl. 179—100.2)

1. A playback transducer arrangement for reproducing intelligence recorded on a magnetic medium comprising:
a semi-conductor body having at least one junction, said body being oriented relative to the magnetic medium so that said junction is substantially perpendicular and transverse to the direction of relative movement of said magnetic medium, by which movement any changes in the intelligence recorded on said medium produce magnetic flux changes affecting the flow of current through said junction;



means for reverse biasing said junction to secure operation in the linear operating range; and
output means connected in circuit with said semi-conductor body.

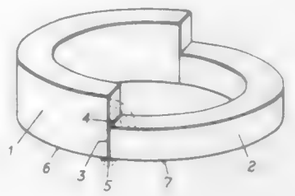
3,373,248
MAGNETIC TAPE TRANSPORT WITH AZIMUTH ADJUSTMENT
Solomon Baybick, Riverton, John B. Kelly, Haddonfield, and Anthony A. Sariti, Cherry Hill, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Apr. 1, 1964, Ser. No. 356,415
5 Claims. (Cl. 179—100.2)



A magnetic tape transport includes a read head unit and a write head unit. The units are collectively adjustable in azimuth relative to the direction of tape motion, one unit is adjustable relative to the other. The head units are fixed on respective fixed and movable portions of a one support member, which in turn has its fixed portion affixed to the movable portion of another support member having a fixed portion affixed to the tape transport frame.

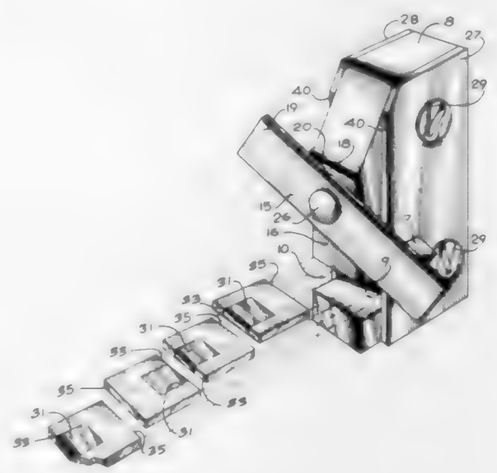
3,373,249
MAGNETIC ERASING HEAD
Gerold Schager, Vienna, Austria, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 348,945
Claims priority, application Austria, Mar. 6, 1963, A 1,751/63
5 Claims. (Cl. 179—100.2)

A magnetic core structure for an erasing head which will have a minimal stray field is built of two core parts separated by a gap and having one side of the parts bounding the gap in coplanar relationship, while one of the other sides of the parts bounding the gap



projects from the gap boundary surface with respect to the remaining side.

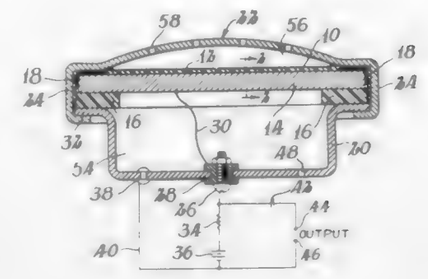
3,373,250
HAND HELD MULTI-CHANNEL MAGNETIC TAPE ERASER
Clarence H. Adams, 601 E. Armour, Kansas City, Mo. 64109
Filed Apr. 6, 1964, Ser. No. 357,669
7 Claims. (Cl. 179—100.2)



A hand held multi-channel magnetic tape eraser includes a plurality of magnetic field producing members which may be selectively stacked so as to correspond to respective channels on the tape, the members being individually rotatable for deactivation or replaceable with a non-magnetic member for selecting the channels to be erased.

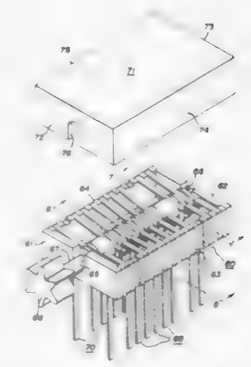
3,373,251
ELECTROSTATIC TRANSDUCER
Charles E. Seeler, Evanston, Ill., assignor to Shure Brothers Incorporated, a corporation of Illinois
Filed Feb. 23, 1965, Ser. No. 434,603
10 Claims. (Cl. 179—111)

1. The improvement of an electrostatic transducer comprising the combination of a porous backplate, said porous backplate having a textured surface formed by a plurality of closely spaced indentations and pores, a flexible film diaphragm positioned upon the textured surface of said porous backplate such that the film diaphragm is supported by only distributed points, ridges and small areas of the textured surface to form a plurality of vibratile areas on the diaphragm where the latter is spaced from the backplate, an acoustical impedance at the side of the backplate opposite the side contacting the diaphragm, said porous backplate having a plurality of air paths extending therethrough to place the air spaces beneath the vibratile areas in air communication with said acoustical impedance, a layer of electrically conductive material on the side of the diaphragm opposite the side



in contact with the backplate, and electrical conductors connected to the conductive layer on the diaphragm and to the backplate to permit electrical connections to be made to the transducer.

3,373,252
MULTIPLE POSITION SWITCH HAVING MULTIPLE SETS OF CONTACTS AND CAMS
Sanjar Ghaem-Maghami and Julius Kemeny, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Filed July 15, 1966, Ser. No. 565,529
8 Claims. (Cl. 200—6)

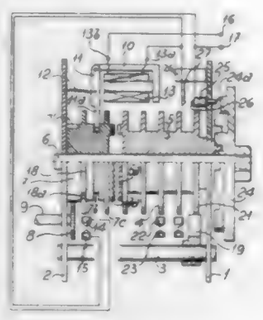


In a tuner, a first plurality of contacts engage a second plurality of contacts to form a plurality of contact pairs. Each of the pairs is individually controlled by individual cams mounted on a single shaft. The cams are of differing contours and mutually angularly displaced to effect a closing of different pairs in different positions of the shaft.

3,373,253
PROGRAM SWITCH
Jean Jullien Davin, Valence-sur-Rhone, France, assignor to Crouzet S.r.l., Milan, Italy
Continuation-in-part of application Ser. No. 443,895, Mar. 30, 1965. This application Oct. 21, 1965, Ser. No. 499,948
Claims priority, application Italy, Feb. 20, 1965, 3,570/65
9 Claims. (Cl. 200—38)

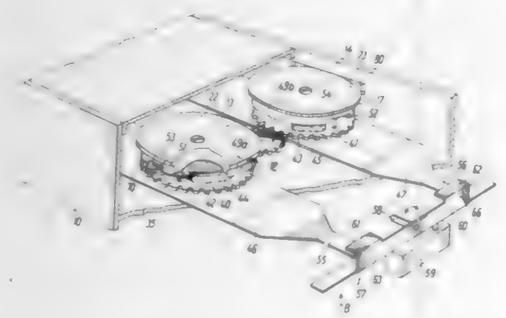
The program control cams of a program switch are driven by a rotating coaxial wheel through an overriding clutch when the clutch is engaged by its solenoid operated actuator. The energizing circuit of the actuator

has three parallel switches, the first being closed once during each revolution of the wheel, the second by the pawl of a ratchet attached to the control cams while the



ratchet turns through one tooth spacing, and the second by a cam attached to the control cams. The control cams operate switches in an external circuit such as that of a washing machine.

3,373,254
TIME SWITCHING DEVICE FOR CONTROLLING A HEATING SYSTEM
Hans Berger, Schonaich, Germany, assignor, by mesne assignments, to Zentra Albert Burkle Kommanditgesellschaft, Schonaich, Germany, a limited partnership
Filed Jan. 24, 1966, Ser. No. 522,486
Claims priority, application Austria, Jan. 22, 1965, A 537/65
7 Claims. (Cl. 200—38)

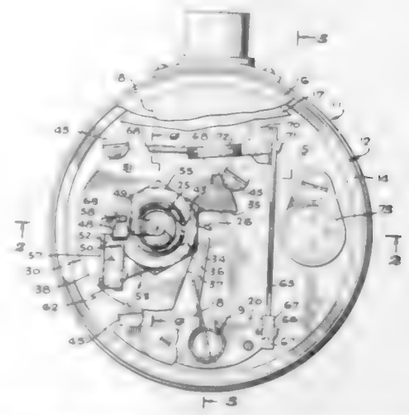


A time switching device for controlling a central heating system in accordance with a daily, weekly or monthly program including two indexing devices. Each device comprises a sprocket wheel sandwiched between a disk having a flange with a cam track on the radial surface thereof and a leaf spring and the sprocket wheel is provided with a slot for receiving a ball which is urged into contact with the cam track by the leaf spring. A recess is provided in the cam track and a sprocket wheel is rotated relative to the disk by a clockwork mechanism and when the ball moves into the recess the leaf spring is displaced to trip an electric switch.

One device activates the heating circuit and the other deactivates the heating surface with each of the disks being adjustable to regulate the time interval between the successive operation of the two devices.

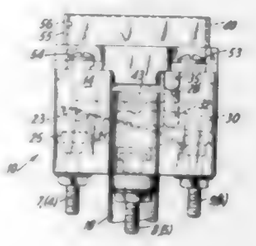
3,373,255
METHOD OF SENSING LOSS OF GASEOUS MASS AND PRESSURE-SENSITIVE SWITCH THEREFOR
Myrl J. Saarem, North Hollywood, Calif., assignor to Roylyn Incorporated, Glendale, Calif., a corporation of California
Filed June 22, 1966, Ser. No. 559,568
5 Claims. (Cl. 200—140)

The application discloses a pressure-sensitive switch utilizing a Bourdon tube to sense pressure and actuate a



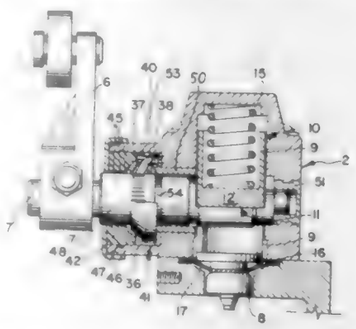
movable switch contact and a thermal responsive means for adjusting the switch gap.

3,373,256
FLUSH PUSHBUTTON SWITCH WITH SUBSTANTIALLY SIMULTANEOUS ACTUATION
Buckley R. Reed, Valley Station, Ky., assignor to K. M. White Company, Louisville, Ky., a corporation of Kentucky
Filed Jan. 25, 1966, Ser. No. 522,955
4 Claims. (Cl. 200—159)



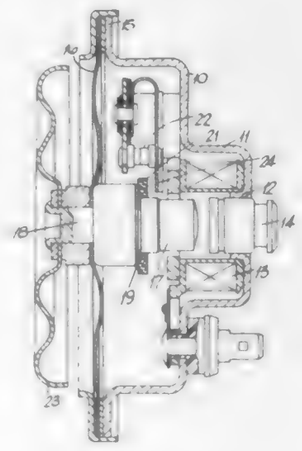
A pushbutton switch having two movable contacts disposed in a common plane perpendicular to that in which the force is normally applied and arranged to be advanced by the button, has added hereto a yoke pivotally mounted in the switch and adapted to be depressed by the pushbutton for uniformly and contemporaneously activating the contact members.

3,373,257
FLUID DAMPED ELECTRIC SWITCH ACTUATOR
Lynn H. Matthias, Fox Point Village, and Roy E. Wilson, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 2, 1966, Ser. No. 577,038
9 Claims. (Cl. 200—166)



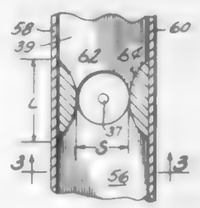
An electric switch having a switch contact actuator and a fluid chamber and fluid adjacent to the actuator so that the fluid will damp actuator motion.

3,373,258
ELECTROMAGNETIC HORNS
Maurice James Allport, Stourbridge, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Feb. 15, 1967, Ser. No. 616,297
Claims priority, application Great Britain, Mar. 1, 1966, 8,841/66
1 Claims. (Cl. 200—166)



An electromagnetic horn having means for compensating for wear of the fixed and movable contacts thereof.

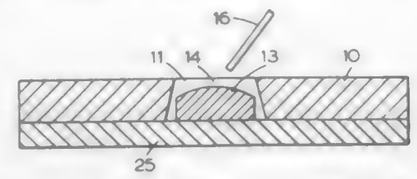
3,373,259
ELECTRONIC OVEN
Peter H. Smith, Maidenhead, England, assignor to J. Lyons & Company, Limited, London, England, a corporation of England
Filed Mar. 26, 1965, Ser. No. 444,942
7 Claims. (Cl. 219—10.55)



This disclosure relates to microwave ovens of the type having apparatus for coupling two inputs of microwave energy into the heating compartment. A power divider having a pair of outputs and a single input matches the impedance of the coupling apparatus to a single microwave source. The two outputs of the power divider are at opposite ends of a length of wave guide, the cross-sectional area of which is reduced in the vicinity of the single input by inwardly bowed surfaces on two opposite walls of the waveguide.

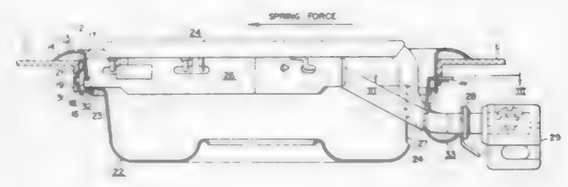
3,373,260
VAPORIZATION OF METALS AND METALLOIDS
Alfred Hilliard, London, England, assignor to Societe des Poudres Metalliques et des Alliages Speciaux Ugine-Carbone, Paris, France
Filed Apr. 26, 1965, Ser. No. 450,730
Claims priority, application Great Britain, Apr. 30, 1964, 17,963/64
13 Claims. (Cl. 219—275)

The disclosure provides an electrical heater which supports a plug for evaporating aluminium or other volatilisable material, the plug being contained in a recess in the heater which recess is smaller at the upper part than the



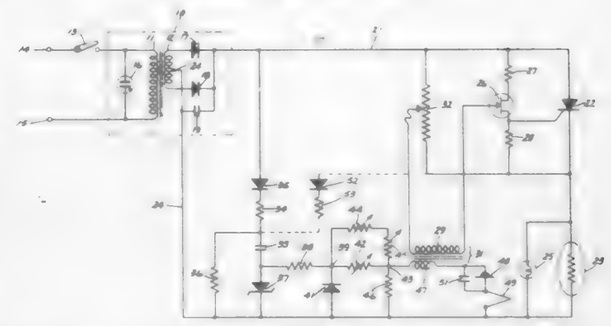
lower part so that the plug will not rise out of the recess due to electromagnetic action.

3,373,261
ELECTRIC RANGE
Edmund H. Filipak, Lexington, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 20, 1965, Ser. No. 457,451
2 Claims. (Cl. 219—463)



2. Electric heater structure comprising: a supporting surface having an opening therein, an annular wall depending from said supporting surface adjacent said opening, an electric heater supported in the opening, said depending wall having an aperture therein, resilient means attached to said heater and having a horizontally extending arm insertable in said aperture to form a hinge knuckle for pivotally mounting said heater to said depending wall, latch means in said depending wall at the side of said opening opposite said hinge knuckle engageable with a portion of said heater for retaining the latter in a horizontal position in said opening, the spacing between said aperture and said latch means being less than the distance between said portion of said heater and said resilient means whereby said resilient means is effective to bias said heater into latching engagement with said latch means.

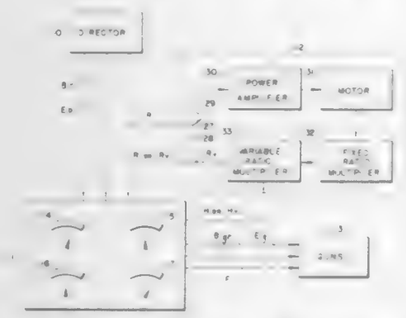
3,373,262
TEMPERATURE CONTROL CIRCUIT
Edward K. Howell, Skaneateles, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 25, 1965, Ser. No. 482,404
3 Claims. (Cl. 219—497)



1. A temperature sensing and control circuit for automatically controlling and maintaining the temperature of a device at an adjustable, preselected level, said temperature sensing and control circuit comprising: a source of potential; a heating means for supplying heat to a device whose temperature is to be controlled and maintained; an electrical switch means coupling said heating means to said source of potential for selectively applying

said potential to said heating means to cause it to apply heat to said device in response to control signals; a temperature sensing means for continuously providing a first control potential proportional to the actual temperature of said device; an adjustable source of reference potential for providing a second control potential proportional to a preselected desired temperature level at which said device is to be maintained; and an electrical comparison and control means coupled to said temperature sensing means and to said adjustable source of reference potential for receiving and comparing said first and second control potentials and producing control signals in response thereto, said electrical comparison and control means including a tunnel diode coupled to a unijunction transistor and said electrical switching means comprising a controlled rectifier triggered by a unijunction transistor which is coupled to said electrical comparison and control means for causing said source of potential to be selectively applied to said heating means in accordance with said control signals to maintain said device at said preselected desired temperature level.

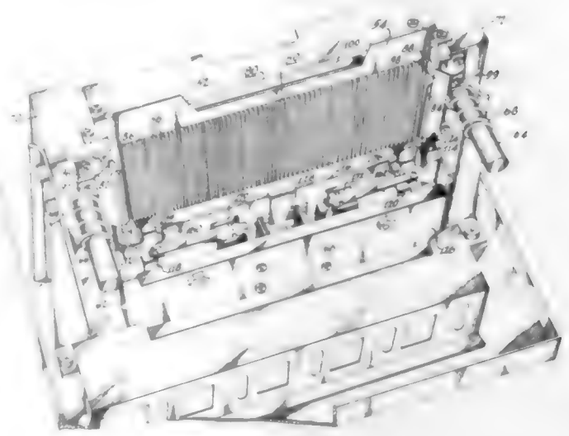
3,373,263
GUNFIRE CONTROL SYSTEM FOR SUPPLYING AIMING INFORMATION FOR GUNS HAVING DIFFERENT BALLISTIC CHARACTERISTICS
Densil M. Cooper, Washington, D.C., Charles F. Wysong, Atlanta, Ga., and Thomas W. Chappelle, U.S. Navy, assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 27, 1946, Ser. No. 650,584
2 Claims. (Cl. 235—61.5)



2. A fire control system for selectively controlling a plurality of guns having dissimilar ballistic characteristics, comprising a director for providing target bearing, elevation and range signals, a computer responsive to signals derived by the director for positioning a first gun of selected characteristics, and a signal alteration apparatus interposed in the path of range signals from the director to the computer when the system is to be used for positioning a second gun of characteristics different from the first, said apparatus comprising a means for altering director derived range signals in proportion to the ratio of the time of flight of a projectile for the second gun to the time of flight of a projectile for the first gun, said signal alteration apparatus also comprising a means for altering additionally the range signals by a variable amount which is dependent upon the product of target height multiplied by said ratio.

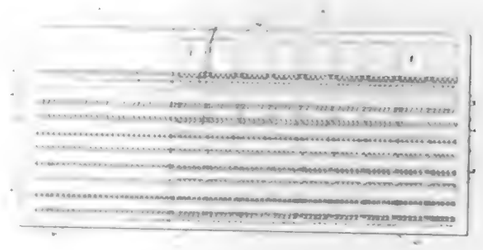
3,373,264
PUNCHED CARD READER WITH REGISTRATION INDICATING MEANS
Edward A. Damerau, Pine Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 12, 1963, Ser. No. 264,645
11 Claims. (Cl. 235—61.11)

A movable frame has opposed guide slots for receiving a record card, and the frame transports the card to a reader. Each side member of the frame has a skewed roller oriented in the same direction, and each roller projects into its associated slot to drive the card relative



to the frame as the frame is moved. A pair of switch actuators project across the card path and are actuated when the card is in correct reading position.

3,373,265
INFORMATION STORAGE AND RETRIEVAL PROCESS AND CODED RECORD CARD THEREFOR
Louis A. Smitzer, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 12, 1962, Ser. No. 244,138
6 Claims. (Cl. 235—61.12)

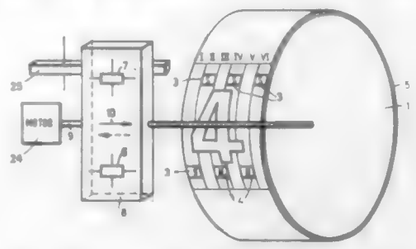


6. A coded film card comprising
a transparent film base having an image support surface extending completely across said film base to form a working face on one side of said card,
said working face being presoftenable locally,
and visible opaque medium disposed in the form of plural microimages fused in said surface to form a utilitarian image in said working face and disposed in vertical columns and horizontal rows.

3,373,266
COUNTING DEVICE WITH MEANS FOR REMOTE INDICATION
Walter Engel and Lothar Roth, Nurnberg, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed July 1, 1964, Ser. No. 379,526
Claims priority, application Germany, July 3, 1963, S 85,999
11 Claims. (Cl. 235—92)

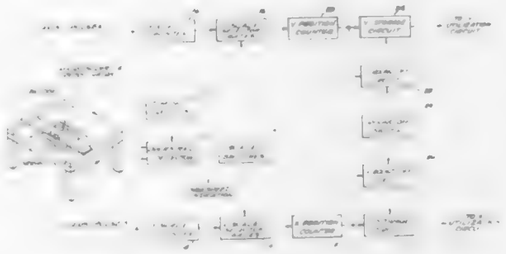
A count indicator comprises a count indicating member having an outer surface and different indicating positions corresponding to different counts to be indicated on the outer surface in parallel tracks. Each of the indicating positions comprises magnetic indications. A Hall probe readout device is mounted in operative proximity with the outer surface of the count indicating member for responding to the magnetic indications of a selected

one of the indicating positions. A guide supports the Hall probe readout device for selective transverse movement parallel to the axis of the count indicating member in



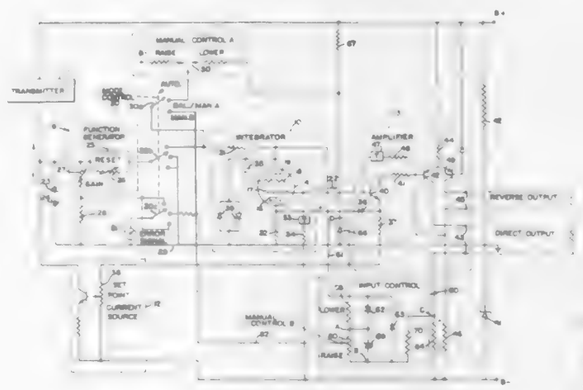
operative proximity with the magnetic indications of the indicating positions to enable readout of a selected count at a time.

3,373,267
PROGRAMMING DEVICE
Carter H. Swann, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed May 12, 1964, Ser. No. 366,722
10 Claims. (Cl. 235—92)



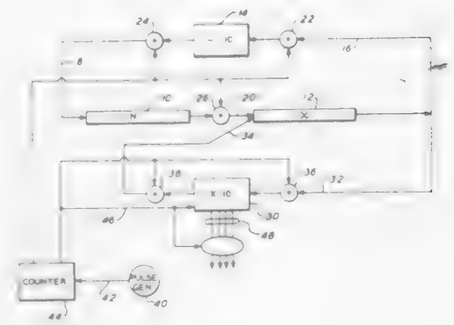
A programming device for converting the information of a drawing or model to numerical data indicative of this information. An electrical circuit produces the desired indication of position for a predetermined scale drawing or model to be used with the programming device. If the scale of the drawing or model is changed, the electrical circuit can be modified by switches so that the same desired indication of position is produced. Also, an electrical circuit rounds off or modifies the indication of position to any multiple of a unit of distance or measurement.

3,373,268
PROCESS CONTROLLER HAVING ELECTROCHEMICAL CELL INTEGRATING MEANS
Clarence W. Hewlett, Jr., Hampton, N.H., assignor to General Electric Company, a corporation of New York
Filed Feb. 24, 1964, Ser. No. 346,991
12 Claims. (Cl. 235—151.1)



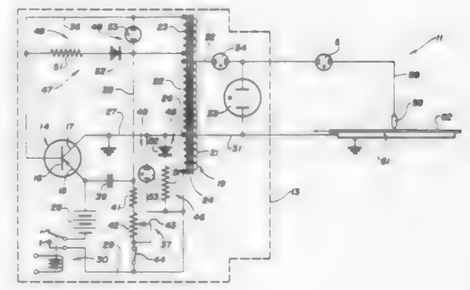
A process controller having an electrochemical cell integrating means. An error signal is connected to a derivative function generating circuit the output of which is coupled to the input of an electrochemical cell integrating circuit. The integral output signal is then coupled through an amplifier to control a process load.

3,373,269
BINARY TO DECIMAL CONVERSION METHOD AND APPARATUS
Howard M. Rathbun, Smithtown, and Mark Pivovonsky, New York, N.Y., assignors to Litton Business Systems, Inc., a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,864
8 Claims. (Cl. 235—155)



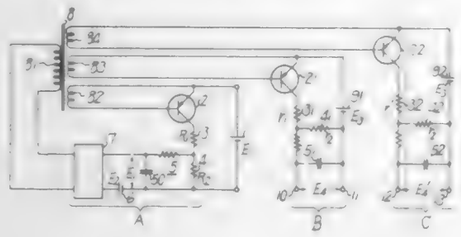
The invention is directed to a radix conversion device for converting a number of binary notation to a number in a coded decimal notation. The conversion technique employs the repeated division of a number in binary notation by 10 until the number goes to zero or a number of times equal to the number decimal digits that could be contained in the binary number to be converted. The number of divisions by 10 is counted and the result of the divisions is multiplied by 10 the same number of times. The result is in the proper coded notation. Variations of the basic structural configuration permit the coded decimal result to take the form of 8421, 5211, and 4221.

3,373,270
SYSTEM, APPARATUS AND METHOD FOR RECORDING AND SENSING
Ralph L. Fenner, Berkeley, Calif., assignor, by mesne assignments, to Berkeley Instruments, Emeryville, Calif., a partnership
Original application June 10, 1959, Ser. No. 819,294, now Patent No. 3,218,647, dated Nov. 16, 1965. Divided and this application Aug. 23, 1965, Ser. No. 490,759
8 Claims. (Cl. 235—155)



Information is read from perforated sheet material by sensing the perforations. A sheet is moved between a pair of electrodes which have impressed across them a pulse having a voltage less than the dielectric strength of the air in the perforation. As the sheet is moved past the electrodes, a perforation is sensed by the electrode ionizing the air in the perforation causing a current flow to produce a signal.

3,373,271
ELECTRONIC COMPUTING CIRCUIT
Miyaji Tomota, Musashino-shi, Tokyo, Japan, assignor to Kabushikikaisha Yokogawa Denki Seisakusho (Yokogawa Electric Works, Ltd.), Tokyo, Japan, a corporation of Japan
Filed June 11, 1964, Ser. No. 374,342
Claims priority, application Japan, June 29, 1963, 38/33,976; Feb. 6, 1964, 39/6,202
2 Claims. (Cl. 235—193)

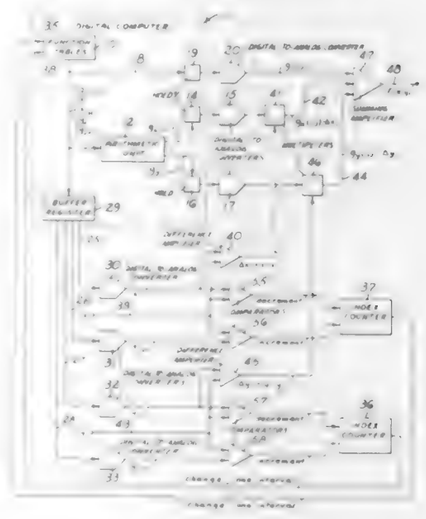


The invention is directed to an electronic computing circuit having a plurality of switching circuits each including an electronic switching device for turning on and off a direct current voltage source. The operation of the switching devices is controlled by sensing the difference between a controlled voltage and a reference voltage to produce a difference voltage which, in turn, controls the operation of an alternating current generator. The amplitude of the alternating current generator is proportional to the value of the difference voltage when the difference voltage is of a given polarity. The output of the alternating current voltage generator is connected to a transformer which has a plurality of secondary windings each connected to one of the switching devices.

3,373,272
ELECTRIC VECTOR PRODUCT GENERATOR
Wolja Saraga, Orpington, Kent, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Oct. 22, 1964, Ser. No. 405,876
Claims priority, application Great Britain, Oct. 25, 1963, 42,229/63
5 Claims. (Cl. 235—194)

1. An electric vector product generator for generating in three coordinate directions in real space the three coordinate components of the vector product of two vectors, said generator comprising a Hall effect body which is symmetrical along three mutually transverse axes and has three pairs of input/output electrodes respectively located along these axes for feeding to said body three coordinate electric current components representing the three co-ordinate components of one of said two vectors, magnetic means for subjecting said body to three coordinate magnetic components representing the three coordinate components of the other of said two vectors, the Hall effect body being effective by virtue of this effect to generate in dependence on the electric current density vector produced therein by the three electric current components and on the magnetic field strength vector produced by the three magnetic components, an electric field strength vector from which can be derived at the three input/output electrode pairs of the Hall effect body respective Hall output voltages representing the three coordinate components of the vector product of the said two vectors.

3,373,273
ANALOG FUNCTION GENERATOR INCLUDING MEANS FOR MULTIVARIABLE INTERPOLATION
Ernest J. Schubert, Hacienda Heights, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Apr. 17, 1964, Ser. No. 360,531
3 Claims. (Cl. 235—197)



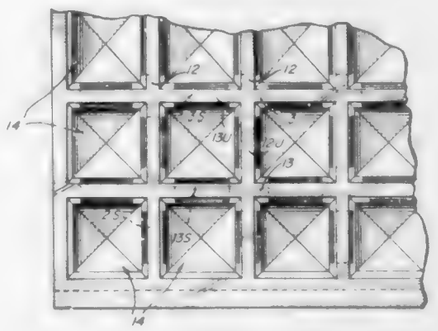
An analog function generator employing a digital computer having a memory for storing a function table and an arithmetic unit for computing values for multivariable interpolations over a zone between a pair of limits for each independent variable function. Comparators are provided to decrement or increment index counters by generating up and down limit signals when a corresponding limit is reached, the index counters, in turn, addressing the proper section of the function tables. An index counter is provided for each independent variable.

3,373,274
ELECTRICAL CANDLE APPARATUS
Herbert Kott, Riveredge, N.J., assignor to Skott Industries, Inc., Newark, N.J., a corporation of New Jersey
Filed Oct. 22, 1965, Ser. No. 500,894
15 Claims. (Cl. 240—10.64)

An electric permanent candle is described where the bulb in the shape of a flame is mounted on a (jack) pin and the top of the candle is fitted with a jack receiver

socket. An insulating cam affixed to the pin is of a geometry to provide a make-break circuit operated by the rotation of the bulb in the absence of additional switches. A like arrangement is described for mating the base of the candle with a recharging fixture.

3,373,275
PLASTIC CELLULAR LENS LOUVER HAVING AIR DISTRIBUTION SLOTS
Jack G. High, Winfield, Ill., assignor to MSL Industries, a corporation of Minnesota
Filed Oct. 13, 1965, Ser. No. 495,567
10 Claims. (Cl. 240—78)

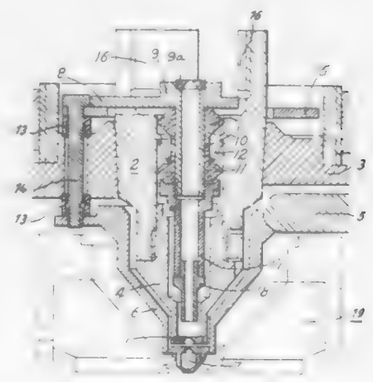


A one piece molded plastic lens louver of light transmitting material is disclosed with masked ventilation openings, the molded louver having a planar top wall, a first set of parallel uniformly spaced continuous ribs integrally depending therefrom and a second set of parallel correspondingly spaced continuous ribs integrally depending from the top wall and intersecting the ribs of the first set at right angles to define a planar grid work of cells, each cell being square in plan outline and being spanned by an integral lens portion of the top wall. The louver has vertical slots opening through the top wall at uniformly distributed regions along each rib to provide a set of four air flow paths opening laterally into each cell. The slots terminate partway through each rib to be masked by the rib and preclude direct light paths.

3,373,276
TERMINAL PEDESTAL FOR UNDERGROUND WIRING SYSTEMS
Kenneth W. Klein, 28517 Wolf Road, Bay Village, Ohio 44140
Filed July 26, 1965, Ser. No. 474,581
2 Claims. (Cl. 240—[illegible]4)

The combination of, a support pole having a luminaire at its upper end and an underground wiring system enclosure secured to the pole. The enclosure comprises a pair of generally U-shaped ground line cover members secured to the pole to form a hollow open-ended enclosure extending above and below a ground level, a pair of generally U-shaped access members surrounding the pole and extending upwardly from the top of the ground line cover members and cooperating therewith to form an uninterrupted vertically extending enclosure housing above and below ground level and a partition extending between the cooperating edges of the access members to divide the same into two vertical compartments. An apertured cover surrounds the pole for closing the upper end of the enclosure. The access members are selectively removably mounted on the ground line cover members and the cap for individually exposing each compartment.

3,373,277
OBJECT CARTRIDGE WHEREIN THE SPECIMEN CARRIER IS SURROUNDED BY A COOLING CHAMBER
Hans Gunther Heide, Berlin-Charlottenburg, Germany, assignor to Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V.
Filed Dec. 27, 1963, Ser. No. 333,912
Claims priority, application Germany, Apr. 19, 1963, M 56,547
20 Claims. (Cl. 250—49.5)

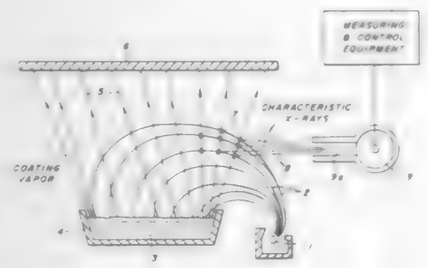


1. A corpuscular apparatus, operating in conjunction with an evacuating pump, especially an electron microscope, comprising an object cartridge having two cartridge parts disposed in heat insulated relation to one another, a specimen carrier, the first of said cartridge parts holding the specimen carrier and being with such carrier in good heat conducting connection with parts of the corpuscular ray apparatus having at least approximately room temperature and capable of maintaining the specimen carrier at close to room temperature, the second cartridge part having walls of good heat conducting capacity and forming a chamber the walls of which are operatively connected in good heat conducting relation with a deep freeze device, the cooling chamber so formed surrounding the specimen carrier in heat insulated relation with respect thereto.

3,373,278
DETERMINATION OF VAPOR COATING RATE BY X-RAYS EMITTED FROM SAID VAPOR
Frank F. Cilyo, Hinsdale, Ill., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 6, 1965, Ser. No. 423,764
7 Claims. (Cl. 250—49.5)

Method and apparatus are provided for determining coating thickness in vapor deposition processes. Vapor density may be correlated with deposition rate, which in turn determines coating thickness at a given speed of travel of the substrate. The vapor density is determined

by X-ray measurement. The energy source for the X-rays may be independent of the energy source for evaporation of coating material. However, if the latter energy source



is adapted to generate the required X-rays, it may perform the dual function of evaporation and X-ray production.

3,373,279

EUROPIUM ACTIVATED STRONTIUM IODIDE SCINTILLATORS

Robert Hofstadter, Stanford, Calif., assignor, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

No Drawing. Filed Jan. 29, 1965, Ser. No. 429,141
5 Claims. (Cl. 250—71.5)

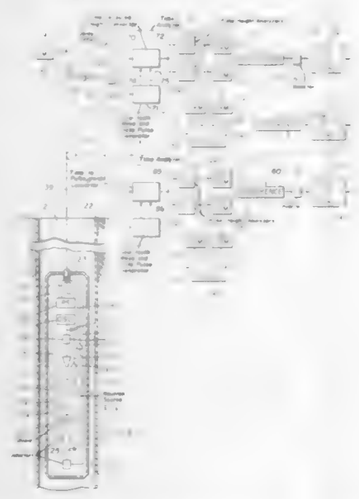
This invention comprises a scintillation crystal composed of strontium iodide activated by europium. The invention also comprises a radiation detector having a detecting element and a chamber optically coupled to this detecting element, having within the chamber a scintillator consisting of strontium iodide activated with about 10–16,000 parts per million of europium.

3,373,280

PULSED RADIOACTIVE WELL LOGGING METHOD FOR MEASUREMENT OF POROSITY AND SALINITY

William R. Mills, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Dec. 18, 1963, Ser. No. 331,502
16 Claims. (Cl. 250—83.3)



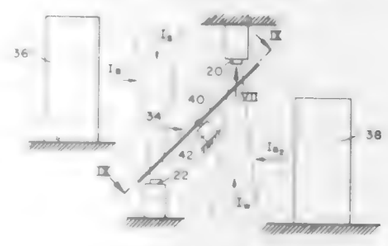
1. A method of investigating formations traversed by a borehole for two parameters of interest and of a different nature comprising the steps of passing into the borehole a logging tool containing a source of primary radiation, irradiating the formations with bursts of primary radiation spaced in time for the production of secondary radiation, at a first location spaced from the source detecting secondary radiation passing from the formations into the borehole, at a second location spaced from the source by a different distance detecting secondary radiation passing from the formations into the borehole, producing in correlation with depth a first measurement representative of the secondary radiation detected at the first location following each burst of primary radiation, producing in correlation with depth a second measurement representative of the secondary radiation detected at the second location following each burst of primary radiation, from the first and second measurements producing first and second functions characterizing the secondary radiation detected respectively at the first and second locations, recording a third function representative of the difference between the first and second functions to obtain a measurement of one of the parameters of interest, and from one of the first and second measurements recording a function characterizing the secondary radiation detected at one of said locations for comparison with the parameter measured for obtaining information about the other of the two parameters of interest.

3,373,281

METHOD FOR DETERMINING TOTAL HEAT FLOW FROM THE SEA SURFACE BY MEANS OF DETECTING INFRARED RADIATION IN TWO WAVELENGTH BANDS

Edward D. McAlister, La Jolla, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 21, 1965, Ser. No. 449,906
14 Claims. (Cl. 250—83.3)



The present invention is a method and device for enabling a determination of the total heat flow from the sea surface. This is accomplished by measuring the radiation from the top and bottom extremeties of an ocean layer where heat flow is substantially by water conduction only. This layer has been found to be approximately defined by the depths 0.1 mm. and 1.00 mm. It has been further found that the infrared radiation at the ocean depth .01 mm. is in the region of 3.5 to 4.0 microns of wavelength whereas the infrared radiation from the 1.00 mm. depth lies within the range of 2.0 to 2.4 microns of wavelength. The temperature corresponding to the indicated infrared readings may then be compared to indicate the temperature gradient and the corresponding total heat flow from the sea surface.

3,373,282

IONIZING RADIATION DOSE RATE MEASURING DEVICES INCLUDING UTILIZATION AS GAS DENSITY METERS

Fred W. Falk, Pirmasens, Germany, assignor to the United States of America as represented by the Secretary of the Army

Filed Feb. 13, 1964, Ser. No. 344,614
7 Claims. (Cl. 250—83.6)

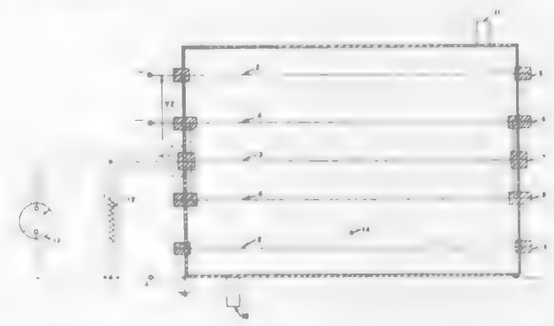
5. An ionizing radiation dose rate measuring system comprising:

(a) a radiation detector comprising a conductive housing, an anode element, a cathode element, and a grid element means for reducing space charge around said anode element within said housing;

(b) means connecting said housing with electrical ground;

(c) means for biasing said cathode element and grid element means negative with respect to said anode element and said housing;

(d) means for detecting the mean current flow from said anode element when said elements are exposed to radiation;



(e) means for exhausting air from within said housing including a vacuum pump and flow meter for indicating the rate of flow through said vacuum pump; and,

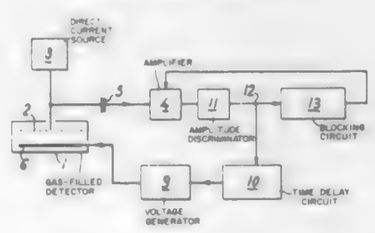
(f) means for introducing air within said housing.

3,373,283

DEVICE FOR TRIGGERING A NUCLEAR PARTICLE DETECTOR OF THE GAS TYPE

Alain Lansiart, Orsay, Jean Leloup, Gif-sur-Yvette, and Jean Lequais, Orsay, France, assignors to Commissariat à l'Energie Atomique, Paris, France

Filed June 3, 1964, Ser. No. 372,324
Claims priority, application France, June 11, 1963, 937,613
4 Claims. (Cl. 250—83.6)



1. In a nuclear particle detector, a gap-filled spark chamber housing an anode and a cathode adapted to be energized by a D-C potential, means connected to said anode for amplifying electron pulses caused as nuclear particles pass through said chamber and ionize the gas therein, generator means responsive to such an amplified pulse for applying a high voltage pulse to said cathode to cause a spark in said chamber along the path of a passing nuclear particle, and circuit means also responsive to an amplified pulse for blocking the amplifier means during a predetermined dead time of the spark chamber.

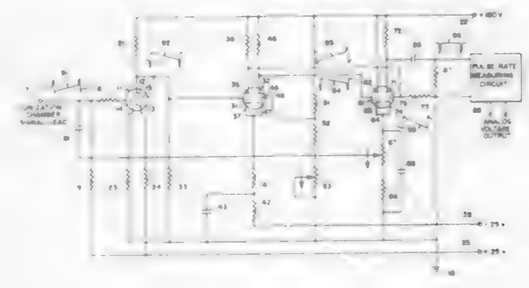
3,373,284

CURRENT MEASURING APPARATUS FOR USE WITH AN IONIZATION CHAMBER

Herbert A. Brown, San Pablo, and Donald G. Hutson, Albany, Calif., assignors to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed June 14, 1965, Ser. No. 463,500
7 Claims. (Cl. 250—83.6)

This invention contemplates the use of an integrating circuit coupled to an ionization chamber for developing a voltage which is a function of the amplitude of the current from the ionization chamber. A trigger circuit is coupled to the integrating circuit to produce a pulse signal when the developed voltage reaches a predetermined threshold value. Upon the occurrence of such a pulse, reset means are provided to dissipate the voltage thereby enabling the trigger circuit to produce a train of pulses at a rate commensurate with the rate at which the



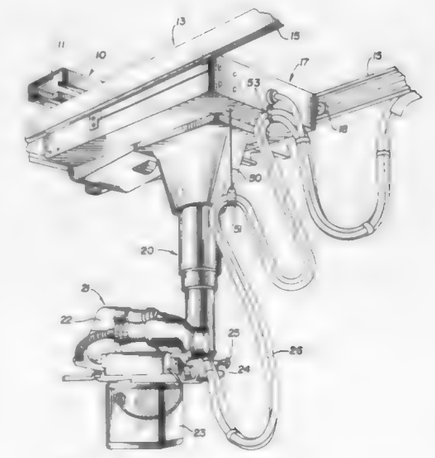
voltage is developed. Finally, a pulse rate measuring circuit is used to derive an analog signal which is a logarithmic function of the pulse rate.

3,373,285

DEVICE FOR CONTROLLING THE SLACK IN HIGH TENSION CABLES FOR A CEILING MOUNTED X-RAY TUBE ASSEMBLY

David M. Barrett, Lyndhurst, Ohio, assignor to Picker X-Ray Corporation, Waite Manufacturing Division, Inc., Cleveland, Ohio, a corporation of Ohio

Filed June 8, 1965, Ser. No. 462,362
7 Claims. (Cl. 250—91)



The preferred construction has a ceiling-mounted carriage with a depending telescopic column supporting an X-ray tube, high-tension cables extending from the carriage to the X-ray tube, and a support cable connected to the high-tension cables midway between their connections to the carriage and the X-ray tube and connected to a counterbalance mechanism in such a manner that the support cable is taken up or let out at a vertical rate of movement approximately one-half the vertical movement of the X-ray tube.

3,373,286

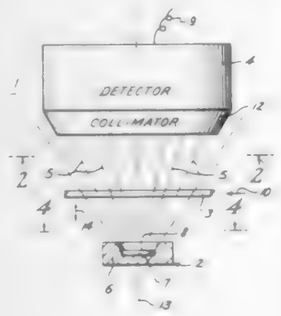
DEVICE FOR MEASURING THE CHARACTERISTICS OF A MATERIAL MOVING ON A CONVEYOR WITH MEANS FOR MINIMIZING THE EFFECT OF FLUTTER

Linus K. Han, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Filed Sept. 18, 1964, Ser. No. 397,502
14 Claims. (Cl. 250—105)

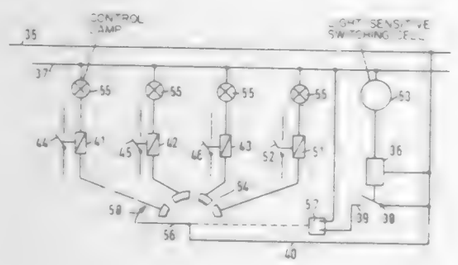
1. Improved apparatus for measuring a characteristic of a material, that is transported by a material conveyor with nuclear radiation to minimize the effect of flutter, said apparatus comprising,

a source of nuclear radiation,
a detector positioned opposite and spaced from said source to permit said material to pass therebetween for producing an electrical signal that is a function of nuclear radiation passing through the material from said source, said detector having a window facing said material,
means for supporting said source and detector in said opposite relationship,
said source having a radiation emitting surface area that is less than the area of said window,



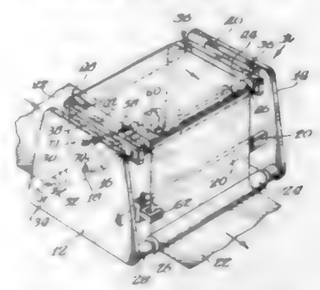
means disposed between said detector and the material to select substantially only the part of the nuclear radiation passing through the material that radiates directly from the source, said selecting means including a collimator having apertures angularly disposed to focus said detector substantially on the location of said source.

3,373,287
PROGRAMME SELECTION ARRANGEMENT FOR WASHING MACHINES
Walter Holzer, Drosteweg 19, Meersburg (Bodensee), Germany
Filed Aug. 31, 1964, Ser. No. 393,152
Claims priority, application Germany, Sept. 4, 1963, H 50,177
5 Claims. (Cl. 250—215)



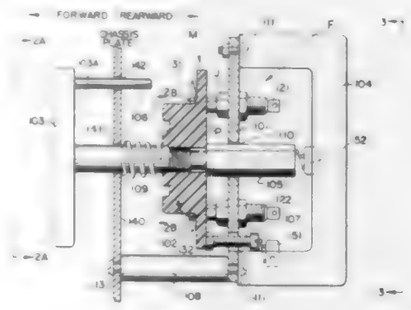
In washing machines where various washing programmes take place fully automatically, this disclosure relates to an arrangement for selecting a desired programme from these by means of light activated photocells. The photocells are mounted inwardly of a humidity-screening and partially-translucent control panel. Partial programmes may be integrated into a total programme by activation of some but not all of the photocells. A photocell may be energized for a certain length of time to run a motor which in turn activates a series of photocell switches to effect a desired total programme responsive to the time for which the photocell was energized.

3,373,288
PHOTOSENSITIVE WEB SHIFTING APPARATUS
Rudolph T. Otepka, Lombard, and Robert Fokos, Addison, Ill., assignors to Web Press Engineering, Inc., Addison, Ill., a corporation of Illinois
Filed Aug. 26, 1965, Ser. No. 482,739
8 Claims. (Cl. 250—219)



1. A box tilt assembly for straightening moving webs comprising in combination, a support frame comprising a pair of spaced side walls, an entrance roller over which the web travels journaled in said side wall, a pair of parallel tilt roller each journaled at it end in a tilt frame, parallel links supporting said tilt frame on said side walls, each parallel link forming a variable acute angle with the support frame, the acute angles of all parallel links being on the same side with respect to the direction of web travel, means on said support frame for actuating said tilt frame in response to a predetermined position of the web to provide a canting movement of the pair of tilt rollers to move the web transversely to maintain web alignment, and an exit roller over which the web travels journaled in said side walls, the axes of the entrance roller and exit roller being parallel to one another.

3,373,289
POLARITY REVERSING SWITCH FOR ELECTRON TUBE
Paul R. Fruzzetti, Brockton, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Oct. 7, 1965, Ser. No. 493,719
1 Claim. (Cl. 307—113)

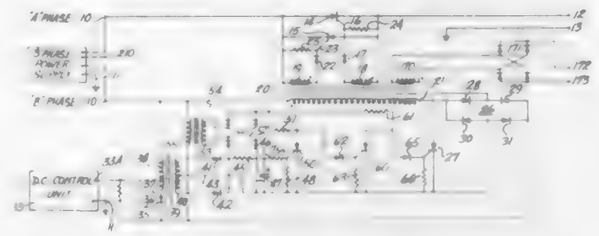


Polarity reversing electrical switch for use with high voltage discharge tube having two modes of operation at opposite polarities. The switch has a switching member which is movable in rotational and translational senses and is provided with a chassis plate having spaced guide apertures for the movable member.

3,373,290
POLYPHASE CURRENT CONTROL SYSTEM
Edward S. Baker, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Continuation-in-part of application Ser. No. 444,196, Mar. 31, 1965. This application Dec. 13, 1965, Ser. No. 513,452
14 Claims. (Cl. 307—133)

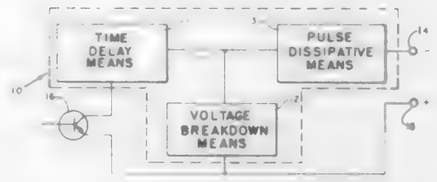
A system is disclosed for controlling a polyphase power supply in a manner to insure that power from each phase

is initially applied to a load under zero voltage conditions. The application discloses one such system wherein controlled rectifiers such as silicon controlled rectifiers are connected in series circuit arrangement between each phase of the power supply and the load with the gating signals for the various controlled rectifiers being derived from the various phases in a manner which prevents initial turn on of power except under zero voltage conditions.



In a three phase example the A phase controlled rectifiers are gated from B phase voltage, the B phase rectifiers are gated from the C phase, and the C phase gated from the A phase voltage. The gating circuits include zero voltage detection circuits and are so interconnected that the succeeding phases can turn on only after the circuitry for the preceding phase has been properly actuated. Thus a single input control network coupled with one of the phases serves to control all three phases.

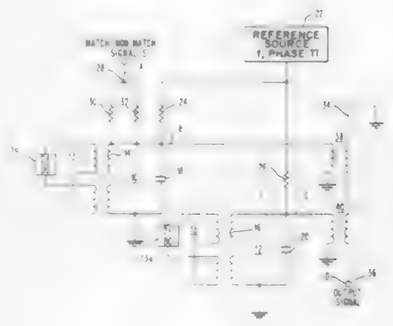
3,373,291
MEANS FOR PROTECTING TRANSISTORS FROM HIGH VOLTAGE PULSES
Glen Peterson, 540 S. 83rd E. Ave. 74112, and Hubert A. Burns, 7925 E. 27th Court 74129, both of Tulsa, Okla.
Filed Aug. 21, 1961, Ser. No. 132,957
16 Claims. (Cl. 307—202)

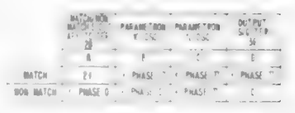


1. A three-terminal voltage protective device for transistors comprised of time delay means, pulse dissipative means and voltage break-down means, said terminals identified as input, output and ground terminals, respectively, one terminal of said time delay means connected to said output terminal, a second terminal of said time delay means connected to one terminal of each of said pulse dissipative means and said voltage break-down means, a second terminal of said pulse dissipative means connected to said input terminal, a second terminal of said voltage break down means connected to said ground terminal, said time delay means and said pulse dissipative means, in addition to said delay and dissipative functions, together providing at least one low resistance path for the conduction of direct currents between said input and output terminals.

3,373,292
SENSING CIRCUITRY
William J. Bartik, Jenkintown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 27, 1965, Ser. No. 428,500
4 Claims. (Cl. 307—210)

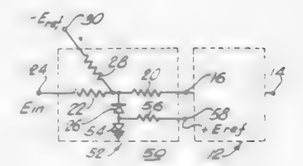
3. A frequency logic circuit comprising
means for receiving an input signal, said signal being one of two different types, one type being a signal at a frequency f at a phase 0 mode of oscillation, the other type being a signal at a frequency $2f$;
a reference source of oscillations at said frequency f at a phase π mode of oscillation;
a first tuned circuit resonant of said frequency f;
means coupling said reference source to said tuned circuit;
means coupling said receiving means to said tuned circuit,





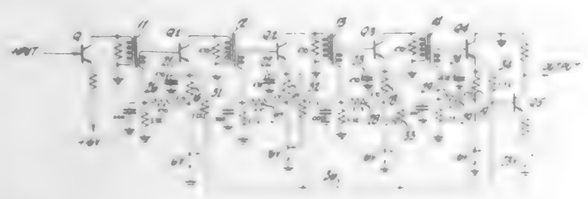
whereby said first tuned circuit is caused to oscillate at said frequency f in said phase π mode when said input signal is a signal at said frequency $2f$, and whereby said first input tuned circuit is caused to oscillate at said frequency f in said phase 0 mode when said input signal is a signal at said frequency f, phase 0 mode;
a second tuned circuit resonant at said frequency f;
means coupling said reference source to said second tuned circuit; and
an output circuit coupled to said first and second tuned circuits.

3,373,293
TEMPERATURE COMPENSATED FUNCTION GENERATING CIRCUIT
Peter D. Hansen, Lynnfield, and Robert H. Malter, Sharon, Mass., assignors to George A. Philbrick Researches Inc., Dedham, Mass., a corporation of Massachusetts
Filed May 21, 1965, Ser. No. 457,574
7 Claims. (Cl. 307—229)



Temperature compensation of diode function generating circuits wherein compensation is achieved by using a semi-conducting junction device (e.g. silicon diode) having temperature characteristics closely matching those of the diode or diodes in the function generating circuits. In one embodiment, a single compensating diode connected to a reference voltage is used for a plurality of function generating circuits.

3,373,294
LINEAR LOGARITHMIC AMPLIFYING DETECTOR
Takeshi Don Fujinami, Los Angeles, Calif., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 4, 1964, Ser. No. 408,915
5 Claims. (Cl. 307—230)



There is disclosed a plural stage cascade linear logarithmic amplitude modulated-carrier frequency amplifier which does not require any external detector for demodulating the amplitude modulated carrier frequency input signal applied thereto. This is accomplished by producing an output signal from each stage which is characterized by having both a carrier frequency component and a direct current component, the respective value of each of which is an approximately linear gain function of the amplitude of the signal at the input of that stage when the amplitude of the input signal is below a given value and each of which has a respective fixed value which is independent of the amplitude of that input signal when the amplitude of that input signal is at least this given value. The carrier frequency component of each stage is applied as an input to the next succeeding stage, while the direct current components of all of the stages are combined to produce the demodulated output of the circuit.

3,373,295
MEMORY ELEMENT
Peter F. Lambert, New Haven, Conn., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Apr. 27, 1965, Ser. No. 451,123
5 Claims. (Cl. 307—238)

This invention relates to memory elements, and more particularly, to memory elements having variable gain characteristics in addition to relatively long term electrical storage capabilities.

A memory element according to the present invention comprises a field-modifiable variable resistor, for example, a field-effect transistor having a gate terminal, a drain terminal and a source terminal. Means is provided for applying adaptation or information signals to the gate terminal. Storage means is electrically related to the gate terminal of the transistor for storing the adaption signals. A source of signals to be adapted is electrically related to the drain and source terminals to produce a current between the drain and source termials. The information or adaption signals stored in the storage means maintains the transistor in a reverse-biased condition, thereby substantially preventing flow of adaption signal current through the transistor. To effect a read-out, the adaption signal stored in the storage device produces an electric field in the transistor, thereby providing a flow of drain-source current. Thus, the output voltage measured across the transistor is functionally related to the charge on the storage device. Furthermore, increasing or decreasing the stored adaption signal produces a corresponding change in the electric field, thereby providing a resultant modulation of the drain-source current.

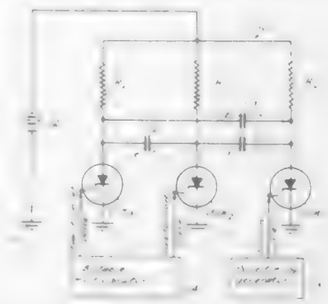
According to one modification of the invention, a dual-gate-field-effect transistor is provided so that one gate receives a supply of adaption electric signals while the other gate receives a supply of electrical signals to be adapted. A fixed bias is electrically connected to both the drain and source terminals.

3,373,296
AC MAGNITUDE RESPONSIVE ELECTRONIC RELAY
Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Oct. 2, 1964, Ser. No. 401,100
4 Claims. (Cl. 307—247)

4. In an electronic relay including an electronic contact having a control circuit, means for providing control current to said control circuit comprising:
- first energy storage means connected to means for providing energy;
- bistable switch means having an input and an output circuit;
- means connecting said input circuit across said first energy storage means;
- means including said control circuit connecting said output circuit across said first energy storage means;
- second energy storage means connected to means for providing energy;
- voltage reference means;
- and means including said input circuit connecting said voltage reference means across said second energy storage means, so that when said second energy storage means reaches a predetermined magnitude of charge said voltage reference means will cause a change in current to actuate said bistable switch means.

3,373,297
SILICON CONTROLLED RECTIFIER LOCK-UP PROOF FLIP-FLOP
Lowell D. Yates, El Paso, Tex., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 9, 1965, Ser. No. 431,482
3 Claims. (Cl. 307—252)

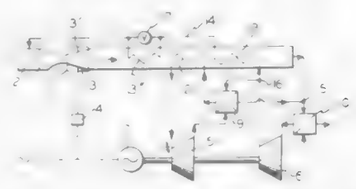
1. A tristable controlled rectifier lock-up proof flip-flop including turn-on pulse means and turn-off pulse means and which reverts temporarily to bistable operation when coincidence between a turn-on pulse and a turn-off pulse occurs comprising in combination, a D-C power supply, a first controlled rectifier, a second controlled rectifier, a third controlled rectifier, each of said controlled rectifiers provided with anode, cathode and gate elements, the anodes of said controlled rectifiers connected to the positive pole of said D-C power supply, the cathodes of said controlled rectifiers connected to the negative pole of said D-C power supply, first commutation means coupling the anodes of said first and second controlled rectifiers, second commutation means coupling the anodes of said second and third controlled rectifiers, third commutation means coupling the anodes of said first and third controlled rectifiers, said turn-on pulse means connected to the gate of said first controlled rectifier whereby signals are applied to said gate turning on said first controlled rectifier, said turn-off pulse means generating alternate pulses and having one of its terminals connected to the gate of said second controlled rectifier and the other of its terminals connected to the gate of said third controlled rectifier causing said second and third controlled rectifiers to alternately fire whereby said first controlled rectifier is accordingly extinguished.



3,373,298
SWITCHING CIRCUIT
William R. Tompkins, San Diego, and James L. Kimball, La Mesa, Calif., assignors to Cohu Electronics, Inc., San Diego, Calif., a corporation of Delaware
Filed May 4, 1965, Ser. No. 453,110
15 Claims. (Cl. 307—256)

A switching circuit in which a pair of diodes are rendered alternatively reversed biased and forward baised respectively by the presence of a positive or negative control signal. When forward biased, the first diode allows signals to be passed to the base of an emitter follower transistor while the second diode is back biased. When the first diode is reversed biased, the second diode is forward biased so that signals are shunted to ground and the base of the emitter follower is also grounded so that it is rendered non-conductive. A compensating circuit for maintaining a constant load for the source of signals is provided as is a network for varying the response time of the switch with respect to positive and negative control signals.

3,373,299
THERMAL POWER PLANT WITH MHD GENERATOR
Kurt Keller, Kusnacht, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed Oct. 19, 1964, Ser. No. 404,579
Claims priority, application Switzerland, No. 7, 1963, 13,650/63
10 Claims. (Cl. 310—11)



Schemes for utilizing the waste heat of a magneto-hydrodynamic (MHD) generator in a closed circuit gas turbine power plant. The gas turbine circuit may be separate from or include the circuit of the MHD generator. In the latter case, the MHD generator is located either in series with the power plant components, or in a by-pass connection between high and low pressure points of the closed circuit. A similar shunt or by-pass connection, containing a cooler and an expansion turbine, can be employed to produce a stream of low temperature gas that is utilized to cool the magnet of the MHD generator.

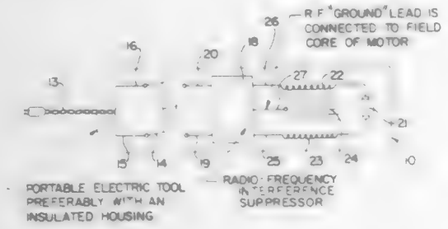
3,373,300
ELECTRIC BEARING FAILURE INDICATOR
Francis P. Sullivan, 97 Mountain Ave., Bloomfield, N.J. 07003
Filed Feb. 4, 1966, Ser. No. 525,034
5 Claims. (Cl. 310—68)

1. A bearing failure indicator for an A.C. generator having a housing, a stator mounted in said housing and a rotor mounted by bearings in said housing and having a predetermined air gap between said stator and rotor, the improvement comprising a pair of windings located 180° apart in slots in said stator, an indicator, circuit means connecting said windings in phase opposition in series with said indicator, said winding being responsive to unsymmetrical changes in said air gap to actuate said indicator.

3,373,301
SYSTEM FOR RADIO-FREQUENCY INTERFERENCE SUPPRESSION
Elliott M. Black, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Oct. 22, 1965, Ser. No. 500,952
3 Claims. (Cl. 310—72)

A portable tool is provided with an electric motor mounted within a housing which is formed, preferably, of a molded-plastic insulating material. During operation of the tool, the motor generates spurious energy in the radio-frequency spectrum. This energy may interfere with, and thus have a deleterious effect upon, the performance of radio or other electronic equipment located in the

vicinity of the tool. Accordingly, a suppressor is mounted within the tool housing for the purpose of eliminating this radio-frequency interference or else minimizing it to an acceptable level. This radio-frequency interference suppressor, which is conventional and is sometimes referred to in the art as an "REI" suppressor, is ordinarily provided with a "ground" lead. The purpose of this so-called "ground" lead is to dissipate the radio-frequency


R.F. "GROUND" LEAD IS CONNECTED TO FIELD CORE OF MOTOR
PORTABLE ELECTRIC TOOL PREFERABLY WITH AN INSULATED HOUSING
RADIO-FREQUENCY INTERFERENCE SUPPRESSOR

energy filtered out by the suppressor. In a conventional tool employing a metallic housing which is at ground potential, the "ground" lead of the suppressor is connected to the metallic housing. In this disclosure, however, the "ground" lead is connected directly to the field core of the motor; the field core is ungrounded electrically, yet serves to dissipate the radio-frequency energy filtered out by the suppressor.

3,373,302
CATHODE RAY TUBE DISPLAY SCREEN COMPRISING WOVEN MAT OF LUMINESCENT GLASS FIBERS

Stephen W. Barber, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Dec. 21, 1964, Ser. No. 419,944
1 Claim. (Cl. 313—92)

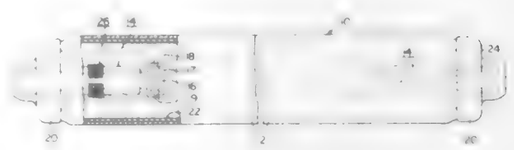
1. A cathode ray tube including an electron gun and a display screen excitable into luminescent emission by electrons from said gun, said display screen comprising a woven mat of substantially transparent, uniformly coalesced, homogeneous, fused glass fibers prepared from a composition consisting essentially of finely divided, anhydrous, particulate, non-crystalline, substantially pure silica and a luminescent producing quantity of at least one member selected from lanthanum, cerium, praseodymium, neodymium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium.

3,373,303
AMALGAM-CONTAINING FLUORESCENT LAMP WITH INTEGRAL STARTING AID

George S. Evans, Caldwell, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 29, 1965, Ser. No. 451,904
7 Claims. (Cl. 313—109)

A small amount of xenon, preferably from 0.1% to 2% by volume, is added to the fill gas of an amalgam-containing fluorescent lamp to compensate for the initial deficiency of mercury vapor when the lamp and amalgam are at ambient temperature and reduce the starting voltage to a value such that the lamp can be operated in fixtures and on ballasts designed for conventional fluores-

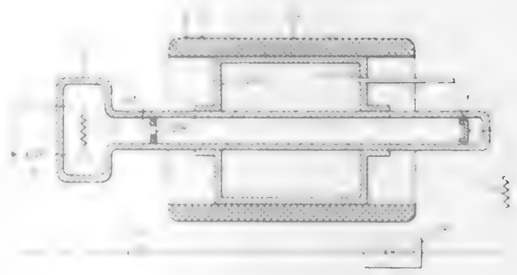


cent lamps. The xenon additive also permits the electrical characteristics of the lamp to be adjusted and correlated with the design parameters of the ballast.

3,373,304
MEANS FOR INCREASING ELECTRON DENSITY IN LOW PRESSURE GAS DISCHARGE TUBE

Claude D. Lustig, Arlington, Mass., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Aug. 20, 1965, Ser. No. 481,340
6 Claims. (Cl. 313—161)



An elongated electron discharge tube having a constriction in the electron path and a solenoidal magnet for producing a longitudinal unidirectional magnetic field in a region between the constriction and the anode of the discharge tube.

3,373,305
DUOPLASMATRON SOURCE HAVING AN OFFSET COMPRESSOR ELECTRODE

Leslie Edward Collins, Reading, and Royston Henry Gobbett, Basingstoke, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Oct. 18, 1965, Ser. No. 497,248
Claims priority, application Great Britain, Oct. 26, 1964, 43,658/64
3 Claims. (Cl. 313—230)

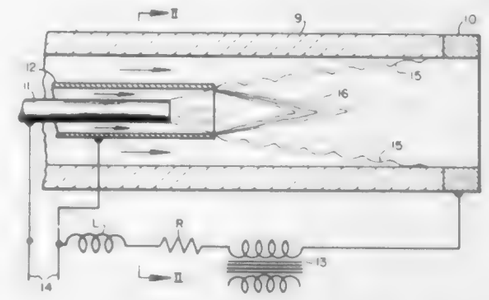
A duoplasmatron source for producing negative ions including a compressor having an orifice, an anode having an orifice and an extractor having an orifice. The axis of the compressor orifice is displaced from the common

axis of the anode and the extractor orifices to allow negative ions from the outer region of an arc discharge established between compressor and anode to be extracted through the anode orifice.

3,373,306
METHOD AND APPARATUS FOR THE CONTROL OF IONIZATION IN A DISTRIBUTED ELECTRICAL DISCHARGE

Bela Karlovitz, Pittsburgh, Pa., assignor to Northern Natural Gas Company, Omaha, Nebr., a corporation of Delaware

Filed Oct. 27, 1964, Ser. No. 406,810
12 Claims. (Cl. 313—231)



1. In the production of an electrical discharge distributed substantially uniformly through a gaseous stream the steps comprising,

(A) maintaining a high temperature gaseous piloting zone,

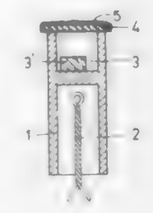
(B) introducing ionizing additives into said piloting zone, and

(C) introducing into said gaseous stream ionized gases from the high temperature piloting zone.

3,373,307
DISPENSER CATHODE

Pieter Zalm, Johannes Wilhelmus Catharina Sprengers, Antonius Johannes Alberta van Stratum, and Petrus Cornelis van der Linden, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 12, 1964, Ser. No. 410,655
Claims priority, application Netherlands, Nov. 21, 1963, 300,825; Feb. 12, 1964, 64—1,191
6 Claims. (Cl. 313—346)

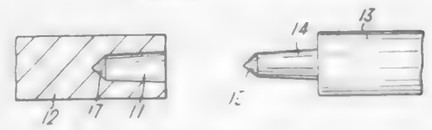


A dispenser type cathode comprising a refractory metal matrix of tungsten or tungsten-molybdenum in reactive relationship with an alkaline earth metal compound which will supply free barium to the emitting surface of the matrix. A thin porous layer of a refractory metal having a work function higher than that of tungsten covers the emitting surface. The layer metal is selected from the group of osmium, iridium, ruthenium, and rhenium. The resultant cathode exhibits increased electron emission at the same temperature, or the same electron emission at a lower temperature, than that of a comparable cathode without the layer.

3,373,308
NEGATIVE ELECTRODES FOR CARBON ARC LAMPS

Jean Adrien Perrin, Pagny-sur-Moselle, France, assignor to Societe le Carbone Lorraine, Paris, France, a French body corporate

Continuation-in-part of application Ser. No. 337,763, Jan. 15, 1964. This application July 5, 1966, Ser. No. 575,203
Claims priority, application France, Oct. 31, 1963, 952,421, Patent 1,383,904
5 Claims. (Cl. 313—357)

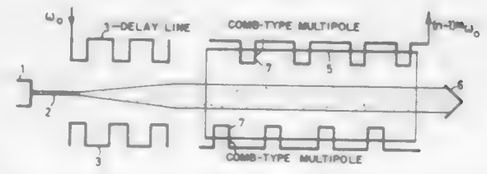


A negative electrode for a high-intensity carbon arc lamp has a male end of truncated conical shape terminating in a conical point of greater apical angle. This male end fits into the complementarily-shaped female end of a preceding electrode. The electrode burns from the male towards the female end and at the junction the cathodic spot of the arc is constrained to pass to the point so minimising risk of dowsing the arc.

3,373,309
ELECTRON BEAM TUBE FOR FREQUENCY MULTIPLICATION

Klaus Pöschl and Werner Veith, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

Filed Sept. 30, 1963, Ser. No. 313,412
Claims priority, application Germany, Oct. 3, 1962, S 81,874
11 Claims. (Cl. 315—3)

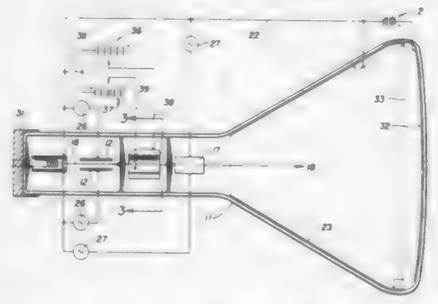


An electron beam tube for frequency multiplication comprising an electron beam generating system, a coupling system for synchronous waves, an electrostatic multiple field of even pole number having at least six poles, a decoupling system and a collector, in which system electron beam extends in a longitudinal magnetic field.

3,373,310
CATHODE RAY TUBE SELECTIVE DEFLECTION AMPLIFIER USING A QUADRUPOLE LENS OF CRITICAL LENGTH

John L. Worcester, Walnut Creek, Calif., assignor to E-H Research Laboratories, Inc., Oakland, Calif., a corporation of California

Filed July 17, 1964, Ser. No. 383,363
1 Claim. (Cl. 315—18)



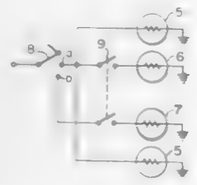
A deflection amplifier for use in a cathode ray tube which comprises a quadrupole lens. The length of the

quadrupole lens is critical and is determined by a formula, causing amplification of the deflection in one direction and no effect on deflection in a second direction. Opposite pairs of plates in the quadrupole lens have equal and opposite D.C. voltages impressed on them.

3,373,311
AUTOMOBILE HEADLAMP SYSTEM

Karl H. Neulinger, Bronx, N.Y., and Paul J. Yatcko, Livingston, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 22, 1965, Ser. No. 502,258
4 Claims. (Cl. 315—83)

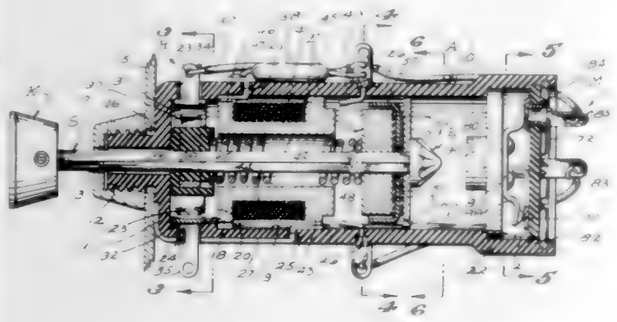


An automobile headlamp system including four sealed-beam headlamps disposed in pairs on each side of the front of a motor vehicle and an energizing circuit having a panel switch and a dimmer switch. The energizing circuit is operable in one position of the panel switch to provide low beam illumination from one headlamp of each pair and operable to add the illumination of a third headlamp to the low beam illumination by actuation of the dimmer switch. The energizing circuit is operable in a second position of the panel switch to add the remaining headlamp to the low beam illumination provided by the first mentioned headlamps and the dimmer switch is operable in the second position of the panel switch to return the system to low beam illumination from a condition wherein all four headlamps are lit without any visible jumping effect in transition from one beam to another.

3,373,312
SOLENOID ACTUATED AUTOMOBILE HEADLIGHT SWITCH

Marks Mervyn Conn, 2319 Charlton, Los Angeles, Calif. 90034

Filed Apr. 1, 1966, Ser. No. 539,389
9 Claims. (Cl. 315—83)

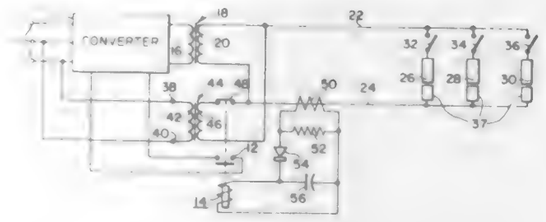


A solenoid actuated automobile headlight switch including an elongate body with front and rear ends, an elongate shaft extending arranged parallel with the body with a forward portion projecting forwardly beyond the forward end of the body, said shaft being shiftable axially between front and normal rear positions, a primary contact carried by the body, a first power line, a power source and a normally open auto ignition switch, said first power line extending between the power source and the primary contact, said ignition switch being arranged in said power line to control the flow of power therethrough, a secondary contact carried by the body, suitably grounded head lamps, a second power line connected between the secondary contact and the head and tail lamps, a connector carried by the shaft to establish connection between the primary and secondary contacts when the shaft is in its front position, an electro magnet carried by the body and having a core and a coil about the core, said coil having a primary lead grounded and a secondary lead connected with the second power line, a ferrous mass carried by the shaft to occur rearward of the electro magnet when the shaft is in its rear position and to engage the magnet core when the shaft is in its front position, and spring means related to and normally yieldingly urging the shaft to its rear position.

3,373,313
POWER SUPPLY SYSTEM FOR LOW-FREQUENCY AND HIGH-FREQUENCY DISCHARGE DEVICES AND SWITCHING MEANS THEREFOR

Frank J. Prines, Penn Hills, Pa., and Eugene R. Pledger, West Seneca, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 292,853, July 5, 1963. This application Aug. 16, 1965, Ser. No. 480,084
10 Claims. (Cl. 315—56)



1. An electrical circuit comprising:
(a) a source of electric current of low frequency,
(b) a plurality of light source devices operable on said current of low frequency, and said devices operable with improved performance on current of high-frequency;
(c) normally deactivated frequency-converting means operable to generate said current of high-frequency when actuated;
(d) means for initiating operation of any of said devices on said current of low frequency;
(e) current sensing means responsive to current through said initially operated devices to generate an electric output signal which is substantially constant regardless of the number of said devices initially operated;
(f) primary switching means and secondary switching means and the operating means for said switching means;
(g) said primary switching means, when in a closed position, actuating said frequency-converting means to cause the resulting generated high-frequency current to operate said initially operated devices;
(h) said secondary switching means, operable when open, to terminate electric current of said low frequency through said initially operated devices; and
(i) said operating means for said switching means responsive to the output signal of said sensing means to close said primary switching means, and at substantially the same time, open said secondary switching means.

3,373,314
TRANSISTORIZED IGNITION SYSTEM WITH A SATURABLE TRANSFORMER CONTROL AND VOLTAGE COMPENSATION MEANS

Ole K. Nilssen, Livonia, Mich., assignor to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware

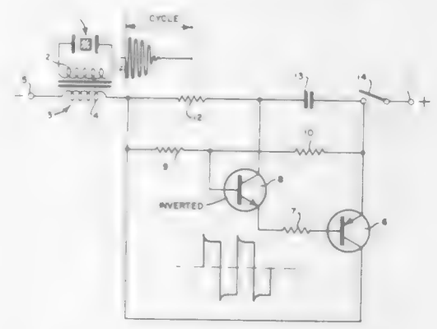
Filed June 25, 1965, Ser. No. 466,949
10 Claims. (Cl. 315—214)

An ignition system for an internal combustion engine in which means are employed for charging an electrical storage means from a source of electrical energy to a substantially constant value irrespective of fluctuations in the terminal voltage of the source of electrical energy. This electrical storage means is charged immediately prior to the requirement for ignition voltages from the electrical storage means. The means for charging the electrical storage means comprises a transistor or other solid state switching device, a saturable switching transformer or core and circuit means coupling the transistor and the saturable switching core or transformer for causing the transistor or other solid state switching device to be switched to the conducting state only during the time that the saturable switching transformer or core is switched from a steady state operating condition to one of its states of saturation. Circuit means are coupled to the source of electrical energy and the saturable switching transformer or core for biasing the saturable switching transformer or core toward one state of saturation as a function of the terminal voltage of the source of electrical energy and this means may comprise a winding coupling the saturable switching transformer or core and connected across the source of electrical energy.

3,373,315
FLASHER CIRCUIT FOR ELECTROLUMINESCENT CELLS

Robert Colman, 421 E. 80th St., New York, N.Y. 10021

Filed Oct. 23, 1965, Ser. No. 503,835
5 Claims. (Cl. 315—240)

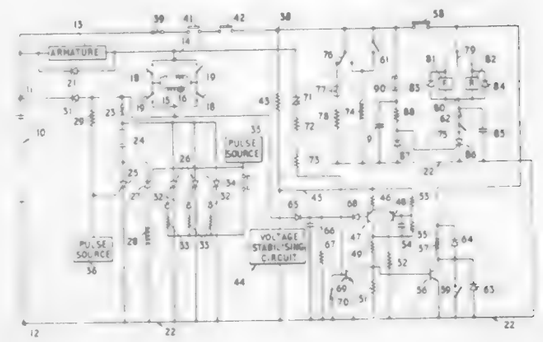


A high efficiency power supply which converts a DC voltage to an AC voltage for driving light sources and other loads.

3,373,316
ELECTRICAL CONTROL SYSTEM FOR AN INDUSTRIAL TRUCK

Norman Harold George Palmer, Sutton Coldfield, England, assignor to Eaton Yale & Towne Inc., a corporation of Ohio

Filed Oct. 26, 1965, Ser. No. 505,250
Claims priority, application Great Britain, Nov. 17, 1964, 46,719/64
8 Claims. (Cl. 317—13)

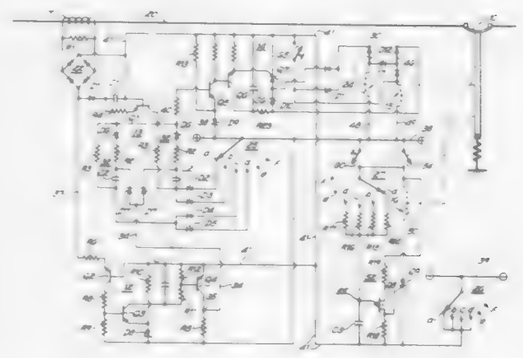


1. An electrical control system for an industrial truck, comprising an electric motor for driving the truck, the motor incorporating a field coil assembly, a first pair of contactors which when closed permit current flow through the field coil assembly in one direction, a second pair of contactors which when closed permit current flow through the field coil assembly in the opposite direction, a pair of terminals which in use are connected to the truck battery, at least one switching device controlling current flow from said pair of terminals through the contactors to the field coil assembly, means for switching said device on and off to provide a pulsating current flow from said terminals, a safety circuit for opening the contactors whenever a switching device is on for longer than a predetermined period of time, a testing circuit operable before the truck is moved to test the safety circuit, and means preventing closing of the contactors unless the safety circuit is first tested and is operative.

3,373,317
REPEATING CIRCUIT INTERRUPTER WITH IMPROVED STEP ADVANCE CONTROL MEANS

Clyde Gilker, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Jan. 17, 1966, Ser. No. 521,081
11 Claims. (Cl. 317—22)



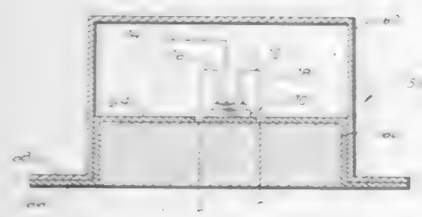
1. A repeating circuit interrupter including switch means in circuit with an electrical system, electroresponsive switch opening means, first circuit means coupled to said system for providing a control signal upon the occurrence of a predetermined condition in said system, second circuit means coupled to said switch opening means and to said first circuit means and being operable

to complete an energizing circuit to said switch opening means upon the occurrence of said control signal, step acting sequencing means operative to a plurality of stages to initiate a switch closing operation after each of a predetermined number of switch opening operations and to prevent further reclosure thereof after the next succeeding switch opening operation after said predetermined number, said step acting means including an electroresponsive actuating part coupled to said second circuit means for being energized upon the completion of an energizing circuit to said switch opening means, contact means coupled to said switch means and in circuit with said electroresponsive actuating part for open circuiting the latter upon the opening of said switch means and for interrupting said control signal, and static means coupled to said first circuit means for disabling the same when a switch opening operation is initiated.

3,373,318
ELECTRICAL COMPONENT MOUNTING INCLUDING THERMAL COUPLING AND ELECTRICAL ISOLATING MEANS

Howard H. Rogers, Woodland Hills, Calif., assignor to North American Aviation, Inc.

Filed June 25, 1965, Ser. No. 466,968
4 Claims. (Cl. 317—101)

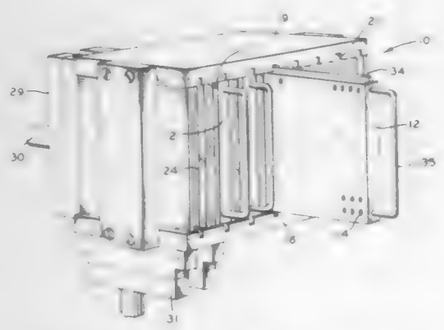


An electrically conductive mounting plate for mounting at least two electrical components such as transistors in heat conductive relationship. Leads of the elements extend from opposite portions of the plate and are separated physically by an intervening portion of the plate to achieve electrical isolation. The plate can act as a common connection for DC or low frequency components of a circuit.

3,373,319
CIRCUITRY SYSTEM

Joseph De Robertis, Yorktown Heights, N.Y., assignor to Sealectro Corporation, Mamaroneck, N.Y., a corporation of New York

Filed Apr. 22, 1966, Ser. No. 544,564
4 Claims. (Cl. 317—101)

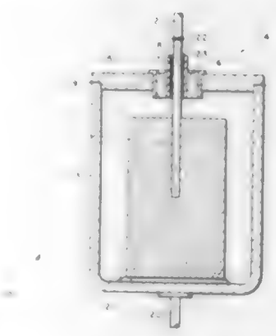


1. An electrical control system comprising spaced frame members having a plurality of pairs of opposed slots, conductor cards received in first and third pairs of said slots, each having a plurality of parallel conducting paths formed thereon, the paths on one card being at right angles to those on the second card of the pair and facing each other, and a connector board of insulating material positioned between said conductor cards in an intermediate pair of slots and having a plurality of rows of openings corresponding to lines of intersection of said conducting paths, and connectors having contacts at their ends which are spring urged outwardly and which are positioned in selected openings in the connector board, said contacts engaging a conducting path in each conductor card.

3,373,320
SOLID ALUMINUM CAPACITOR WITH ALUMINUM FELT ELECTRODES

Richard H. Krock, Peabody, and Gerhart P. Klein, Manchester, Mass., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Nov. 6, 1964, Ser. No. 409,389
14 Claims. (Cl. 317—230)

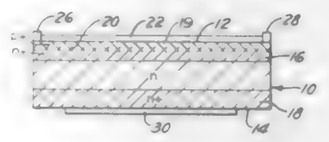


High surface area electrodes for electrolytic capacitors fabricated by pressing and sintering of attenuated aluminum fibers. The aluminum fibers are randomly arranged and intimately bonded at points of contact with adjoining fibers to provide a porous anode having a density up to about 75 percent of theoretical density.

3,373,321
DOUBLE DIFFUSION SOLAR CELL FABRICATION

Krishan S. Tarneja, Pittsburgh, Pa., and Mohammed S. Shaikh, Mountain View, Calif., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 14, 1964, Ser. No. 344,901
7 Claims. (Cl. 317—234)

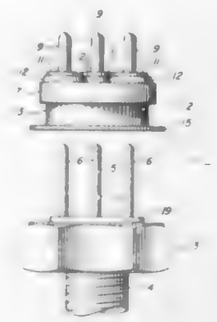


1. A semiconductor structure for use in solar cells comprising a body of semiconductive material of a first semiconductivity type and a high resistivity and having opposed major surfaces, a thin zone of the first semiconductivity type and of a low resistivity material in each of the major surfaces thereof, a zone thinner than said first zone of the first semiconductivity type, of opposite semiconductivity type and of low resistivity in surface of one of the thin zones of first semiconductivity type whereby a p-n junction is provided, a grid type ohmic contact on a portion of the surface of the thin zone of opposite semiconductivity type and a large area ohmic contact on the surface of the first conductivity type surface.

3,373,322
SEMICONDUCTOR ENVELOPE

Gary Hillman, Livingston, and Allan Davis, Hazlet, N.J., assignors to Mitronics Inc., Murray Hill, N.J.

Filed Jan. 13, 1966, Ser. No. 520,386
4 Claims. (Cl. 317—234)

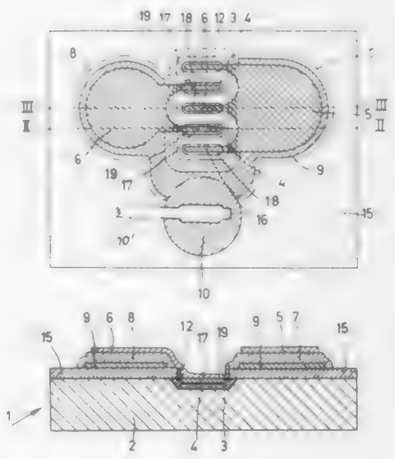


Semiconductor envelope comprises base, and ceramic header having spaced, flat metallized bosses with a perforation extending through each boss. Flanged nipples are brazed to the bosses. Prongs mounted to the base and electrically connected to various portions of the encapsulated semiconductor extend through the perforations into nipples and are crimped therein. Flanged collar on ceramic header is secured to base to complete envelope. Alternatively, nipples extend into perforations, and are brazed to the flat metallized bosses at the tops thereof.

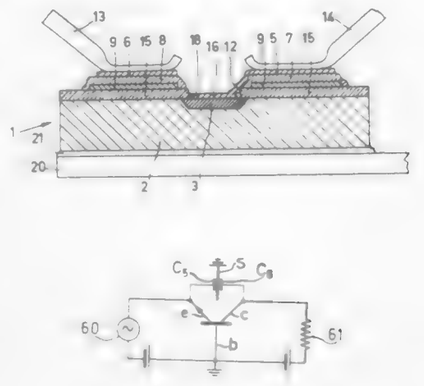
3,373,323
PLANAR SEMICONDUCTOR DEVICE WITH AN INCORPORATED SHIELD MEMBER REDUCING FEEDBACK CAPACITANCE

Gunther Carl Maximilian Eduard Wolfrum, Jacobus Johannes Rongen, Alfons Matthijs Reinier van Iersel, and Petrus Martinus Albertus Wilhelmus Moors, Nijmegen, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Continuation of applications Ser. No. 455,078, May 12, 1965, and Ser. No. 488,078, Sept. 17, 1965. This application Aug. 17, 1966, Ser. No. 572,938.
Claims priority, application Netherlands, May 15, 1964, 64—5,411; July 23, 1965, 65—9,551; Aug. 6, 1965, 65—10,237
15 Claims. (Cl. 317—235)



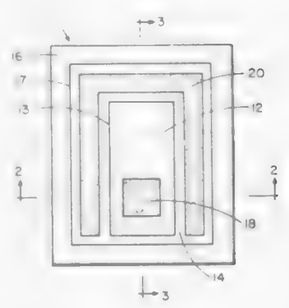
A planar semiconductor device incorporating an integrated shield underneath the contact pad for one of the semiconductor zones. A principal embodiment is a planar transistor in which the shield is a surface zone underneath the contact pad for the emitter or base zone. By connecting the shield to a point of potential, preferably the same point of constant potential as the other electrode of the emitter and base, the feedback capacitance of the transistor is substantially reduced enabling operation at much higher frequencies.



3,373,324
SEMICONDUCTOR DEVICE WITH AUTOMATIC GAIN CONTROL

John C. Haenichen, Scottsdale, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Dec. 5, 1962, Ser. No. 242,466
8 Claims. (Cl. 317—235)



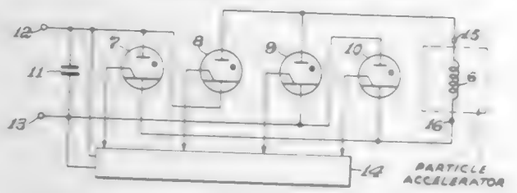
1. In a high frequency transistor including emitter, base and collector regions and having a power gain which is related to the maximum frequency at which the high frequency transistor will oscillate, the maximum frequency at which the transistor will oscillate being proportional to the square root of the value of the frequency at which the transistor current gain is unity divided by the product of the resistance of the base region and the capacitance of the collector region, the improvement comprising, a body of semiconductor material including said emitter region, said emitter region forming a planar rectifying junction within said semiconductor material and having an exposed major surface, and contact means operatively connectable to a source of high frequency signals, said contact means including a metallic conductor making ohmic contact with said emitter region in a contact area which is substantially less than the exposed area of said major surface for simultaneously causing a decrease in said frequency at which said high frequency transistor current gain is unity and an increase in said base resistance as the current through said contact means is increased, thereby decreasing said maximum frequency at which said high frequency transistor will oscillate.

3,373,325

METHOD OF INCREASING THE YIELD OF ACCELERATED PARTICLES IN A BETATRON OR SYNCHROTRON

Ladislav Šípek and Jan Dvořák, Prague, Czechoslovakia, assignors to Československá akademie věd, Prague, Czechoslovakia

Filed Oct. 24, 1963, Ser. No. 318,632
Claims priority, application Czechoslovakia, Nov. 2, 1962, 6,206/62
4 Claims. (Cl. 317—262)



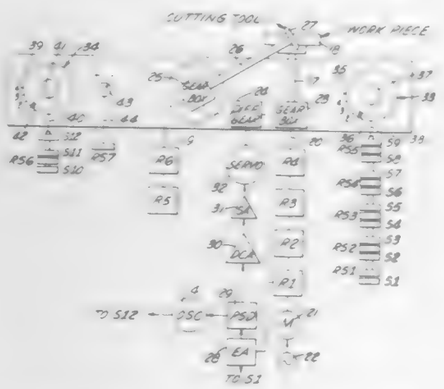
1. In combination in a particle accelerating organization, particle accelerating means including winding means for generating a unidirectional magnetic field, and energizing means connected to said winding means for energizing said winding means with unidirectional current pulses spaced from each other by a determined time interval, said energizing means comprising a voltage source for supplying an alternating potential having a determined frequency which is half the repetition rate of said current pulses, said alternating potential being characterized by maximum values in a first and second reference polarity, first controlled switching means for completing a first conduction path between said voltage source and said winding means, second controlled switching means for completing a second conductive path between said voltage source and said winding means, and control means for energizing said first and second switching means between the times when said voltage source is supplying a peak voltage in said first and second, and said second and first reference polarities, said peak voltage determining the duration of said determined time interval.

3,373,326

POSITION MEASURING TRANSFORMER SYSTEM FOR MULTIPLE SHAFT SYNCHRONIZATION

Clair L. Farrand, Bronxville, N.Y., assignor to Inductosyn Corporation, Carson City, Nev., a corporation of Nevada

Filed June 25, 1964, Ser. No. 377,874
12 Claims. (Cl. 318—18)



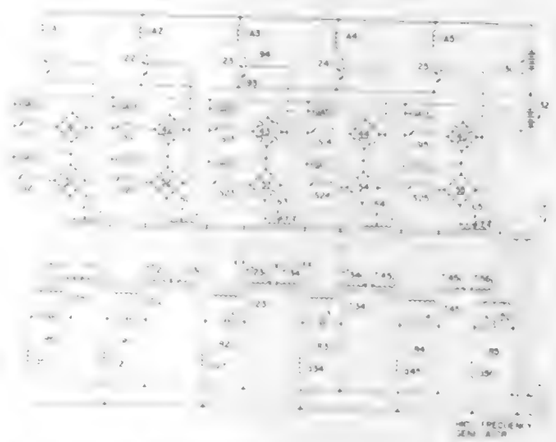
Rotary position measuring transformers such as resolvers, selsyns and Inductosyns (trademark) and others have been used with relatively movable members having two or more poles. With two poles, one cycle of the coupling wave is produced between the windings of the members for each revolution. This has been designated a one-speed field. When a plurality of poles are used, such as, for example, fifty-four poles, producing twenty-seven cycles of the coupling wave per revolution, this has been designated a twenty-seven-speed device. Hence, speed as applied to a position measuring transformer represents the number of cycles of coupling wave per revolution.

3,373,327

CONTROL CIRCUIT FOR CRYOGENIC MOTORS

Dieter L. Teuber, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

Filed Sept. 22, 1964, Ser. No. 398,461
8 Claims. (Cl. 318—138)



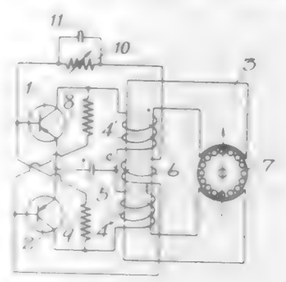
1. A motor comprising a plurality of coil means; a rotor mounted for rotation; first circuit means for sensing the direction of change in the inductivity of each coil means due to rotation of said rotor; said first circuit means having a plurality of control windings, each wound around and associated with different pairs of adjacent coil means; said control windings being so arranged that a difference in inductivity of any two control windings associated with one of said coil means is proportional to the inductivity of said one coil means, control circuit means having inputs connected to outputs of said first circuit means; and said control circuit means having outputs connected to the coil means so as to control the energization of said coil means.

3,373,328

INDUCTION-MOTOR TYPE TRANSISTOR MOTOR

Nobuhito Hobo, Kariya-shi, Japan, assignor to Nippon Denso Kabushiki Kaisha, Kariya-shi, Japan

Filed Mar. 10, 1965, Ser. No. 438,509
2 Claims. (Cl. 318—138)



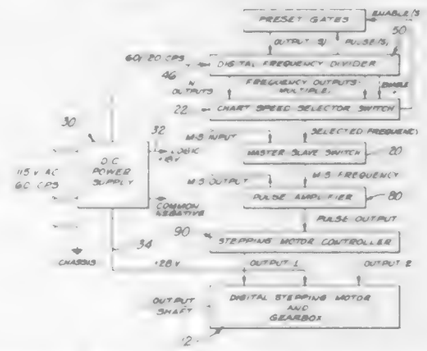
1. In an induction-motor type transistor motor, an induction motor having a stator and a rotor, a stator winding on said stator, said stator winding being divided into two spaced segments, connected together, a tap connection connected to the connection between said two spaced segments, an auxiliary winding wound on said stator between said two segments, a pair of transistors connected in push-pull for relaxation oscillation, a first resistor connected between the base of a first one of said transistors and the collector of a second one of said transistors, a second resistor of resistance equal to the resistance of said first one of said resistors connected between the base of the second one of said transistors and the collector of the first one of said transistors, the emitters of said two transistors being connected together, a source of direct current connected between said tap connection between said spaced segments and the emitters of said two transistors, and the two ends of said auxiliary winding being respectively connected to the bases of said two transistors and the free ends of said two segments of said stator winding which are not connected together being respectively connected to the two collectors of said pair of transistors.

3,373,329

DEVICE FOR DRIVING RECORDING CHARTS AT ANY ONE OF A PLURALITY OF PREDETERMINED SPEEDS

Robert Thomas Kaiser, San Diego, Calif., assignor, by mesne assignments, to Kinetics Corporation of California, Solana Beach, Calif., a corporation of California

Filed Mar. 31, 1965, Ser. No. 444,161
8 Claims. (Cl. 318—305)



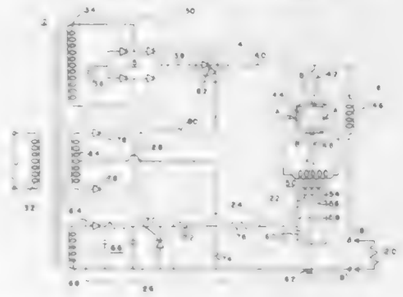
A frequency divider has a signal generator connected thereto, and is connected through a frequency selector switch to a master-slave switch. In master position, the master-slave switch connects the selector switch determined frequency to the controller of a stepping motor arranged for driving a chart, and in slave position, said master-slave switch connects an outside determined frequency therethrough in similar manner. A group of similar devices, one in the master condition and the others in the slave condition, with the stepping motor controllers thereof connected to the selector switch determined frequency of the master device, will drive a group of charts at synchronized speeds.

3,373,330

POWER REGULATOR

Donald F. O'Brien, 55 Fairview Ave., Watertown, Mass. 02172

Filed Oct. 15, 1964, Ser. No. 404,110
19 claims (Cl. 318—308)



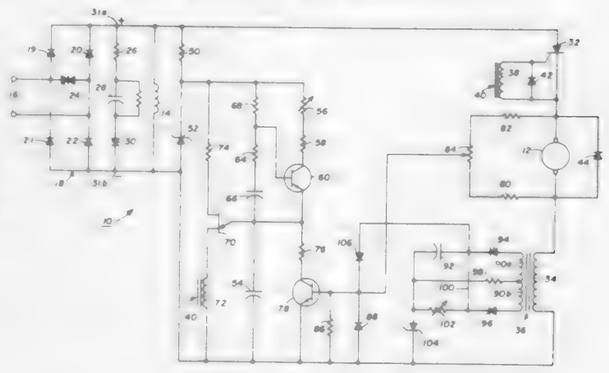
An alternating current-to-alternating current power regulator for an alternating current consuming load having a wide range of impedance variations wherein the power components supplied to or extracted from the load are sampled and applied as inputs to a combiner such as a Hall effect device. The output of the combiner is utilized to control the conduction angle of the alternating current power input for the load.

3,373,331

D.C. MOTOR CONTROL CIRCUIT

Ronald C. Dow, Garland, Tex., assignor to Power Engineering, Inc., Dallas, Tex., a corporation of Texas

Filed Feb. 23, 1965, Ser. No. 434,364
8 Claims. (Cl. 318—331)



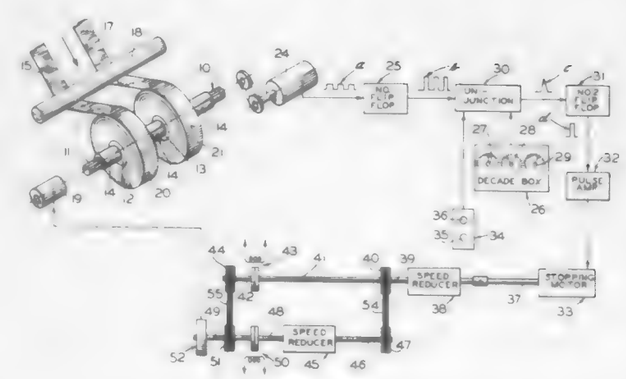
A control circuit for a D.C. motor driven by a rectified A.C. power supply including an armature power circuit having a control switch in series with the armature. A reference capacitor is connected in a series discharge loop including a breakover device which conducts when the charge potential on the reference capacitor exceeds a predetermined value, in order to energize the control switch. A first circuit including a transistor is connected to the power supply and reference capacitor for charging the reference capacitor at a progressively increasing rate to progressively advance the point at which the control switching device is energized. A second circuit including a second transistor connected to the capacitor and armature power circuit decreases the charging rate of the reference capacitor in response to increases in the voltage across the armature above a predetermined value and in response to the current through the armature power circuit exceeding a predetermined value.

3,373,332

APPARATUS FOR AUTOMATICALLY CONTROLLING THE SPEED OF A REWIND MANDREL

Oluf Olsen, Cranford, N.J., assignor to John Dusenbery Company, Inc., Clifton, N.J., a corporation of New Jersey

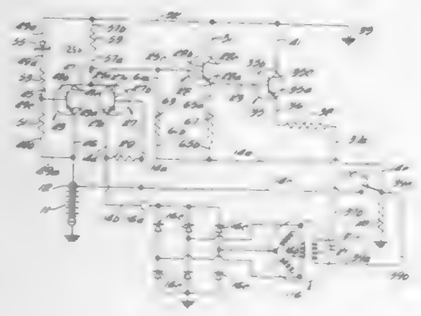
Filed June 25, 1965, Ser. No. 467,067
11 Claims. (Cl. 318—396)



Apparatus for automatically reducing the speed of rotation of a motor-driven mandrel in correspondence with the increased diameter of a roll of material wound upon

a core carried by the mandrel. A switching device, mechanically-coupled to the mandrel, produces voltage pulses upon rotation of the mandrel. A predetermined number of the voltage pulses are converted into a control voltage which actuates a control device for effecting a predetermined decrease in the speed of the motor.

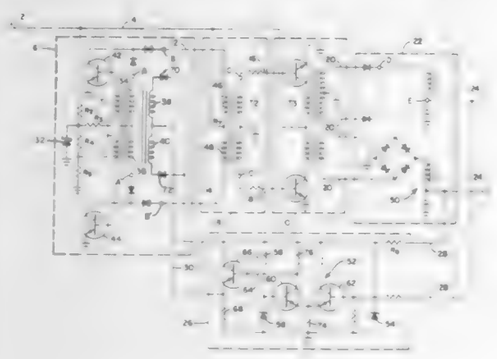
3,373,333
VOLTAGE AND CURRENT REGULATOR FOR AUTOMOBILES
Gary R. Eckard, Louada Drive, Rte. 5, Newark, Ohio 43055
Filed Oct. 20, 1965, Ser. No. 498,378
12 Claims. (Cl. 320—32)



1. A battery voltage regulating device having an electrical current producing device (1) driven by an engine and (2) connected electrically to the battery normally to continuously charge said battery, in combination with

means comprising a transistor for controlling current through the field winding of said current producing device, means comprising a transistor controlled solely by the voltage of the battery for at times limiting the operation of the electrical current producing device and means comprising a transistor controlled solely by the current being produced by said current producing device for limiting the operation of the electrical current producing device.

3,373,334
REGULATED D.C. TO D.C. POWER SUPPLY
Eugene W. Geisz, South St. Paul, and Walter C. Timm, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 1, 1965, Ser. No. 459,991
2 Claims. (Cl. 321—2)



A D.C. to D.C. converter which regulates output voltage against input voltage variations by providing a saturable reactor which produces square wave voltage pulses which are pulse-width modulated depending upon the amplitude of the input supply voltage thereby providing an output pulse which has a constant voltage-time product. The D.C. output of the power supply is regulated against load variations by providing a transformer-coupled oscillator whose frequency determines the output voltage by driving the reactor and which frequency is changed in accordance with a change in the output voltage.

3,373,335
STACKED ASSEMBLY OF RECTIFIER UNITS INCORPORATING SHUNT CAPACITORS
Harold B. Rosenberg, New Rochelle, N.Y., assignor to Electronic Devices, Inc., Yonkers, N.Y., a corporation of Delaware
Filed Dec. 22, 1964, Ser. No. 420,341
1 Claim. (Cl. 321—11)

An integrated assembly of rectifier units and protective shunt capacitors wherein a row of such units has electrodes interposed therebetween to connect the units in series, the electrodes having larger dimensions than said units to define an annular area which surrounds each unit, this area being occupied by an annular dielectric body which forms with the adjacent electrodes a capacitor in shunt relation with the unit and having a value acting to protect the unit from voltage surges.

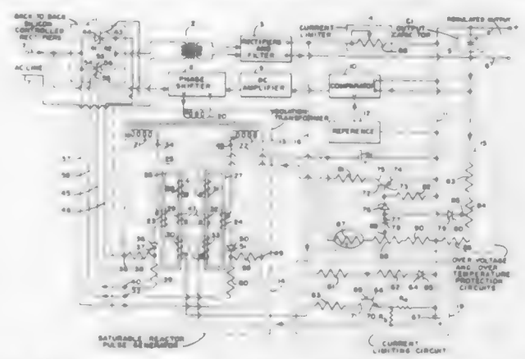
3,373,336
SEMICONDUCTOR-RECTIFIER DEVICE FOR HIGH-VOLTAGE AND HIGH-FREQUENCY
Ekkehard Schillmann, Heinz Eggert, and Reinhard Schatz, Berlin, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany
Filed Mar. 22, 1965, Ser. No. 441,460
Claims priority, application Germany, Mar. 25, 1964, S 90,191
3 Claims. (Cl. 321—11)

In a high voltage high frequency rectifying circuit for voltages above 5 kv. and frequencies above 10 kc., a rectifier connecting a voltage supply source to the DC output terminals comprises a column of semiconductor rectifier members stacked upon each other. Each of the rectifier members has an active rectifying area which is $^{1}/_{100}$ to $^{1}/_{4}$ of its total surface. The number of semiconductor rectifier members is so small that the blocking losses of the rectifier are of substantially the same order of magnitude as the forward losses.

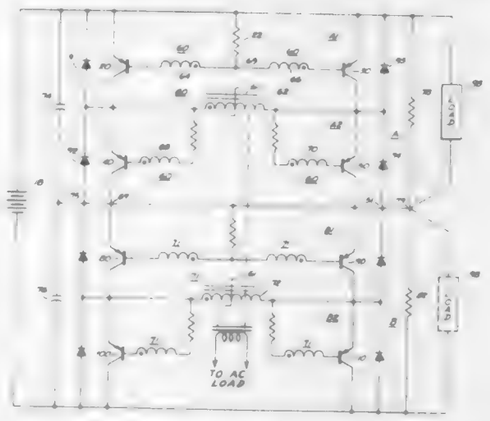
3,373,337
INPUT REGULATED POWER SUPPLIES
Han-Min Hung, Bayside, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York
Filed June 16, 1965, Ser. No. 464,367
4 Claims. (Cl. 321—16)

1. In a regulated power supply, the combination of, a power transformer including primary and secondary windings, rectifier and filter means for producing a direct current connected to said secondary, a pair of back-to-back connected silicon controlled rectifiers connected in

series with said primary for controlling alternating current flow from an alternating current source to said primary, a saturable reactor pulse generator including two saturable reactors coupled to said silicon controlled rectifiers, pulse responsive means coupling said saturable reactors polled to reset one of said reactors in response to a pulse in the other, phase shift means connected to receive alternating current from said alternating current source and coupled to said saturable reactor to control the phase of pulses generated thereby, and a source of phase control signals coupled to said phase shift means including voltage comparison means connected to compare a source of reference voltage with at least a portion of said direct current.



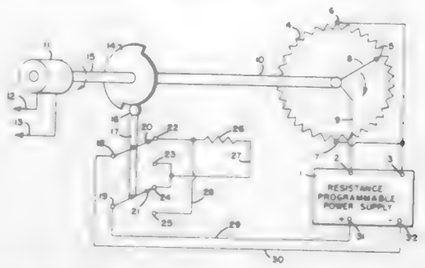
3,373,338
POWER CONVERSION SYSTEM WITH MAGNETICALLY FORCED VOLTAGE SHARING FOR THE SWITCHING DEVICES
Philip D. Corey and Armistead L. Wellford, Waynesboro, Va., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 260,257, Feb. 21, 1963. This application Feb. 2, 1967, Ser. No. 613,684
7 Claims. (Cl. 321—27)



A transistorized inverter employing a single multiple-winding transformer to achieve lossless forced collector voltage sharing, permitting improved operation of the oscillator from very high voltage DC power sources with high efficiency.

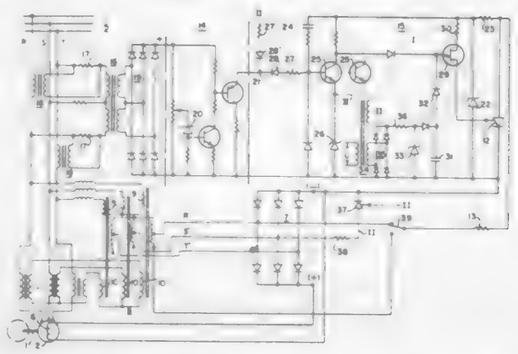
3,373,339
GENERATING ALTERNATING CURRENT BY REVERSING A DIRECT CURRENT SOURCE
Paul Birman, Flushing, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York
Filed June 7, 1965, Ser. No. 461,982
4 Claims. (Cl. 321—49)

In accordance with the present invention AC power may be derived from a programmable DC power supply generally capable of supplying unidirectional programmed output current in accordance with the command of a unidirectional programming means. The power supply and its program are to create DC output current starting and ending at zero. The invention also provides for reversing the polarity of the output by means of a suitable



switch synchronized and phased with the programming means to effect the polarity reversal at the zero output points. In this way no transients or discontinuities are created in the output current and the output current is made bidirectional or in other words an AC output is created from unidirectional DC current.

3,373,340
VOLTAGE REGULATING SYSTEM FOR SYNCHRONOUS GENERATORS
Rudolf Dirr and Hermann Waldmann, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed June 28, 1965, Ser. No. 467,203
Claims priority, application Germany, June 27, 1964, S 91,739
13 Claims. (Cl. 322—28)

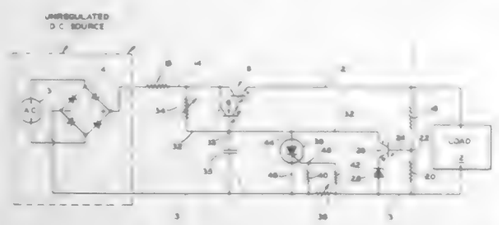


A voltage reglating system for a self-excited synchronous generator comprises a bridge network of uncontrolled rectifiers. A transformer is connected to the network and supplies mutually superimposed base and load-responsive shares of current from the generator to the network. A comparator provides a control voltage dependent upon the departure of the generator voltage from a datum voltage. A controlled rectifier has a control circuit connected to the comparator and energized by the control voltage of the comparator to be phase controlled by the departure of the generator voltage from the datum voltage. The anode of the controlled rectifier is connected to the secondary phase of the transformer via a resistor. The cathode of the controlled rectifier is connected to the negative pole of the bridge network.

3,373,341
ELECTRICAL NETWORK FOR PREVENTING EXCESSIVE LOAD CURRENT
Harry B. Wattson, Rutherford, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,264
8 Claims. (Cl. 323—9)

An electrical network for preventing excessive current from flowing to a load and including a normally nonconductive silicon controlled rectifier connected across the

power supply to the load. When excessive load current develops, the silicon controlled rectifier is rendered conductive which in turn cuts off a regulating transistor to

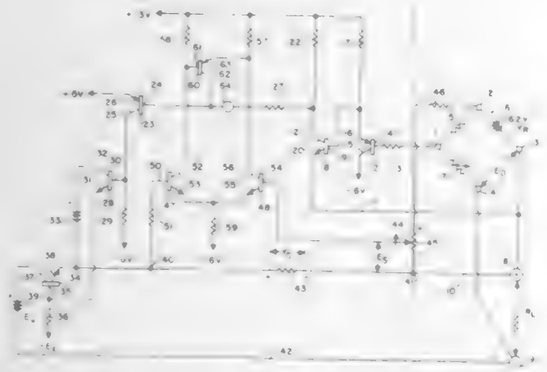


prevent current flow to the load. The silicon controlled rectifier is automatically cut off when the load current returns to normal thereby returning current flow to the load.

3,373,342
CURRENT CUTOFF CIRCUIT FOR REGULATED POWER SUPPLY

Joseph R. Gately, Woodside, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York

Filed Feb. 3, 1966, Ser. No. 524,789
7 Claims. (Cl. 323—9)



1. In a direct current voltage regulating system, the combination of, a source of voltage to be regulated, output terminals for the regulated voltage, a signal responsive series pass device and a current sensing means connected in series between said source and one of said output terminals, a source of reference voltage, means for comparing the output voltage across said output terminals with said reference voltage to provide an error signal in accordance with the difference therebetween, a multistage transistor amplifier for amplifying said error signal to provide an augmented signal to control said pass device, a resistor in series between two stages of said amplifier, and means responsive to current of greater than a predetermined magnitude in said current sensing means including a transistor connected to said resistor for passing current in a predetermined direction through said resistor and thereby to at least partially disable said amplifier between said resistor and said series pass device.

3,373,343
PRESSURE-ELECTRIC TRANSDUCERS WITH PERFORMANCE STABILIZATION

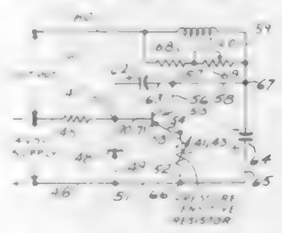
James R. Bailey, Milwaukee, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Nov. 24, 1965, Ser. No. 509,582
14 Claims. (Cl. 323—19)

1. In combination with a pressure-electric transducer having an electric circuit and having input signal mechanism which includes pressure-responsive electric contact means, the resistance of which decreases in accordance with pressure thereon to thereby effect the voltage drop across said contact means, said transducer including magnetic feedback means having a coil in said circuit, control means including said pressure-responsive contact means controlling the flow of current through said feedback coil, the improvement comprising:

voltage limiting means connected in parallel with said contact means and feedback coil and including a diode;

transistor means having a first terminal connected to the negative side of said contact means and having a base, there being a connection between said base and the negative side of said diode;



the positive side of said diode being connected to the positive terminal of said contact means to cause a drop in voltage across said contact means whereby a constant low voltage drop across the contact means is maintained to stabilize the transducer performance; and

means between the feedback coil of the transducer and another terminal of said transistor for activating said feedback coil.

3,373,344
VOLTAGE REGULATOR CIRCUIT INCLUDING A STORAGE CAPACITOR AND A SWITCHING MEANS RESPONSIVE TO A VOLTAGE DIFFERENCE FOR CHARGING THE CAPACITOR

Harold G. Seer, Jr., Wilmington, Del., assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 14, 1964, Ser. No. 396,075
9 Claims. (Cl. 323—22)

An unregulated source supplies current to a capacitor by way of a switching means. The capacitor acts as a current supply for a voltage regulator. Means are provided to turn the switching means off only when the voltage of the source exceeds the voltage of the output of the regulator by more than a critical value.

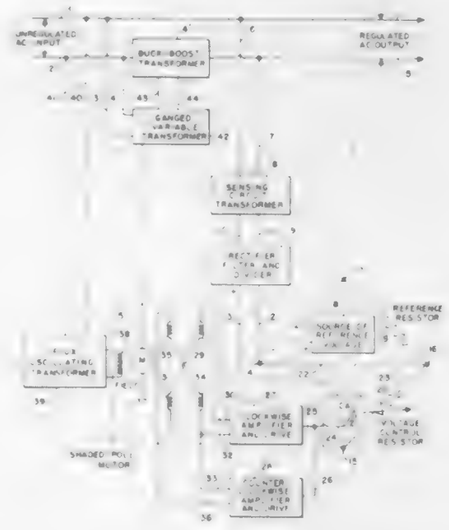
3,373,345
ALTERNATING CURRENT LINE REGULATOR

Han-Min Hung, Bayside, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York

Filed Feb. 3, 1966, Ser. No. 524,804
6 Claims. (Cl. 323—45)

1. In an alternating current line voltage regulating system the combination of, input terminals for receiving alternating current to be regulated, output terminals to transmit regulated alternating current, a buck-boost transformer connected in series between one of said input terminals and one of said output terminals for increasing

or decreasing the alternating current voltage between said input and output terminals, programmable variable transformer means connected to said input terminals and said buck-boost transformer for providing input voltage to said buck-boost transformer, a shaded pole reversible induction motor including a field winding, clockwise drive shading coils and counterclockwise drive shading coils, mechanical coupling means between said motor and said variable transformer to program said variable transfomer in accordance with the rotation of said motor, means for exciting said field, means for sensing the voltage across said output terminals, means for rectifying said sensed

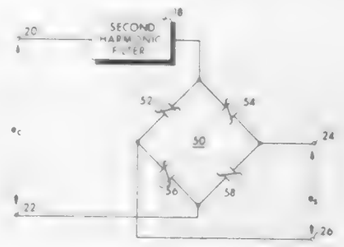


voltage to provide a direct current voltage representative of said sensed voltage, means for comparing said direct current voltage with a reference voltage to provide an error signal of a polarity and magnitude in accordance with the difference therebetween, means for amplifying said error signal to provide an enhanced error signal, signal responsive means for energizing said clockwise drive shading coils, signal responsive means for energizing said counterclockwise drive shading coils, and coupling means for applying said enhanced error signal to the last two said signal responsive means to provide rotation of said motor in accordance with the polarity and magnitude of said error signal.

3,373,346
LINEAR REACTIVE VOLTAGE CONTROL NETWORKS

Paul R. Johannessen, Lexington, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Feb. 25, 1965, Ser. No. 435,252
5 Claims. (Cl. 323—75)

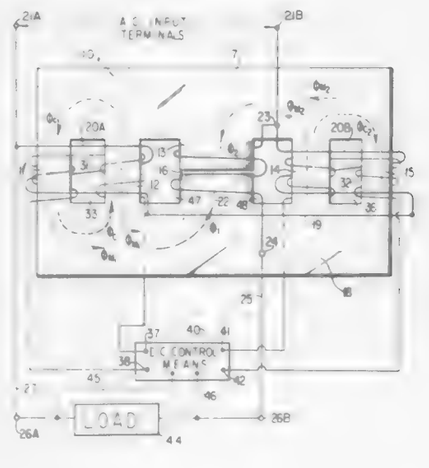


4. An electrically controllable, linear reactive network comprising, four varactors having identical square law characteristics and connected in a bridge configuration with a pair of input terminals located respectively at the first and third junctures between adjacent varactors, and a pair of output terminals located respectively at the second and fourth junctures between adjacent varactors, a source of direct current control voltage, a band rejection filter connected in series with said source of control voltage and the input terminals of said bridge configuration and having a high admittance at the second harmonic of the operating frequency, and means connecting the output terminals of said bridge configuration to a utilization circuit.

3,373,347
AC POWER REGULATOR WITH MAGNETIC AMPLIFIER

Theodore F. Maka, Winfield, Ill., assignor to Basic Products Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 21, 1965, Ser. No. 426,820
4 Claims. (Cl. 323—89)



A power modulator for regulating an A.C. voltage or current delivered to a load in which a main winding connected across the A.C. input comprises two series connected sections each mounted on spaced apart legs of a shell type core structure. A buck-boost auxiliary winding adapted to be connected in series with the load is wound on a central or intermediate leg having an air gap therein and so positioned as to receive magnetic flux in opposite directions from the spaced-apart legs. Separate D.C. control windings for each of the spaced-apart legs control the level of magnetic saturation or reluctance in the legs thereby to control the flux distribution within the core.

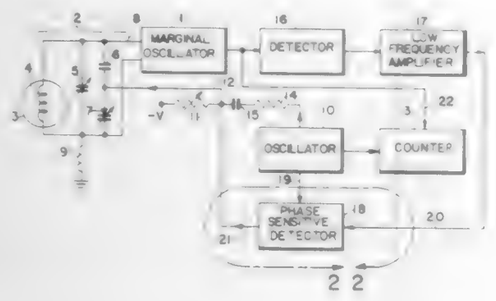
3,373,348
NUCLEAR QUADRUPOLE RESONANCE THERMOMETER AND/OR TEMPERATURE CONTROL

Jacques P. Vanier, Beverly, Mass., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Continuation of application Ser. No. 383,568, July 20, 1964. This application July 3, 1967, Ser. No. 651,046
10 Claims. (Cl. 324—.5)

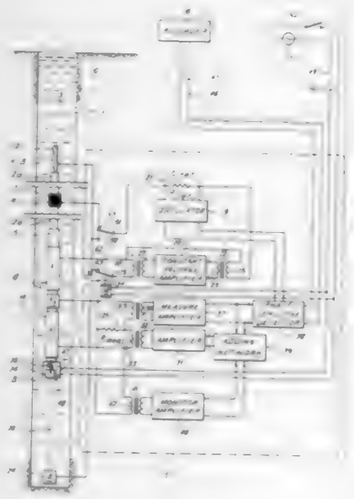
1. A quadrupole reasonance temperature responsive apparatus including, means for producing and applying a characteristic reference frequency signal to a temperature sensitive quadrupole resonance material for exciting quadrupole resonance of the material, means for detecting the quadrupole resonance produced in the temperature sensitive quadrupole resonance material, means for deriving a feedback control signal from the detected resonance

of the resonance material which varies in accordance with the difference between the reference frequency and the quadrupole resonance frequency, and means responsive to the feedback control signal for counteracting changes



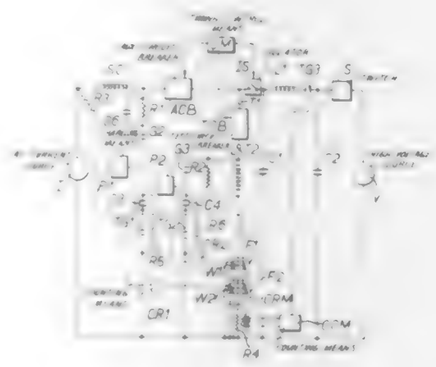
in frequency determinative resonance conditions which changes tend to increase the difference in frequency between said reference frequency of said resonance exciting means and the resonance frequency of the quadrupole resonance material.

3,373,349
WELL LOGGING METHODS AND APPARATUS FOR SOLVING THE POTENTIAL REFERENCE PROBLEM IN ELECTRODE TYPE INVESTIGATING APPARATUS
Denis R. Tanguy, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed July 14, 1965, Ser. No. 471,808
13 Claims. (Cl. 324—10)



In accordance with an illustrative embodiment of the invention, a focused electrode array is maintained at a relatively constant voltage with respect to a remote potential reference electrode located above the focused electrode array. For investigating most of the borehole, a current return electrode is located below the constant voltage electrode array so that the constant voltage electrodes can electrically shield the potential reference electrode from the current return electrode. To allow for investigating the bottom portion of the borehole, the lower current return electrode is held in a close proximity position below the focused electrode array and a current return electrode located above the focused electrode array is utilized for returning the current emitted by the focused electrode array. Then, when the focused electrode array is a sufficient interval from the bottom of the borehole, the lower current return electrode is released to fall a fixed distance below the focused electrode array. The current return path is then switched from the upper current return electrode to the lower current return electrode for investigating the remainder of the borehole.

3,373,350
APPARATUS FOR TESTING THE ARC CAPABILITY OF AN ELECTRICAL CIRCUIT BREAKER
Michael Peter Reece, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Continuation-in-part of application Ser. No. 261,283, Feb. 27, 1963. This application June 9, 1966, Ser. No. 556,479
Claims priority, application Great Britain, Mar. 7, 1962, 8,815/62
4 Claims. (Cl. 324—28)



An arrangement for testing the arc interrupting capability of an electrical circuit breaker at rated kilovolt amperes without the expenditure of a corresponding amount of power by means of a first circuit connected to apply a large main test current at low voltage to the arc interrupting contacts of the circuit breaker and a second circuit connected to apply to these contacts a small additional test current followed by a high voltage surge simulating a recovery-voltage transient at the last current zero of the main test current before the arc is interrupted, characterized by the provision of a third circuit which is operable at a preceding current zero of the main test current to apply to the arc interrupting contacts a current pulse which is effective to change the polarity of the current in the arc drawn between these contacts sufficiently rapidly to prevent the arc from being extinguished at such preceding current zero.

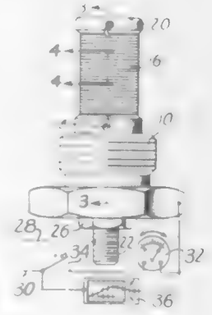
3,373,351
PROBE TO INDICATE RESISTANCE CHANGES IN ION EXCHANGE MATERIAL IN A WATER SOFTENER
Stanley F. Rak, Mundelein, Ill., assignor to Culligan, Inc., Northbrook, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 583,164, Sept. 30, 1966. This application Feb. 16, 1967, Ser. No. 629,049
20 Claims. (Cl. 324—30)

A nonconductive resistance sensing probe unit having spaced electrodes in the probe; which probe is inserted into the top of a resin-filled water conditioning tank and positioned therein adjacent the bottom of the resin bed

to sense the change in resistance of the resin bed as it is exhausted. Leads from the electrodes extend up through

the probe to the exterior of the tank to actuate a control circuit for regeneration of the resin in the tank.

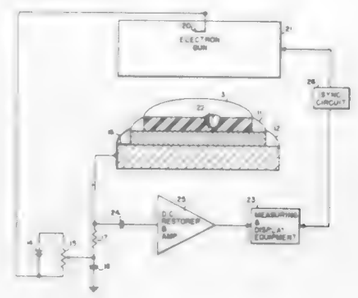
3,373,352
MAGNETIC CHIP GAUGE UTILIZING A COIL WHOSE TURNS ARE SHORT CIRCUITED BY CHIPS
Wilfred J. Huigens, Clarinda, Iowa, assignor to Lisle Corporation, Clarinda, Iowa, a corporation of Iowa
Filed Aug. 2, 1965, Ser. No. 476,587
8 Claims. (Cl. 324—41)



A magnetic chip detector of the monitoring type having a wire so disposed that spaced portions may be short circuited by the deposit of ferrous particles thereon which are attracted by the magnet of the detector. Means is provided for measuring the flow of electricity through the wire to give an indication of the quantity of ferrous particles collected by the magnet.

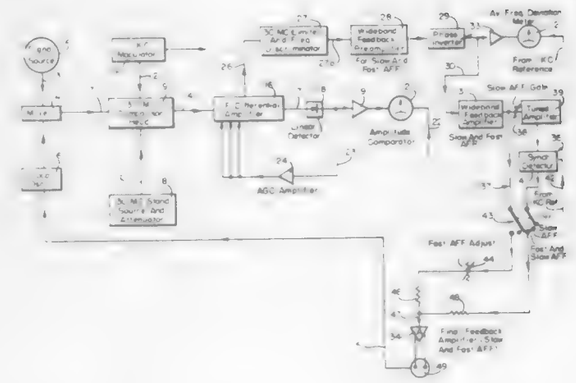
3,373,353
ELECTRON BEAM SCANNING SYSTEM FOR QUALITY CONTROL OF MATERIALS
Franklin H. Harris, Accokeek, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 30, 1965, Ser. No. 491,847
5 Claims. (Cl. 324—54)

A quality control system for testing the dielectric strength of materials by measuring the thickness thereof utilizing a beam of electrons which are scanned over the material to be tested. A conductive film is positioned on the side of the material to be tested opposite from the side which is scanned by electrons and is positively charged to create an electric field across the test material



so that a current flows through points of the material which is proportional to the thickness of the material at these points.

3,373,354
VOLTAGE RATIO METER WITH FAST AND SLOW AUTOMATIC FREQUENCY FOLLOWER
Gunther U. Sorger, Rockville, and Bruno O. Weinschel, Bethesda, Md., assignors to Weinschel Engineering Co., Inc., Gaithersburg, Md., a corporation of Delaware
Filed Aug. 20, 1964, Ser. No. 390,894
5 Claims. (Cl. 324—58)

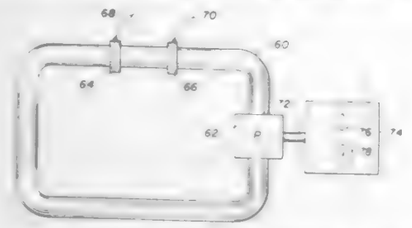


A high-frequency voltage ratio meter system for use in the range up to 4,000 megacycles having long time-constant means for maintaining the average frequency of an input intermediate frequency signal at the same value as the frequency of a standard source, and also having fast time-constant means for continuously and instantaneously correcting the frequency of the intermediate frequency for very fast deviations of the frequency of the input signal so as to at all times maintain an accurate comparison with the reference signal.

3,373,355
APPARATUS FOR MEASURING ELECTRIC FIELD STRENGTH UTILIZING AN ELECTROVISCOUS FLUID
Donald L. Klass, Barrington, and Robert M. Haines and Thomas W. Martinek, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Jan. 17, 1964, Ser. No. 338,329
1 Claim. (Cl. 324—92)

The invention relates to a method for determining the strength of an electric field comprising subjecting an electroviscous fluid having predetermined electric field-in-

duced viscosity characteristics to the electric field while simultaneously subjecting the fluid to shear at a constant

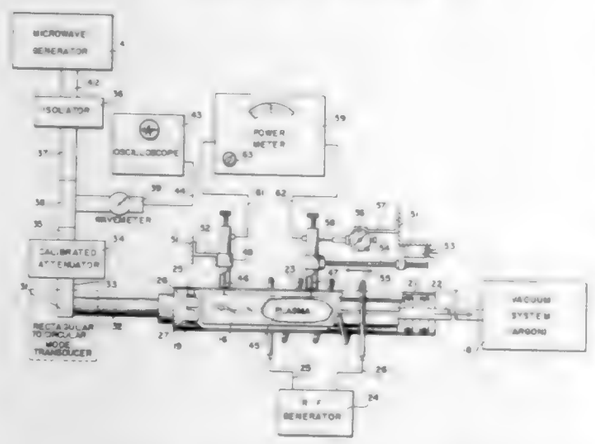


rate, and correlating the shear resistance of the fluid with said predetermined characteristics.

3,373,356
HOLDING CURRENT METER FOR SCR OR THE LIKE
Hans R. Camenzind, Lexington, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 23, 1966, Ser. No. 536,929
3 Claims. (Cl. 324—158)

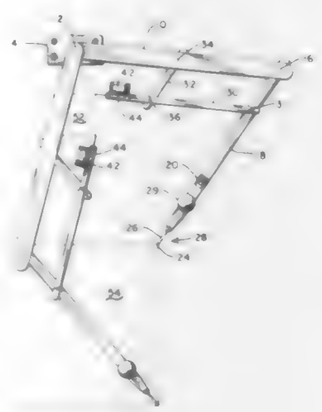
Current from an AC source is supplied to an SCR having a know resistance connected to its anode. The SCR is triggered during positive half cycles of the AC wave. A peak-reading voltmeter is triggered by the rise in anode potential as the AC wave drops to the SCR holding current; the voltmeter remains triggered for the balance of the positive half-cycle. Holding current is computed from the peak voltage thus found and from the value of the known resistance.

3,373,357
CONTROLLED MODE PLASMA DIAGNOSTIC APPARATUS
Peter P. Keenan, Van Nuys, and Frank L. Kelly, Granada Hills, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Jan. 4, 1965, Ser. No. 422,959
10 Claims. (Cl. 324—58.5)



An electrodeless discharge plasma is generated by induction in a low-pressure gas confined within a slotted circular waveguide. Microwave energy at a selected probing frequency is then propagated in the TM_{01} mode through the waveguide, and hence through the plasma, to permit measurement of various plasma phenomena. Propagation characteristics, plasma density profiles and other measurements are obtained by means of a fixed antenna probe and a movable antenna probe. Both of these probes extend through the slotted wall of the waveguide and provide signals to ancillary indicating devices.

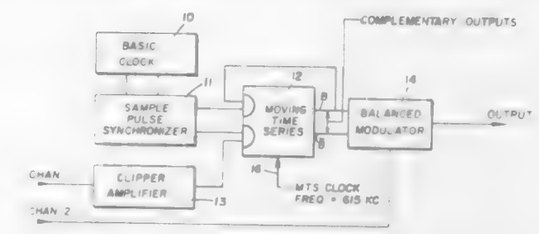
3,373,358
PANTOGRAPH PROBE SYSTEM FOR TESTING ELECTRICAL CIRCUITS
John M. Wagner, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,893
2 Claims. (Cl. 324—72.5)



A device for testing electrical circuits which includes a pair of independently movable pantographic devices each having a long arm and a needle arm. Each long arm has a test probe end, and each needle arm has a contact point end. A master template having a plurality of reference points thereon is positioned under the test probe end and an electrical circuit to be tested is positioned under the contact point end. The electrical circuit to be tested has a plurality of test points corresponding to at least a like plurality of the reference points on said template whereby the contact points are positioned above the selected test points as determined by the positions of the test probes with respect to the reference points on said template. When the proper positions are obtained, a switch mounted on at least one of the pantographic devices is actuated which energizes a solenoid mounted on each of the devices. Each solenoid has an extended armature connected to a respective contact point whereby, when the switch is actuated, the solenoids cause the contact points to engage the test points located thereunder. Appropriate meters or lights connected to the contact points indicate the condition of the circuit under test.

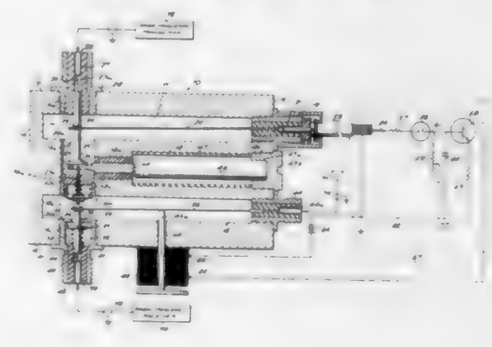
3,373,359
ONE-SAMPLE REAL TIME CROSS-CORRELATOR
Cabell N. Pryor, Jr., Silver Spring, Md., and Charles R. Greene, Jr., Santa Barbara, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 20, 1964, Ser. No. 405,310
2 Claims. (Cl. 324—77)

A hybrid correlator which is a compromise between a polarity-concidence correlator and a multiplier correlator. The hybrid correlator multiplies one channel of amplitude information with another channel of time compressed polarity quantized information. The product of this multiplication appears at the output as a number of



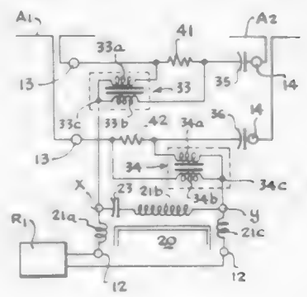
real time correlation delay points that are based on an integration time equal to the sample period.

3,373,360
AUTOMATIC COAXIAL SWITCH
Curtis L. Wilson, 3103 Elizabeth, Space 25, Pueblo, Colo. 81003
Filed Jan. 27, 1966, Ser. No. 523,476
3 Claims. (Cl. 325—22)



1. An automatic coaxial transmit-receive switch comprising in combination a rectangular metal block provided with first and second spaced longitudinal bores extending from the front surface of said block to approximately the rear surface of said block, a transverse bore formed in said block adjacent the closed ends of and intersecting said first and second longitudinal bores and extending from one side of said block to the opposite side of said block; a first coaxial connector affixed in said transverse bore for coupling a radio receiver to said switch, said first coaxial connector formed with a housing comprising a base member extending from said one side to said first longitudinal bore, a spring loaded plunger slidably mounted in said first coaxial connector and provided with a flange member for contacting the inside surface of said housing whereby the input of said radio receiver is shorted to ground when said switch is in the transmit position, said plunger having one end connected to the center contact means of said first coaxial connector by flexible conductor means and extending through a perforation in the base of said housing into said first longitudinal bore; a second coaxial connector for coupling a radio transmitter to said switch affixed in said transverse bore with its base member extending from said opposite side to said second longitudinal bore, a plunger slidably mounted in said second coaxial connector having one end connected to the center contact means of said second coaxial connector, said plunger passing through said second longitudinal bore and terminating in the transverse bore between said first and second longitudinal bores, a circumferential groove formed in that portion of said plunger in the said second longitudinal bore; a third coaxial connector affixed in the open end of said second longitudinal bore, a spring reed positioned in said second longitudinal bore, said spring reed having one end affixed in said third coaxial connector and in contact with the center contact means thereof, the opposite end of said spring reed being split and in engagement with said circumferential groove, said spring reed being stressed to normally urge said plunger into the portion of said transverse bore between said first and second longitudinal bores; a cup member formed with a centrally perforated bottom wall extending into said first longitudinal bore and opposite the housing of said first coaxial connector, said cup member having an insulated closure with a central bore, a second spring loaded plunger slidably mounted in the central bore of said closure having one end extending into said transverse bore in alignment with said plunger and its opposite end extending into said first longitudinal bore in alignment with said first spring loaded plunger, a flange formed on the portion of said second spring loaded plunger within said cup member being normally urged against the inside surface of said bottom providing a closure for the perforation in said bottom wall; a fourth coaxial connector affixed in the open end of said first longitudinal bore for connecting an antenna thereto, a second spring reed positioned in said first longitudinal bore having one end affixed in said fourth coaxial connector and in contact with the center contact means thereof and its opposite end provided with contact means in alignment with said first and second spring loaded plungers, said second spring reed stressed so that its contact means normally engages said first spring loaded plunger, a plunger-solenoid affixed to said one side of said housing, a bore in said housing extending from said one side to said first longitudinal bore through which the plunger of said plunger-solenoid passes for cooperation with said second spring reed, and means in said switch providing a resistance load for said radio transmitter until after the antenna has been switched to said radio transmitter.

3,373,361
ANTENNA COUPLER SYSTEM PROVIDING ISOLATION BETWEEN ANTENNAS
John R. Winegard, Burlington, Iowa, assignor to The Winegard Company, Burlington, Iowa, a corporation of Iowa
Filed Apr. 26, 1965, Ser. No. 450,931
3 Claims. (Cl. 325—367)



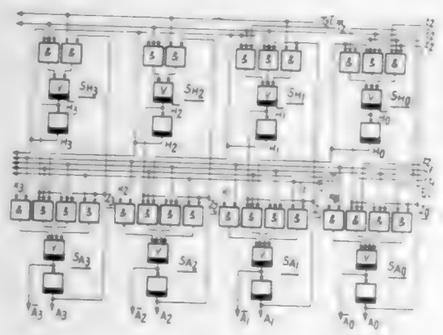
1. In combination:
a television receiving apparatus having a predetermined input impedance and operable over a band including a plurality of television channels;
a first television signal source having said predetermined impedance and being effective to supply signals in at least one of said channels;
a second television signal source having said predetermined impedance and being effective to supply signals in at least one other such channel;
a coupler device having first and second pairs of input terminals, a pair of output terminals and a pair of reference terminals;
means connecting the pair of output terminals to the television receiving apparatus;

means connecting the first pair of input terminals to the first television signal source;

means connecting the second pair of input terminals to the second television signal source; and

circuit means in the coupler defining circuit connections from one terminal of the output terminal pair to one terminal of each of said first and second input terminals pairs and from the other terminal of the output terminal pair to the other terminal of each of said first and second terminal pairs, said circuit means including impedance transformation means having substantially a 2:1 impedance ratio interposed between the pair of output terminals and the pair of reference terminals, at least one transformer having a core and a pair of windings encircling the same, one winding being interposed between one of the reference terminals and one of the terminals of the first input terminal pair and the other winding being interposed between said one terminal of the pair of reference terminals and one terminal of the second input terminal pair, the windings being so constructed and poled as to produce substantially equal and opposing magnetomotive forces in the core upon like current flow from the first and second input terminal pairs to the output terminal pair.

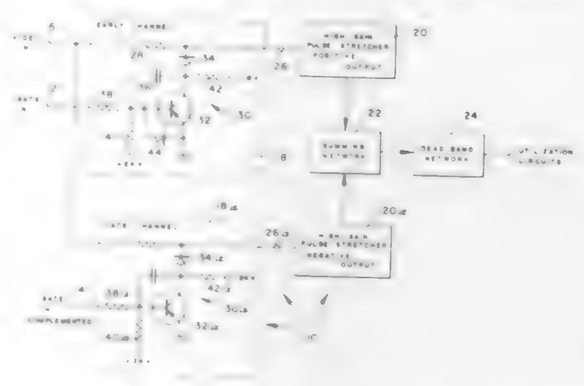
3,373,362
STATIC COUNTER INCORPORATING STAGES HAVING MAIN AND AUXILIARY STORES
Dieter Petzold, Berlin-Neukolln, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Apr. 5, 1965, Ser. No. 445,505
Claims priority, application Germany, Apr. 3, 1964, L 47,481
4 Claims. (Cl. 328—41)



A static counter having counter stages incorporating main and auxiliary stores. Timely staggered counting signals are applied only to the main and auxiliary stores, respectively, of the lowest-order counting stage, from whose outputs are derived new counting and auxiliary counting signals which are applied in parallel to the main and auxiliary stores, respectively, of all higher-order counter stages.

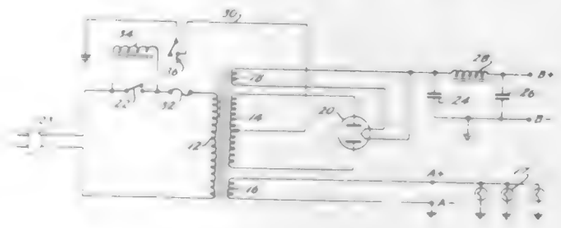
3,373,363
DISCRIMINATOR CIRCUIT RESPONSIVE TO A PULSE POSITION RELATIVE TO A GATE PERIOD
Joseph S. Brugler and William H. Woodworth, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Sept. 15, 1965, Ser. No. 487,635
3 Claims. (Cl. 328—109)

The invention is a discriminator circuit which is linearly responsive to a video position within a gate. It consists of two parallel processing channels. The gate pulse is applied to both processing channels, with the pulse applied to one of the channels of positive polarity and the pulse applied to the other of the channels of negative polarity. In each channel the pulse is applied to an integrator circuit which produce ascending and descending ramps, respectively. The video signal is superimposed on both of these ramps. The superimposed video signal and ramp signals are applied to a so-called "sample and hold"



circuit in each channel. The sample and hold circuit is of a type producing an exponentially declining potential from across a capacitor charged by its input. The outputs of the sample and hold circuits are summed by a common summing network and the summer output is passed through a "dead-band" diode network including parallel diodes, but oppositely poled.

3,373,364
STANDBY CATHODE HEATING CIRCUIT FOR VACUUM TUBE
Gerald A. Tumarkin, West Orange, and Walter Ng, Newark, N.J., assignors to Griffiths Electronics, Inc., Newark, N.J., a corporation of New Jersey
Filed Sept. 23, 1965, Ser. No. 489,626
2 Claims. (Cl. 328—270)

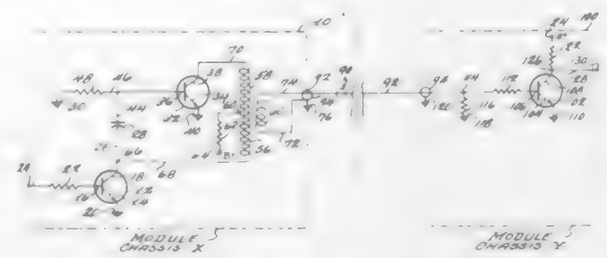


An electric circuit employing electronic vacuum tubes with heated cathodes is quickly brought to operative condition through the use of a control switch by-passed by an inductance which inductance is the relay coil of a relay of which the contacts control the high voltage supplied to the tubes. When the switch is open, the high voltage to the tubes is cut off by the relay contacts opening and the current to the heaters is reduced because of the reactance of the relay coil. The low and high voltage supplied to the tubes may be through a transformer and the inductance by-passed switch may be in the primary of the transformer.

3,373,365
COAXIAL CABLE TRANSMISSION SYSTEM
Lester T. Davis, Chippewa Falls, Wis., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed July 8, 1964, Ser. No. 381,040
5 Claims. (Cl. 330—53)

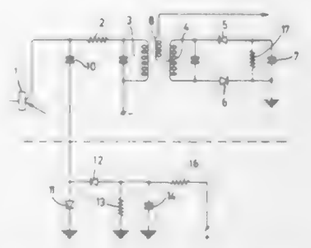
A coaxial cable transmission system for interconnecting circuit modules mounted on separate chassis. Transistor driver circuitry in a first module is connected to

transistor receiver circuitry of a second module via a coaxial cable. The transistor driver utilizes a transformer arranged to develop opposing magnetizing forces while coupling the driver to the transmission line. More par-



ticularly, the driver circuitry utilizes a pair of interconnected transistors the outputs of which are joined to the transformer primary winding to develop equal and opposing magnetizing forces, but at different times.

3,373,366
DYNAMIC LIMITER FOR A FREQUENCY MODULATION RECEIVER
Alfred Schulz, Wetzlar, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 30, 1964, Ser. No. 407,704
Claims priority, application Germany, Oct. 31, 1963, P 32,891
3 Claims. (Cl. 329—131)



A limiter circuit for frequency modulation signals in which the signals are applied to biasing network of a parallel circuit of a capacitor and non-linear resistor by way of a diode. A direct current source is connected to the capacitor by way of a resistor for biasing the diode in the pass direction in the absence of signals.

3,373,367
AMPLIFIER FAILURE INDICATOR
Wallace E. Clarke, Belleville, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Mar. 1, 1965, Ser. No. 436,081
8 Claims. (Cl. 330—2)

1. In an amplifier system having two amplifiers each with a pair of output terminals, a corresponding output terminal of each amplifier being connected to opposite ends of a first center-tapped coil, and a substantially resistive load connected between the center-tap of said first coil and a common connection to the other output terminal of each amplifier, indicating apparatus for indicating individual failure of one of the amplifiers comprising,

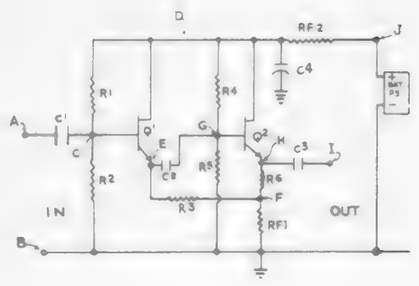
a second coil, having a first and a second end and a center-tap, magnetically coupled to said first coil, said center-tap of said second coil being connected to said common connection,

the number of turns of said second coil being substantially equal to the number of turns of said first coil,

a first indicating device connected between said first end of said second coil and said center-tap of said first coil, and

a second indicating device connected between said second end of said second coil and said center-tap of said first coil.

3,373,368
WIDE BAND TRANSISTOR ISOLATION AMPLIFIER
Stanley J. Gewirtz, New York, N.Y., assignor to Solid State Systems, Inc., New York, N.Y.
Filed Sept. 24, 1962, Ser. No. 225,498
2 Claims. (Cl. 330—22)



1. A wide band transistor amplifier including first and second amplification stages, means for creating a bucking AC voltage at the emitter of said first stage for causing the load impedance of said first stage to appear as a very high AC impedance, said means comprising a tapped resistor divider connected between the emitter of said second stage and ground, said tap being connected to the emitter of said first stage to present said bucking AC voltage thereto, said second transistor receiving its base input AC signal from the emitter of said first transistor.

3,373,369
TEMPERATURE STABILIZED TRANSISTOR AMPLIFIER
Van B. Cones, Indianapolis, Ind., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 10, 1966, Ser. No. 556,786
2 Claims. (Cl. 330—23)

1. An amplifying device having a very stable gain-temperature characteristic when plotted over a wide ambient temperature range, comprising:

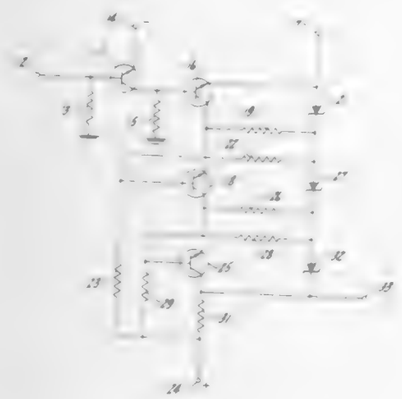
input terminal means coupled to an amplifying transistor means, said transistor means having a control electrode coupled to said input means and having first and second conducting electrodes, said first conducting electrode comprising the output point of the device and being coupled to a load resistor, the opposite end of said load resistor being coupled to a point of one potential, said second conducting electrode being coupled to a dropping resistor the other end of which is coupled to a point of the other potential; and

a feedback network comprising first, second, and third resistors, said first resistor being coupled from said control electrode of said transistor means to said second conducting electrode thereof, said second and third resistors being coupled in series with one another and coupled in parallel with said first resistor,

the junction formed by the series coupling of said first and second resistors being coupled to said first conducting electrode of said transistor means, wherein said second and third resistors are of substantially equal value and are of a very high resistance value

with respect to said second resistor, and wherein said output point of said device produces a signal which is 180° out of phase with the signal at said input terminal means, thereby providing a negative feedback from said output through said feedback network to said input.

3,373,370
TRANSISTOR CIRCUIT ARRANGEMENT
Robert M. Letsinger, Greenfield, Ind., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 20, 1965, Ser. No. 457,531
9 Claims. (Cl. 330—24)

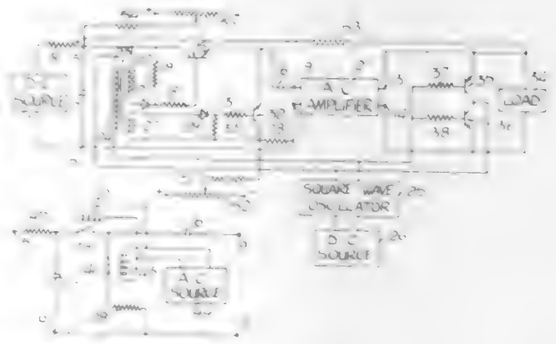


A solid state, high voltage direct current amplifier circuit utilizing a plurality of commercially available transistors which are series energized and which have the emitter and collector electrodes thereof coupled in circuit with various resistance elements and in parallel with respective Zener diodes. These Zener diodes determine the transition points at which the level of conduction of one transistor becomes stabilized and at which any further increases in conduction are passed on to the following transistor. The transistors are also protected by these diodes in a manner which permits the use of transistors having individual maximum voltage ratings lower than the anticipated output voltages of the amplifier.

3,373,371
VHF TUNER NEUTRALIZING CIRCUIT
Eugene K. Von Fange, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 3, 1965, Ser. No. 452,808
3 Claims. (Cl. 330—27)

In a VHF tuner for a television receiver, a neutralizing circuit for an RF transistor comprising inductive tuning means in series with the collector electrode of the transistor, a source of neutralizing voltage in the form of a capacitor connected to the inductive tuning means, and a series inductor-capacitor arrangement connected between the junction of the inductive tuning means and of the capacitor serving as the source of neutralization voltage and the base of the RF transistor. The capacitor-inductor series arrangement includes an inductor of a value to achieve neutralization at the high channel frequencies while the capacitor is of a value to provide a constant desired output band width for the VHF tuner. The neutralizing circuit also includes a trimmer capacitor connected between the collector electrode of the RF transistor and ground and an RC parallel combination connected between the emitter electrode of the RF transistor and ground.

3,373,372
INPUT STAGE FOR A.C. AMPLIFIERS
Henryk Banasiewicz, London, and Kenneth Phillip Frank Terrill, Wealdstone, Middlesex, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England
Filed May 14, 1964, Ser. No. 367,377
Claims priority, application Great Britain, July 22, 1963, 28,856/63
2 Claims. (Cl. 330—51)



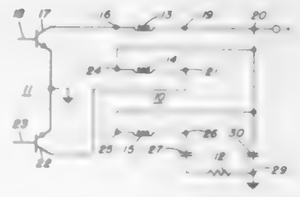
In an input stage for chopping a direct current supply and feeding it to an A.C. amplifier, the direct current is fed through a first switching device and a capacitor in series to the amplifier, and connected across the series connection of the capacitor and amplifier is a second switching device, the switching devices being operated so that when one is conducting the other is not. In addition,

in order to absorb any transients resulting from the operation of the switching devices, a capacitor is connected across the D.C. supply.

ERRATUM

For Class 330—53 read:
Patent No. 3,373,365

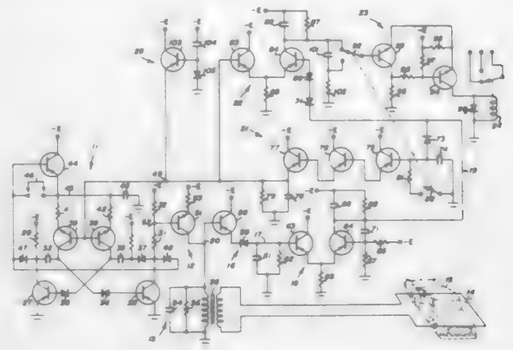
3,373,373
OUTPUT COUPLING METHOD FOR PUSH-PULL POWER AMPLIFIER
Donald A. McClure, Pennsauken, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 24, 1964, Ser. No. 421,137
5 Claims. (Cl. 330—192)



1. A push-pull coupling network for transmitting power the even order harmonics of which are suppressed comprising:
- a push-pull amplifier having two outputs and operative to generate power through either output during alternative halves of a power cycle;
- a transmission line having a plurality of wires in close parallel relationship, said wires having two terminals, the first wire of which has its first terminal connected to one output of said push-pull power amplifier and the second wire of which has its first terminal connected to the second output of said push-pull power amplifier;
- a load impedance having two terminals, the first terminal of which is connected to the first terminal of the third wire of said transmission line; and
- a terminal of zero AC potential to which the second terminal of the three wires of said transmission line and the load impedance are connected, whereby a signal is transmitted by either of said first or second wires to said load during one-half of the power cycle which is of opposite polarity to the signal transmitted by the other of said first or second wires during the alternate half of the power cycle and whereby said load impedance serves as the characteristic impedance of the transmitting line.

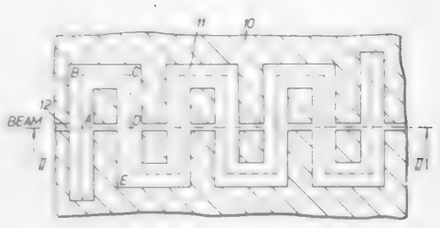
3,373,374
SELF-TUNABLE VEHICLE PRESENCE DETECTOR SYSTEM
Gilbert Marosi, Sunnyvale, Calif., assignor to General Precision Systems Inc., a corporation of Delaware
Filed June 1, 1966, Ser. No. 554,442
9 Claims. (Cl. 331—8)

In this vehicle presence detector system, a constant current oscillatory signal is passed to a tuned circuit including an inductive loop. A vehicle moving over the loop will vary the inductance and the loading thereof to vary the voltage amplitude of the signal which is rectified and amplified, and is passed to an automatic frequency control circuit, AFC. The AFC voltage controls the frequency of a multivibrator which generates the oscillatory signal. During an initial transient period after the system is turned on, a transistor-capacitor "start sweep" circuit pre-empts the AFC to prevent the multivibrator from "running away" at a high frequency. The AFC or the "start sweep" control voltage is applied to bias two transistors for controlling the discharge rate of capacitors and thereby controlling the



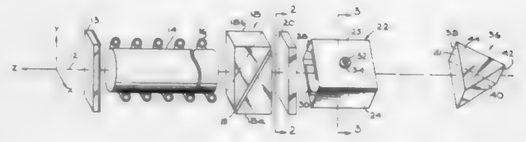
oscillatory frequency of the multivibrator. A further transistor may be selectively coupled into the multivibrator circuit for permitting operation at different power supply voltages.

3,373,375
KLYSTRON OSCILLATOR UTILIZING BOTH FORWARD AND BACKWARD WAVE INTERACTION
Alan B. Cutting and George C. Morrow, both of London, England (% Century Works, Lewisham, London, SE. 13, England)
Filed Mar. 30, 1966, Ser. No. 538,659
Claims priority, application Great Britain, Mar. 31, 1965, 13,566/65
9 Claims. (Cl. 331—83)



In an extended interaction klystron oscillator an electron beam sets up a standing wave in a slow wave structure, the slow wave structure being such that the standing wave set up therein interacts with the electron beam only at locations where antinodes occur.

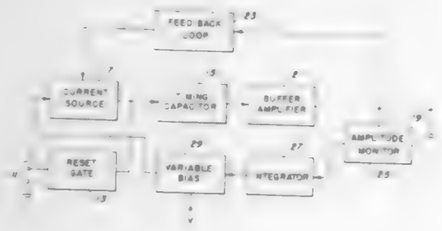
3,373,376
KERR CELL LASER MODULATOR CORRECTED FOR INDUCED CHANGES OF INDEX OF REFRACTION EFFECTS
George L. Clark, Sierra Madre, and Ralph F. Wuerker, Palos Verdes, Calif., assignors to TRW Inc., a corporation of Ohio
Filed Nov. 18, 1963, Ser. No. 324,289
10 Claims. (Cl. 331—94.5)



An electrical shutter having electrically orientable optically anisotropic molecules is interposed between the radiation reflecting elements of a master system, defining a cavity, so as to control the level of radiation between

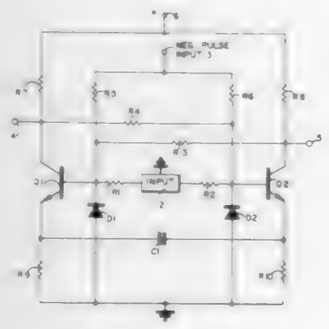
the reflecting elements. A prism is interposed in the cavity to plane polarize the reflecting radiation. A quarter wave plate also interposed in the cavity elliptically or circularly polarizes the plane-polarized radiation from the quarter wave plate such that only elliptical or circular polarized radiation passes through the electrical shutter effectively preventing changes in the index of refraction of the shutter due to radiation induced orientation of the molecules of the shutter.

3,373,377
SELF-ADJUSTING VARIABLE FREQUENCY SAWTOOTH GENERATOR
Stephen E. Townsend, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed July 1, 1966, Ser. No. 562,290
8 Claims. (Cl. 331—111)



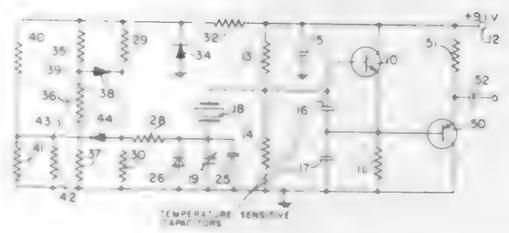
A variable frequency sawtooth waveform generator independent of frequency over a relatively wide range. An amplitude to pulse width converter for determining the magnitude of a feedback control signal to be applied to a constant current generator is utilized in conjunction with variable frequency constant amplitude sawtooth waveform generators.

3,373,378
PULSE WIDTH MODULATOR
George B. Cottrell, Dairy Valley, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,792
5 Claims. (Cl. 331—113)



A digital type servo control system in which a single stage multivibrator is caused to operate as an analog to digital converter producing input to output linearization. The multivibrator receives as inputs a pulse train of substantially constant frequency and amplitude and a differential analog signal corresponding to an error signal of the servo system. The single stage operates upon these two input signals to provide nonsymmetrical complementary square wave output signals of decreasing frequency for increasing input signal amplitude. The linearization technique also produces servo stabilization without additional circuitry or components.

3,373,379
CRYSTAL OSCILLATOR WITH TEMPERATURE COMPENSATION
Paul W. Black, Harvey, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed June 17, 1966, Ser. No. 558,310
5 Claims. (Cl. 331—116)

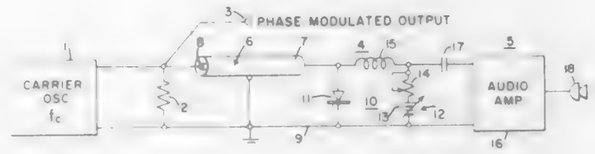


Transistorized crystal oscillator of the Colpitts type with temperature compensating capacitors connected in parallel with the crystal to compensate the linear variation in frequency of the crystal with temperature. A varactor is connected in series with the crystal and a control voltage is applied to change the capacity thereof. The control voltage may be provided by voltage dividers including thermistors so that the capacity changes with temperature and compensates the frequency of the oscillator at the edges of the temperature range.

3,373,380
LASER BEAM-SOUNDWAVE TECHNIQUES USING CURVED ACOUSTIC WAVES
Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 388,589, Aug. 10, 1964. This application Aug. 3, 1965, Ser. No. 476,873
11 Claims. (Cl. 332—7.51)

1. Signal translating apparatus comprising:
means for producing a beam containing wave-fronts of spatially coherent substantially monochromatic light;
and means for directing across the path of said beam sound wave-fronts, at least a portion of one of said wave-fronts being curved and the direction of propagation of said sound being oriented relative to that of said light so that the tangents to said portion include a tangent which intersects the other of said wave-fronts at the Bragg angle corresponding to the wavelengths of said sound and light.

3,373,381
TRANSMISSION LINE PHASE MODULATOR
Henry P. Thomas, Lynchburg, Va., assignor to General Electric Company, a corporation of New York
Filed Dec. 18, 1964, Ser. No. 420,251
6 Claims. (Cl. 332—29)



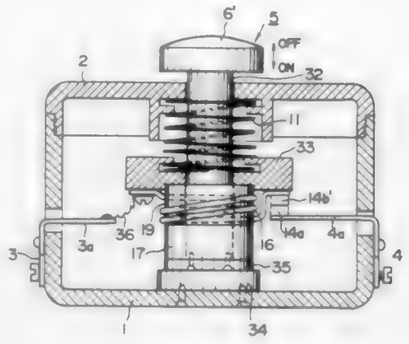
A phase modulator consisting of a transmission line which is terminated by an electrically variable impedance such as a diode. In the absence of a modulating signal, the diode terminates the line in its characteristic impedance Z_0. The line is made ⅛ of a wavelength long at the carrier frequency F_c. The modulating signal is impressed across the diode to vary the terminating impedance. This establishes standing waves on the transmission line and produces a reflected wave at the input of the line which is in quadrature with the carrier, the magnitude of the reflected signal being a function of the modulating signal to produce phase modulation.

3,373,382
DELAY LINE WITH RECESSED SUPPORT TO PREVENT SHORTING BY METAL SPUTTERING
Felix Diamand, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France
Filed July 12, 1963, Ser. No. 294,633
Claims priority, application France, Aug. 23, 1962, 907,603, Patent 1,338,984
4 Claims. (Cl. 333—31)

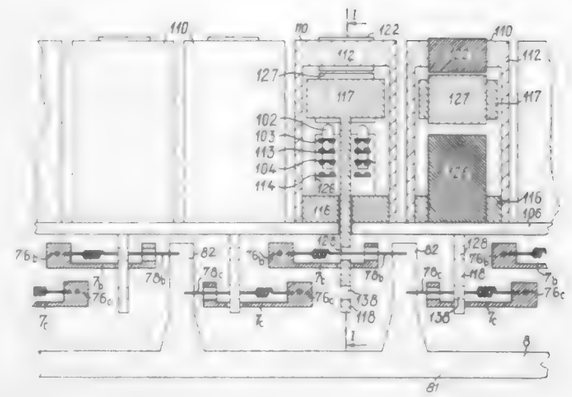
1. In an evacuated tube electron discharge device having a delay line of geometrically periodical structure subject to metal sputtering, said delay line comprising an insulating base, a series of spaced metal elements fixed on said insulating base, and a conductive support for said base, said insulating base being provided with cut-out portions in the spaces between said elements sufficient to bare the surface of said conductive support within said spaces and cause the insulating base to conform substantially to the shape of the spaced metal elements.

3,373,383
AUTOMATIC CURRENT LIMITING CIRCUIT BREAKER
Yasuo Kasahara, Tokyo, Japan, assignor to Shoichi Shimada
Filed Jan. 27, 1966, Ser. No. 523,376
Claims priority, application Japan, Feb. 2, 1965, 40/5,304; Feb. 5, 1965, 40/6,018; June 1, 1965, 40/31,893; Nov. 26, 1965, 40/72,353; Dec. 2, 1965, 40/73,631; Dec. 22, 1965, 40/78,522; Dec. 28, 1965, 40/106,980
7 Claims. (Cl. 335—18)

A circuit breaker comprising a pair of contacts, an armature having thermally reversible magnetic properties and carrying one of said contacts, a magnetic locking means to attract said armature, a spring biasing the contacts away from their closed position, and a manual actuating means, whereby upon occurrence of an overcurrent, the magnetic attraction between said armature and said locking means is reduced to open said contacts.



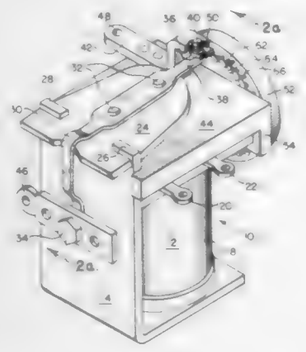
3,373,384
CO-ORDINATE SELECTION SWITCHES
Pierre M. Lucas, 20 Rue Tariel, Issy-les-Moulineaux, France
Filed Oct. 17, 1966, Ser. No. 587,193
Claims priority, application France, Oct. 22, 1965, 35,946; Dec. 10, 1965, 41,871; Aug. 3, 1966, 71,995
6 Claims. (Cl. 335—112)



1. A crossbar switch comprising a rectangular matrix, crosspoints arranged along the horizontal rows and vertical columns of said matrix, horizontal selection bars and vertical control bars, each of said crosspoints comprising at least one set of contacts and one intermediate member equipped with an operating member under the action of which it can be subjected to a movement of translation between two stable end positions of equilibrium in which said contacts are respectively opened and closed, each of said vertical bars being in the form of a substantially rectangular panel adapted to pivot in one direction and in the other about one of its large vertical sides, pierced with apertures affording free passage to the operating members for the crosspoints of a vertical column and carrying selection fingers individually associated with said crosspoints, said selection fingers having one of their ends resiliently fitted into an edge of the vertical bar which carries them in the vicinity of its pivotal axis and their other end engaged in a vertical slot in the opposite edge of said panel in such a manner that, in the position

of rest they are not in engagement with the operating members of the crosspoints and that their only possible movement is bending in a plane parallel with said panel, and each of said horizontal bars allows the selection fingers of a horizontal row of crosspoints to be displaced in such a manner as to cause them to come into engagement with said operating members whereby the selection of a horizontal row of crosspoints is effected through the operation of a horizontal bar, and the rendering operative and inoperative of a given crosspoint in said row is effected through the operation of the appropriate vertical bar in said one direction and in said other direction respectively.

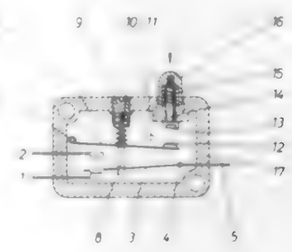
3,373,385
ELECTRICAL RELAY
Seymour Kessler, Wilmette, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed June 16, 1966, Ser. No. 558,077
10 Claims. (Cl. 335—138)



A latching electromagnetic relay which is stable in at least two modes of contact operation, including a coil and core assembly, a pivoted armature for attraction by the core and including at least one contact for movement by said armature; said armature further including a projecting tip directly cooperating with a pair of concentric cam tracks formed on a rotatable index wheel, said tracks being shaped to step the index wheel upon each movement of the armature, and to act as a changeable armature position stop to control the position of said contact after each successive step of rotation of said index wheel.

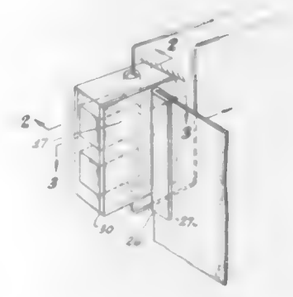
3,373,386
ADJUSTABLE PUSHBUTTON MAGNET SWITCH
Hermann Ehrenberg, Ahornstrasse 9, Langen, near Frankfurt am Main, Germany
Filed Jan. 28, 1966, Ser. No. 523,622
Claims priority, application Germany, Feb. 2, 1965, E 28,598
4 Claims. (Cl. 335—205)

A push button switch comprising a first and second magnet means for attracting one another, a push button having the first magnet means disposed at one end thereof, and an operating member movably disposed adjacent the push button and having the second magnet means thereon adjacent the first magnet means. Two fixed contacts spaced from each other, are provided as well as a contact member coupled to the operating member for movement therewith between the two fixed contacts, respectively, and a spring means for urging the operating member in a direction opposite to the direction in which the operating member is urged by the first and second magnet means for causing the contact member to engage one of the two fixed contacts. The first and second magnet means are of sufficient magnetic force to cause the operating member to move toward the push button against the force of the spring means so that the contact member engages the other of the two fixed contacts when the push button is moved toward the operating member, and a



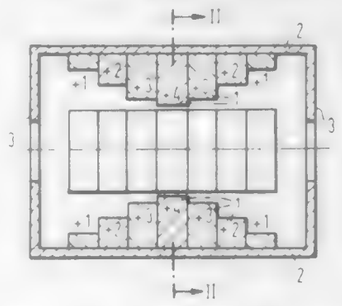
means is provided for adjusting the spring means to vary the force of the latter against the operating lever to thereby change the switching time of the push button switch.

3,373,387
MAGNETICALLY OPERATED PROXIMITY SWITCH
Eugene H. Irasek, Inglewood, Calif., assignor to Houston Fearless Corporation, Los Angeles, Calif., a corporation of California
Filed July 7, 1966, Ser. No. 563,465
7 Claims. (Cl. 335—207)



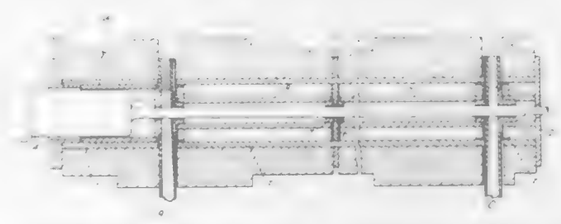
A magnetically operated proximity switch employing a pair of permanent magnet blocks having magnetic pole faces at their front and back surfaces and magnetized therebetween, with the blocks spaced apart in a direction at right angles to their direction of magnetization. A magnetic reed switch is located adjacent the side faces of the magnet blocks other than the magnetic pole faces thereof with the longitudinal axes of the reeds extending generally in the direction of the spacing between the blocks and with the reeds normally separated. Thes polarities of the front and back faces of the magnet blocks are reversed so that the flux passing through the reeds between the back pole faces is opposite in direction to the flux passing through the reeds between the front pole faces to affect cancellation of the fluxes to an extent that the resultant flux is insufficient to close the reeds in the absence of an element of magnetic material adjacent the front magnetic pole faces to bleed off the flux thereat. To increase the sensitivity of the proximity switch the magnetic reeds are offset from the center plane of the permanent magnet blocks away from their front faces to establish a normally predominant resultant flux through the reeds between the back pole faces. The spacing between the permanent magnets is made sufficiently small to substantially restrict the depth of the fringing field from the pole faces so that the proximity switch will be responsive to the proximity of a magnetic element regardless of the presence of a magnetic background at a greater distance.

3,373,388
PERMANENT MAGNET SYSTEM FOR THE GENERATION OF AT LEAST TWO OPPOSITE MAGNETIC FIELDS LYING ONE BEHIND THE OTHER FOR THE BUNDLED GUIDANCE OF AN ELECTRON BEAM, ESPECIALLY FOR TRAVELING WAVE TUBES
Paul Meyerer, Ottobrunn, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Jan. 21, 1966, Ser. No. 522,059
Claims priority, application Germany, Jan. 26, 1965, S 95,153
9 Claims. (Cl. 335—210)



A permanent magnet array for a so-called "reversed field" focusing for travelling wave tubes with permanent magnets symmetrically arranged relative to the system axis which according to the invention are arranged in a closed series one behind the other, wherein the expansion of the magnets decreases uniformly and perpendicularly to the system axis from the middle of the closed series to its two ends, the magnets particularly consisting of a material with a high coercive force.

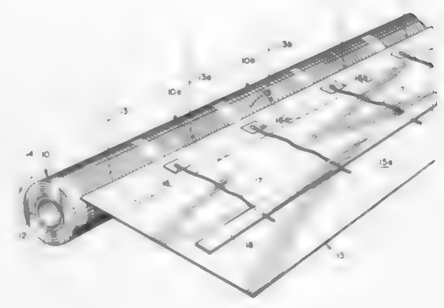
3,373,389
MAGNETIC FIELD STRAIGHTENER
John Graham Armstrong, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,451
Claims priority, application Great Britain, Feb. 19, 1965, 7,253/65
8 Claims. (Cl. 335—211)



A magnetic field straightener of ferromagnetic material is positioned between the envelope of an electron beam tube and a cylindrical permanent magnet focusing structure. Two longitudinal sections are arranged on each side of a field reversal gap. The field straightener is supported and spaced from the envelope by non-magnetic metallic supports and is in the form of a small diameter wire helix closely wound on a non-magnetic metallic cylinder.

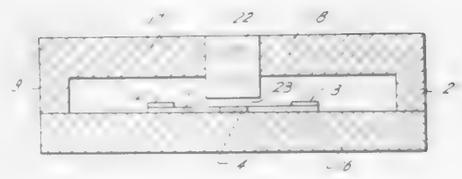
3,373,390
ELECTRICAL INDUCTANCE AND METHOD
Edwin C. Rechel, Lancaster Road, Shirley, Mass. 01464
Continuation-in-part of application Ser. No. 592,615, Nov. 7, 1966. This application June 7, 1967, Ser. No. 657,442
9 Claims. (Cl. 336—192)

An electrical inductance and method. The inductance includes a coil of relatively fine wire wound on a coil form and a flexible wrapper. The wrapper carries contact means adjacent one edge thereof from which a lead wire of relatively large diameter extends. Said wrapper



edge is positioned between the last turn of the coil winding and the remainder of the winding and the last turn is secured to the contact means. The wrapper extends circumferentially about the outer surface of the coil.

3,373,391
HALL GENERATOR MAGNETIC STRUCTURE
Peter Böhm and Karl Maaz, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Apr. 13, 1966, Ser. No. 542,408
Claims priority, application Germany, Apr. 23, 1965, S 96,709
9 Claims. (Cl. 338—32)

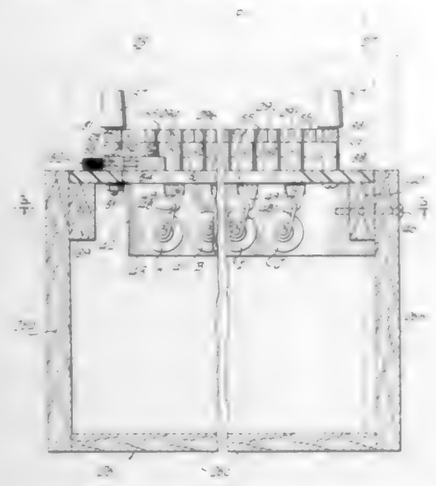


A Hall device is positioned on a carrier plate of ferrite material. A spacer frame of non-magnetic material which is a poor conductor of electricity is affixed to the carrier plate in space relation with the Hall device. A bridge member of ferromagnetic material is supported by the spacer frame in operative proximity with, but spaced by an air gap from, the conductor plate and functions to concentrate magnetic flux upon a surface of the conductor plate which is most effective for the Hall effect.

3,373,392
RESISTANCE AND CONDUCTANCE REFERENCE DECADE STANDARD
Loebe Julie, Riverdale, N.Y., assignor to Julie Research Laboratories, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 332,713, Dec. 23, 1963. This application Mar. 13, 1967, Ser. No. 648,176
16 Claims. (Cl. 338—77)

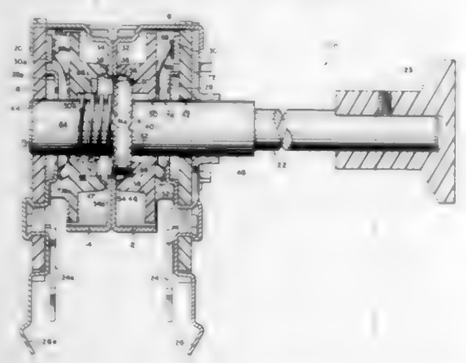
An impedance decade standard wherein precision and stability inaccuracies due to spurious leakage and contact resistances are minimized by a novel terminal plug block structure. The individual impedance elements of the standard are connected to correlated terminal blocks. The terminal blocks are raised in air with respect to the supporting insulator base. Also the blocks are isolated by surrounding air gap in the insulator base from the

outer housing and ground connections. In addition the blocks arranged in novel positional array which increases



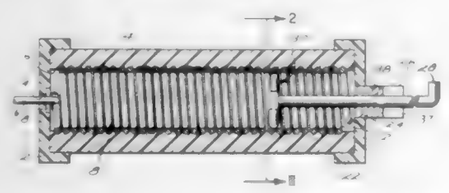
the versatility of the standard as well as increasing its precision and stability.

3,373,393
VARIABLE RESISTOR UTILIZING NOVEL CONTROL SYSTEM
Edgar F. Hauenstine and Charles L. Burns, Frankfort, Ind., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Aug. 11, 1966, Ser. No. 571,817
6 Claims. (Cl. 338—134)



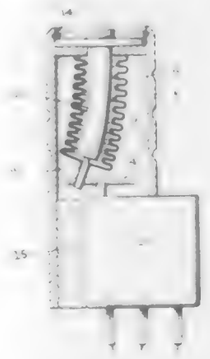
Two variable resistors are independently operable off of a single drive shaft which is spring biased for axial displacement to alternately engage the resistors through independent driving means.

3,373,394
ADJUSTABLE ELECTRICAL RESISTOR
William J. Mairs, 85 Canterbury Road, Waltham, Mass. 02154
Filed May 12, 1966, Ser. No. 549,516
14 Claims. (Cl. 338—143)



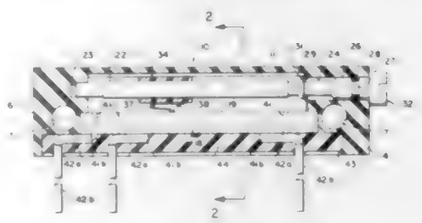
An adjustable electrical resistor comprising a tubular housing, a helical wire resistance element embedded in the inner surface of the housing, end caps closing off both ends of the housing, and first and second terminal leads mounted in the end caps. The first terminal lead is permanently connected to one end of the resistance element. The second terminal lead carries a contact member adapted to moveably engage the resistance element and is mounted so as to be able to advance the contact member along the resistance element by rectilinear and rotational movement.

3,373,395
HERMETICALLY SEALED MULTI-TRIMMER POTENTIOMETER
Raymond W. Sargent, Yorktown Heights, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Filed Aug. 1, 1967, Ser. No. 657,640
2 Claims. (Cl. 338—164)



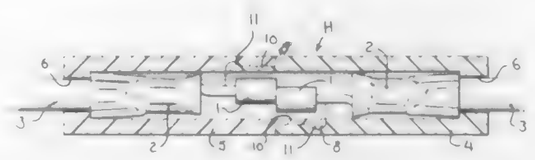
A sub-miniature multi-turn potentiometer mounted to a solderable metal housing containing a hermetically sealed bent shaft mechanically coupled by means of a crank to the multi-turn potentiometer for adjusting the same within an air-tight environment.

3,373,396
VARIABLE RESISTANCE DEVICE
Charles Walter Yungblut, Santa Ana, Alan John Wright, Orange, and Leslie Thomas, Peart, Santa Ana, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed July 29, 1965, Ser. No. 475,648
3 Claims. (Cl. 338—183)



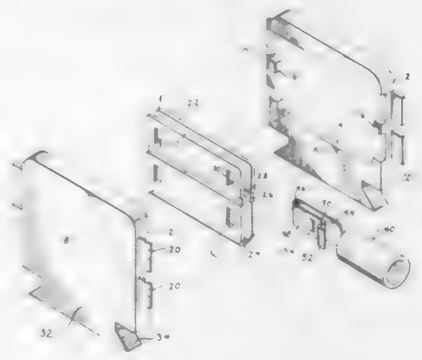
A variable resistance device including a housing open on one side thereof and having disposed therein a nonconductive ceramic base member supporting a resistance element. Terminal pins are fired into the base member each having an end thereof in contact with the resistance element and an opposite end portion extending through the base member and bent parallel to the surface of the base member opposite from the resistance element. To these bent end portions of the terminal pins are connected L-shaped terminal extensions having one leg disposed adjacent to bent portion of the terminal pin and welded or otherwise secured thereto. A nonconductive potting material surrounds the weld and supports the terminal extension adjacent to base member of the device so that bending of the terminal pin takes place at points remote from the weld.

3,373,397
ELECTRICAL CONNECTOR AND INSULATION HOUSING THEREFOR
Floyd Harold Renshaw, Jr., Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 6, 1965, Ser. No. 493,380
2 Claims. (Cl. 339—47)



An insulation housing having identical parts each provided with an arcuate shaped recess along an interior surface of one end and an arcuate shaped extension extending outwardly from this one end. The extensions mate with the recesses when the housing parts are interconnected and means are located in the recesses and on the extensions to latch the parts together to surround and insulate an electrical connection within the housing.

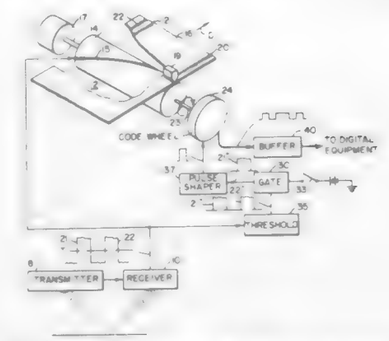
3,373,398
TERMINAL BLOCK
Robert Volinskie, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 23, 1965, Ser. No. 489,535
2 Claims. (Cl. 339—217)



Connector block for commonly connecting a plurality of wires comprises spaced-apart metallic plates contained in insulating housing. Terminal on wire end has reversely bent tongue which is adapted to be inserted through opening in housing so that it is received between plates. Terminal tongue has flexible arm with detent means which enters hole in one plate. Flexible ear on housing engages flexible arm on terminal and disengages detent to permit removal of terminal.

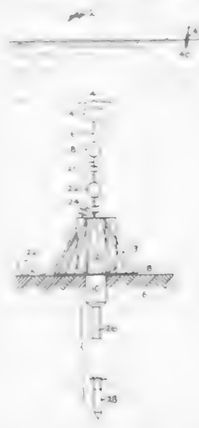
3,373,399
SONAR BOTTOM TRACKING RECORDING SYSTEM
John A. Dorr, Baltimore, and Melvin L. Hiller, Annapolis, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 20, 1966, Ser. No. 521,912
4 Claims. (Cl. 340—3)

Sonar signals are successively transmitted toward the ocean bottom to obtain a profile display on a paper recorder having a rotating drum. A code wheel connected to the drum provides a digital representation of depth. When a point of interest on the display is encountered a manually operated switch is closed allowing the code wheel to be read out by a return signal thereby providing a corresponding digital representation of depth.



In another display a cathode ray storage tube is utilized in conjunction with a counter which provides a running digital representation of depth.

3,373,400
DETERMINATION OF GEOPHYSICAL PROPERTIES OF THE SEA BOTTOM
Sidney Epstein and David Epstein, Brooklyn, N.Y., assignors to Vadys Associates, Ltd., Brooklyn, N.Y., a corporation of New York
Filed Oct. 14, 1965, Ser. No. 495,822
6 Claims. (Cl. 340—7)

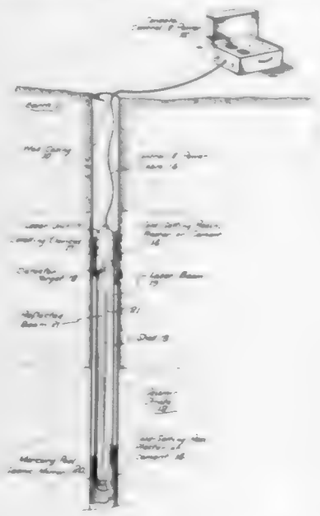


1. In the determination of the geophysical properties of localized sea bottom areas by observation of sediment flow behavior patterns, the steps of
positioning a first explosive charge at a predetermined location and at a selected distance above the sea bottom,
positioning a second explosive charge generally beneath said first explosive charge and on said sea bottom and
positioning a third explosive charge generally beneath said second explosive charge and at a selected distance beneath said sea bottom and
sequentially detonating said first, second and third charges in predetermined order and at spaced time intervals of sufficient duration to permit discrete recordation of the bubble-pulse characteristics of each such detonation.

3,373,401
SEISMIC DETECTION SYSTEM
Ralph E. Bayer, Pomona, Calif., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Sept. 27, 1966, Ser. No. 582,369
7 Claims. (Cl. 340—17)

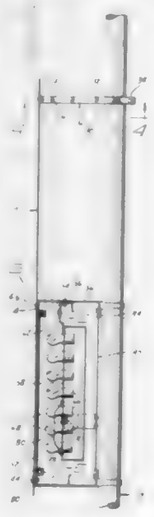
Broadly, the disclosure is directed to a seismic detection system in which a laser beam is reflected from a

mirror-like assembly subject to seismic agitation to a detecting assembly thereby indicating seismic variations by corresponding electrical signals. More specifically, the laser, mirror-like assembly, and detector assembly are lowered into a bore hole and are permanently fixed by embedding the same in cement, plaster, or the like. The mirror-like assembly includes a liquid mercury surface which is employed to sense seismic variations and reflect the incident laser beam accordingly. The detector assembly for analyzing reflected laser signals is comprised



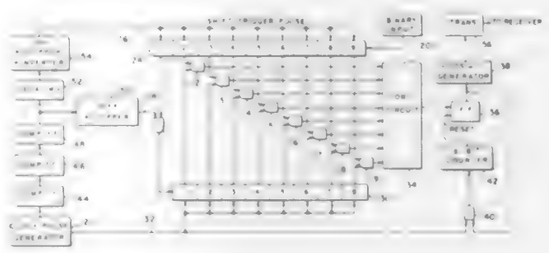
of a photodetector unit divided into four quadrants, for example, each separated from another by insulation. The system operates so that when no seismic variations are sensed, the laser signal is equally distributed over the four segments of the detector assembly. When seismic disturbances cause agitation of the mirror assembly, which may be made of mercury, the laser signal is reflected unequally over the detector which, in turn, produces electrical signals indicative of the direction, frequency and magnitude of the disturbing seismic displacements.

3,373,402
ILLUMINATED VEHICLE TRAFFIC CONTROL SIGNAL
Edward F. Gervais, Lansing, Mich., assignor to James M. Hare, Secretary of State, State of Michigan
Filed Jan. 27, 1964, Ser. No. 340,216
5 Claims. (Cl. 340—107)



This specification describes a traffic control sign having an illuminated legend and a painted legend. The illuminated legend is formed by a light matrix panel carrying incandescent lamps which may be removed readily for servicing. The illuminated legend is rendered inactive by a louvered screen construction that forms a cover for the matrix panel.

3,373,403
REDUNDANT ENCODED MONOCYCLE SYSTEM
William A. Huber, 216 Monroe Ave., Spring Lake, N.J. 07762
Filed Aug. 26, 1963, Ser. No. 304,699
The portion of the term of the patent subsequent to Sept. 28, 1982, has been disclaimed
13 Claims. (Cl. 340—146.1)

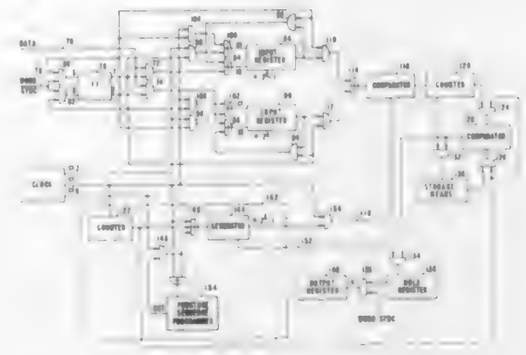


The present invention relates to a coded digital communication system which includes means for predicting in advance from one "mark" signal position to the next "mark" signal position whether or not a "mark" signal should appear. During transmission the sequence of binary signals to be received is converted to the same sequence of minus-cosine wave signals which are time-spaced such that when the minus-cosine wave signals are decoded, the presence or absence of a "mark" signal within a prescribed time period may be predicted.

3,373,404
ERROR-CORRECTING METHOD AND APPARATUS
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Gustave Solomon, Hollywood, Jack J. Stiffler, La Canada, Tage O. Anderson, Arcadia, and Warren A. Lushbaugh, Los Angeles, Calif.
Filed Nov. 10, 1964, Ser. No. 420,245
15 Claims. (Cl. 340—146.1)

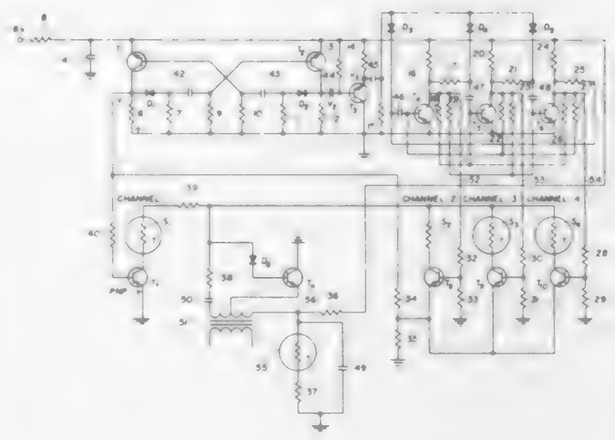
An error-correcting system for use in a digital data communication system. The system comprises an encoding apparatus responsive to a digital data word for developing a maximal length shift register code word corresponding thereto. Means are also provided for deleting digits in selected positions of the developed code word to thus provide a punctured code word. This punctured code word is applied to the transmitting end of a communication channel which operates on the punctured code word to produce a received word at the receiving end of the channel. The channel may introduce random

errors. Means are provided at the receiving end for developing a plurality of punctured cyclic permutations of

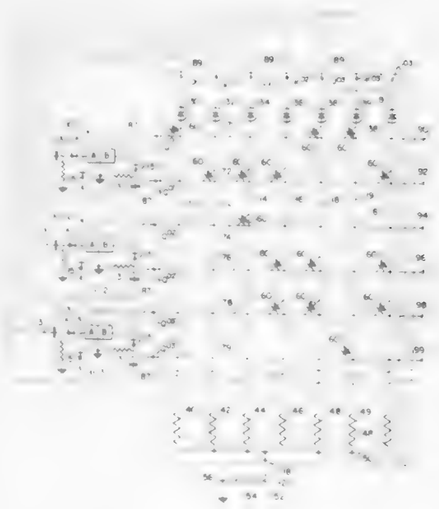


the maximal length shift register code word. The received word is then compared with each of the punctured cyclic permutations.

3,373,405
FOUR-CHANNEL TELEMETRY CIRCUIT
George A. Gadbois, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 19, 1964, Ser. No. 390,767
8 Claims. (Cl. 340—147)



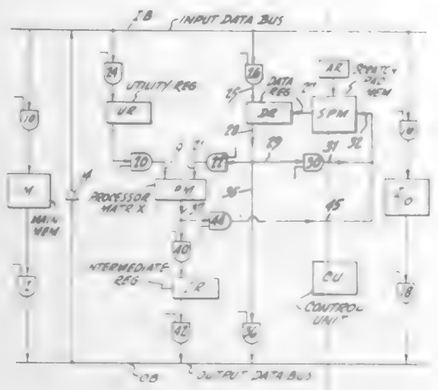
1. A plural channel telemetry circuit for sampling meteorological information in a predetermined timed sequence comprising:
a multi-stage pulse stepping circuit,
a pulse generating circuit connected to said pulse stepping circuit for providing the successive energization of the separate stages of said pulse stepping circuit,
a variable frequency oscillator,
a plurality of sensor means, each coupled between said variable frequency oscillator and a separate stage of said pulse stepping circuit,
gating means coupled to the output of said pulse generating circuit and to said pulse stepping circuit for selectively connecting each of said sensor means to said variable frequency oscillator at a first frequency upon the initiation of conduction through each of said sensor means by pulses applied to said gating means from the individual stages in said pulse stepping circuit,
a further sensor coupled to said oscillator and isolated from said plurality of sensor means,
a further gating circuit interconnecting said further sensor and said pulse generating circuit for connecting said isolated sensor to said variable frequency oscillator at a second frequency which is higher than said first frequency.

3,373,406
LOGIC CIRCUIT BOARD MATRIX HAVING DIODE AND RESISTOR CROSSPOINTS
John W. Cannon, Los Angeles, and John Workings, Torrance, Calif., assignors to The Scam Instrument Corporation, Skokie, Ill., a corporation of Illinois
Filed Dec. 4, 1963, Ser. No. 328,034
5 Claims. (Cl. 340—166)

A logic circuit board includes a series of input wires suspended over a first surface of the board, and a series of output wires are suspended over a second surface and extend transversely of the input wires. Logic diodes extend through holes in the board and are connected between input and output wires at selected crossing points. A power bus, connected to the positive side of a power supply, is supported on the first surface of the board and is connected to supply a positive potential to each output wire by resistors extending through the board. The input wires are connected to the outputs of bistable circuits effective to ground selected input wires in response to external control. When an input wire is grounded, selected output wires are grounded through the logic diodes to produce an output signal that is applied to output terminals through isolating diodes, also extending through the board.

3,373,407
SCRATCH PAD COMPUTER SYSTEM
Andrew T. Ling, Collingswood, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,423
14 Claims. (Cl. 340—172.5)

A computer system in which a processor matrix is provided for performing addition, subtraction, comparisons, shifts, etc., on one or two operand inputs. An operand can be supplied from an input data bus through a "utility" register to the processor matrix. An operand can also be supplied from a data register of a scratch pad storage means to the processor matrix. The output of the processor matrix can be directed to a storage location in the scratch pad storage means. There is thus a direct, local data-path loop from the scratch pad storage means through the data register, through the processor matrix from its input to its output, and back to the scratch pad

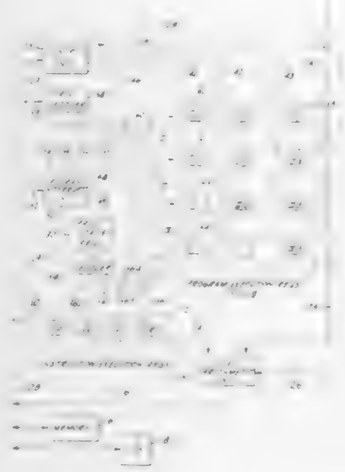
storage means. This local data-path loop is provided in addition to other intercommunication data paths including the data buses, to minimize the time required for data transfers and to most fully utilize the processor matrix.



3,373,408
COMPUTER CAPABLE OF SWITCHING BETWEEN PROGRAMS WITHOUT STORAGE AND RETRIEVAL OF THE CONTENTS OF OPERATION REGISTERS

Andrew T. Ling, Collingswood, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 16, 1965, Ser. No. 448,708
11 Claims. (Cl. 340—172.5)



A computer includes one set of "instruction execution registers" for information used during execution of an instruction and not needed during execution of another instruction, and a plurality of sets of "program execution registers" for information used during execution of an instruction and needed also during execution of a following instruction in the same program. Each set of "program execution registers" is used in executing a corresponding different program. The particular set of "program execution registers" used at any particular time is determined by the contents of a processor state or program state register. The computer can switch from one program to another without the necessity of an intervening transfer to memory of all information needed later for continuing the interrupted program and without the necessity of a retrieval of all information needed at once for execution of the interrupting program.

3,373,409
INFORMATION STORAGE UNIT AND MEMORY CARD THEREFOR

Philip A. Lord, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

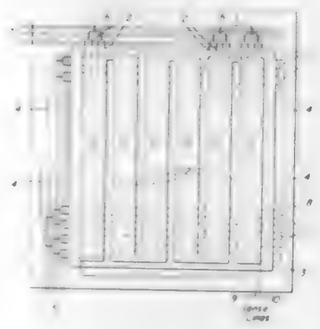
Filed Apr. 20, 1965, Ser. No. 449,432
5 Claims. (Cl. 340—173)

A card capacitor read only storage unit employing a printed circuit board and a printed circuit memory card having an insulating substrate which serves as the dielectric between capacitor tabs on said board and card and wherein said card is provided with test probe pads to facilitate checking without requiring removal from the unit and also edge strips to facilitate processing in conventional card punching and handling equipment.

3,373,410
SENSING SYSTEM FOR AN ARRAY OF FLUX STORAGE ELEMENTS

Vernon L. Newhouse, Scotia, and Raoul E. Drapeau, Troy, N.Y., assignors to General Electric Company, a corporation of New York

Filed Dec. 24, 1964, Ser. No. 421,021
7 Claims. (Cl. 340—173.1)

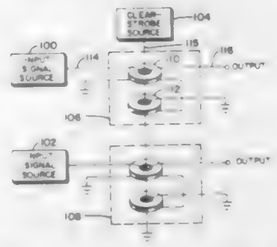


A system for sensing data stored in an array of storage elements wherein a plurality of conducting strips, each strip wider than any storage element, are situated on one side of the array in alignment with the elements. The strips are spaced close to each other to minimize the amount of undetected flux, and are connected in series to detect voltages induced therein by flux changes in any of the elements. A second plurality of strips may be similarly connected to cover the gaps between the strips of the first plurality and detect flux changes in the gaps.

3,373,411
MEMORY APPARATUS AND METHOD FOR SAMPLING TRANSIENT ELECTRICAL SIGNALS

Raymond H. James, Bloomington, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 6, 1963, Ser. No. 321,909
17 Claims. (Cl. 340—174)

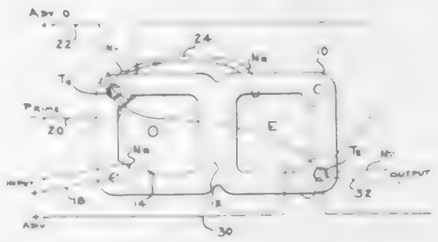


A magnetic memory device that stores discrete levels of data as a function of the degree of the partial switching of the device's magnetizable element's magnetic flux.

3,373,412
MULTIAPERTURE MAGNETIC CORE DEVICE HAVING A DYNAMIC READOUT

Charles Thomas Wyrick, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Apr. 17, 1964, Ser. No. 360,591
1 Claim. (Cl. 340—174)

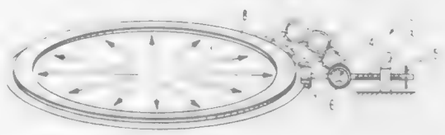


A multiaperture magnetic core having two major apertures defining two intelligence bit positions is disclosed including a readout winding linking a first major aperture and the material therearound to a utility device. The magneic material surrounding a second major aperture includes therein a minor transmitter aperture containing a coupling loop linking the first major aperture and a circuit is provided to provide an output responsive to a transfer of intelligence by said coupling loop.

3,373,413
PLIABLE MAGNETIC RECORDING DISK WITH DIRECT TRANSDUCER CONTACT

Robert C. Treseder, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 30, 1963, Ser. No. 320,210
3 Claims. (Cl. 340—174.1)



A stretched, annular membrane magnetic recording disk having a magnetic recording surface, which is under tension at tension points spaced substantially equidistant around its circumference to provide a recording surface, small areas of which are optically flat and which is pliable for contact recording.

3,373,414
AXIALLY AND RADIALLY AIR BEARING SUPPORT

Donald L. Carter, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

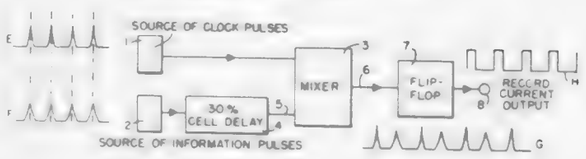
Filed May 6, 1963, Ser. No. 278,130
16 Claims. (Cl. 340—174.1)

1. In a magnetic information storage assembly having a support body, a magnetic storage member within said support body, means for rotating the storage member relative to said body, the improvement comprising self-acting gas bearing means for axially and radially supporting the storage member in non-contacting relationship with respect to said support body during the rotation of said magnetic storage member.

3,373,415
UNSYMMETRICAL HIGH DENSITY MAGNETIC RECORDING SYSTEM

Andrew Gabor, Huntington, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Original application Feb. 1, 1961, Ser. No. 86,338. Divided and this application Nov. 4, 1964, Ser. No. 408,948
11 Claims. (Cl. 340—174.1)



This invention is a self-clocking magnetic recording in which one binary value is recorded solely by reversals at regularly spaced intervals and the other binary value is recorded as a transition at regularly spaced intervals plus a transition substantially in advance of the mid-points between the regular transitions.

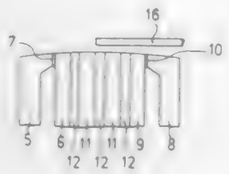
3,373,416
MULTIPLE MAGNETIC HEAD ASSEMBLY

Jan Albert Geurst and George Ludwig Walther, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware.

Filed Feb. 18, 1965, Ser. No. 433,615
Claims priority, application Netherlands, Feb. 25, 1964, 64—1,746
5 Claims. (Cl. 340—174.1)

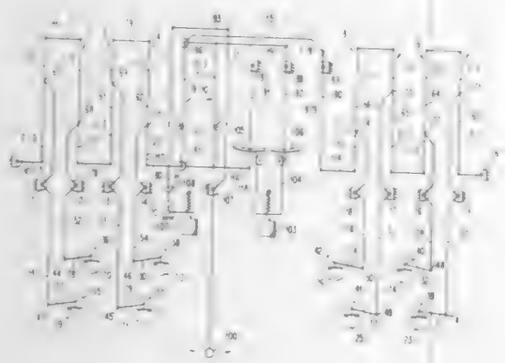
1. A device for reducing or suppressing the relative influence in a multiple magnetic head for recording and reproducing one or more parallel records in one or more parallel corresponding tracks on a unilaterally magnetisable carrier, said heads comprising at least two magnetic circuits one for recording and one for reproducing lying one after the other and connected with each other, each circuit consisting of at least two portions of sintered,

oxidic, ferromagnetic material, and having a useful gap filled with non-magnetisable material between said two portions and affixing the two portions to each other, at least two plates of sintered, oxidic, ferromagnetic material arranged between said magnetic circuits, at least one plate of electrically conducting, non-magnetisable material arranged between said two plates, a plate of electrically conducting, non-magnetisable material positioned between one circuit and the adjacent plate of sintered, oxidic ferro-



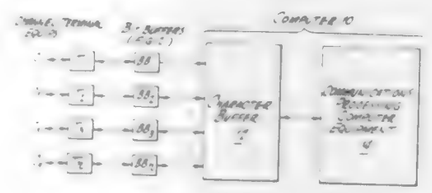
magnetic material, a plate of electrically poor conducting, magnetisable, ferromagnetic material positioned adjacent at least in part to the rear side of said carrier, said plate having a width at least equal to the over-all width of the tracks and their intermediate spaces, said plate being adjustably arranged in the direction of movement of the carrier in an asymmetrical position relative to an imaginary line lying centrally between a gap of a recording circuit and a gap of a circuit reproducing the same track.

3,373,417
POSITIONER FOR MAGNETIC HEADS COACTING WITH MULTITRACK MAGNETIC RECORDS
Jaap M. Unk, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,756
4 Claims. (Cl. 340—174.1)



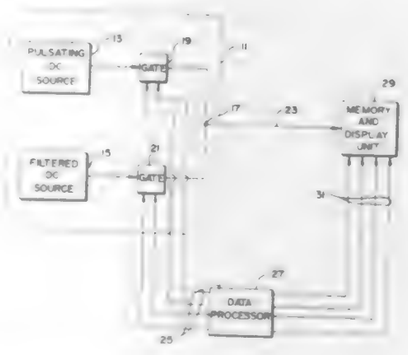
1. Positioning apparatus for positioning at least one magnetic transducer adjacent one track of a plurality of tracks on a magnetic record carrier, comprising: a plurality of driver means, each driver being adapted to be driven into one of two positions in response to an input signal, a plurality of differential levers corresponding in number to said plurality of driver means, a plurality of coupling means each coupling one driver to its corresponding differential lever, said coupling means imparting a substantially sinusoidal movement to each lever in response to a change in position of the corresponding driver, each lever having two ends which are a fixed distance apart and are at different distances respectively from an intermediate point actuated by said coupling means, a plurality of link means linking together predetermined ends of said levers, and at least one magnetic head coupled to said link means, said head having a substantially sinusoidal movement in response to the substantially sinusoidal lever movements and assuming a particular position determined by the particular positions of said plurality of driver means in response to an input signal.

3,373,418
BIT BUFFERING SYSTEM
Robert H. G. Chan, Barrington, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 14, 1964, Ser. No. 396,207
7 Claims. (Cl. 340—172.5)



A bit buffering system for use between many real-time digital communications channels each supplying and receiving bit-serial information at its own independent rate, and a communications processing computer capable of receiving information from and supplying information to the many communications channels in an ordered time sequence. The buffering system employs a bit buffer between each communications channel and a computer means capable of performing character buffering. Each bit buffer includes a two-stage input register for temporarily storing a received information bit and input bit status information. Each bit buffer also contains a three-stage output register for temporarily storing one outgoing information bit and output status information.

3,373,419
MULTI-MODE MEMORY AND DISPLAY SYSTEM
Flavius A. Mathamel, Allen Park, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 9, 1965, Ser. No. 438,293
17 Claims. (Cl. 340—324)

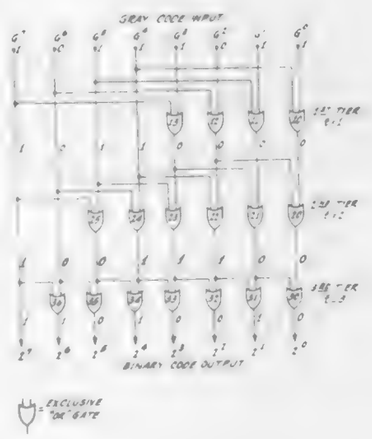


A multi-mode information memory and display system having a plurality of modules respectively including an indicator lamp and a gate controlled rectifier connected in series to a common bus. Pulsating and steady mode control currents are selectively gated individually or in combination, to the common bus to respectively operate the lamp in a visual indication mode and the gate controlled rectifier in a storage mode. Data signals applied to the gates of the controlled rectifiers determine the particular modules which are activated.

3,373,420
MOVABLE CONTROL BOXES FOR CONTROLLING MACHINE TOOLS
Rene Deflandre, Paris, France, assignor to Societe DEREFA, Etablissement pour le Developpement, Recherches et Fabrications Industrielles, Vaduz, Liechtenstein
Filed Apr. 20, 1965, Ser. No. 449,564
Claims priority, application France, Apr. 28, 1964, 972,565
8 Claims. (Cl. 340—324)

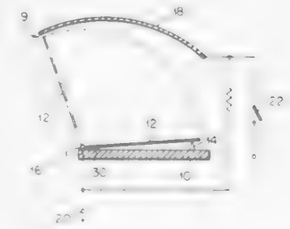
This invention is concerned with a suspended machine tool control assembly composed of two parts, a first part that is fixed to the end of a flexible suspension member and carries certain ancillary apparatus for checking and regulating members in the machine, and a second part that is rotatably supported by the first part and carries the apparatus for controlling the machine members.

3,373,421
CONVERSION FROM GRAY CODE TO BINARY CODE
Mao C. Wang, Camden, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 15, 1964, Ser. No. 404,117
4 Claims. (Cl. 340—347)



A Gray-to-binary code converter includes N bit input terminals connected through respective signal paths to an equal number of output terminals. The signal paths include tiers of exclusive "or" gates, the number of tiers being equal to $\log_2 N$ where N is a number of bits equal to an integral power of two. Each tier includes a number equal to $N-N/2^t$ of exclusive "or" gates having inputs coupled to respective low-order signal paths, where t is the number of the particular tier. Each gate also has an input coupled to a respective signal path $N/2^t$ bits positions removed in the higher order direction.

3,373,422
SIGNALLING DEVICE HAVING VANE ROTATED ABOUT AN AXIS BY AN ELECTROSTATIC FIELD
William R. Aiken, Los Altos Hills, Calif., assignor to Electronix Ten, Inc., San Francisco, Calif., a corporation of California
Filed Sept. 21, 1965, Ser. No. 489,017
10 Claims. (Cl. 340—373)



In a signalling device of the type constituted by a vane mounted for swinging movement from a first position to an angularly displaced second position, wherein movement of the vane is effected by setting up electrostatic fields between the vane and adjacently located electrodes, the improvement of providing an electrode of arched or curved conformation adjacent the intended path of movement of an outer edge of the vane, and of arranging said arched electrode in such a manner that the electrostatic field established between said vane and said arched electrode increases in strength in the direction of the intended movement of the vane from said first toward said second position. This is accomplished by increasing the width of the electrode in the direction of the intended movement of the vane and/or by locating said electrode in such a manner that it converges toward the path of movement of the outer edge of said vane in the direction of the intended movement of said vane.

3,373,423
LOW-LEVEL FLIGHT SYSTEM
Kurt Levy, Vestal, N.Y., assignor to General Precision Systems Inc., a corporation of Delaware
Filed May 26, 1965, Ser. No. 458,904
9 Claims. (Cl. 343—5)

7. A passive low-level flight system operable to display to the pilot of an operational aircraft simulated terrain elevation features, comprising, in combination:

a photographic film transparency having encoded thereon in gray scale variations terrain elevation contours representative of the height above sea level of each incremental portion of the terrain located in the area over which the aircraft is to be flown;

a flying-spot-scanner and a photo-sensitive device;

means positioning said transparency intermediate said flying-spot-scanner and said photo-sensitive device whereby said gray scale variations modulate the light transmitted by said scanner incident upon said photo-sensitive device, said positioning means being responsive to the location of said aircraft to emplace successive specific regions of said transparency in the area scanned by said flying-spot-scanner;

first and second deflection circuits coupled to said flying-spot-scanner to deflect the light beam provided thereby across said successive specific regions of said transparency;

computer circuitry coupled to said photo-sensitive device to provide a modified video signal proportional to h_1, $R(t)$, and $e'(t)$ wherein

h_1 is the height of the aircraft above the terrain as encoded upon said transparency,

$R(t)$ is the linear range between the aircraft position and the terrain being viewed, and

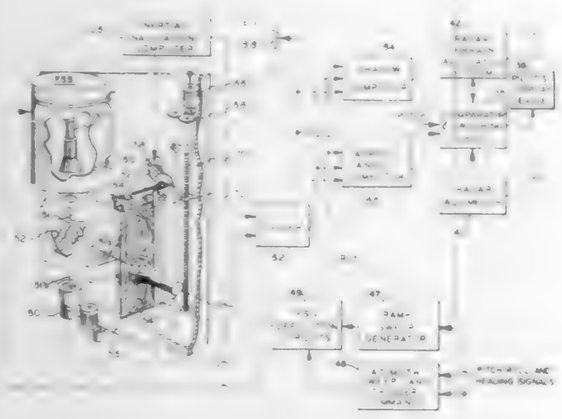
$e'(t)$ is the output of said photo-sensitive device as modulated by said gray scale variations encoded upon said transparency;

a pilot's display device having at least one input terminal;

a comparison and switching circuit interconnecting said modified video signal with said at least one input terminal normally operable to couple said modified video signal to said at least one input terminal;

radar means for deriving a signal h_2 corresponding to the actual height of the aircraft above the terrain; and

said comparator and switching circuit being further operable to decouple said modified video signal from said at least one input terminal when the magnitudes of h_1 and h_2 differ by a predetermined amount.



8. The system of claim 7 including,

a radar terrain avoidance system;

circuit means coupling the output of said radar terrain avoidance system to an input to said comparator and switching circuit; and

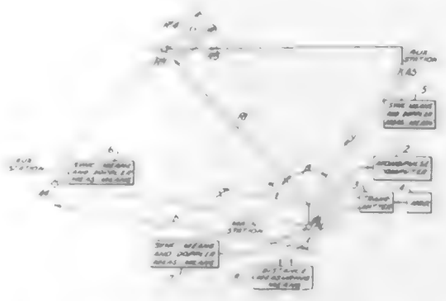
said comparator and switching circuit additionally operable to normally maintain said radar terrain avoidance system inactive when the magnitudes of h_1 and h_2 differ by less than said predetermined amount and to render said radar terrain avoidance system active and couple the output therefrom to said pilot's display device when the magnitudes of h_1 and h_2 differ by more than said predetermined amount.

3,373,424
TRACKING AND SYNCHRONIZING SYSTEM

Leo Maria Hendrik Thyssens, Ekeren, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 29, 1966, Ser. No. 546,255
Claims priority, application Belgium, Apr. 30, 1965, 663,241
22 Claims. (Cl. 343—6)

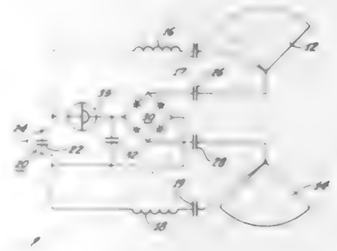
A system for determining the position and velocity vectors of a satellite or the like wherein the position is obtained by means of an interferometer system and a monopulse system, both systems being located in a main tracking station, and the velocity vector is obtained by measuring in the main and auxiliary tracking stations the Doppler frequency shifts of a carrier wave emitted in the main station and returned by the satellite transponder. The velocity measurments are synchronized in a novel manner by means of phase-locked loops located in the stations.



3,373,425
TUNNEL DIODE CIRCUIT UTILIZED TO CONTROL THE REPLY OF A PASSIVE TRANSPONDER

Erwin E. Barischoff, Quartz Hill, Calif., assignor to Allen L. Well, Redondo Beach, Calif.

Filed Apr. 14, 1967, Ser. No. 631,003
7 Claims. (Cl. 343—6.8)

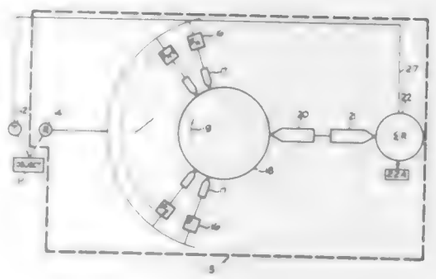


A passive transponder comprised of a disk with a dipole antenna and a rectifier with a storage type load for accumulating electrical energy; a resonant circuit is coupled intermittently to the store for oscillatory discharge thereof, the oscillations to be transmitted by the antenna.

3,373,426
METHOD AND SYSTEM FOR RANGE AND RELATIVE VELOCITY DETECTION

Park H. Miller, Jr., Del Mar, Calif., assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware

Filed Apr. 1, 1966, Ser. No. 539,352
29 Claims. (Cl. 343—7.7)

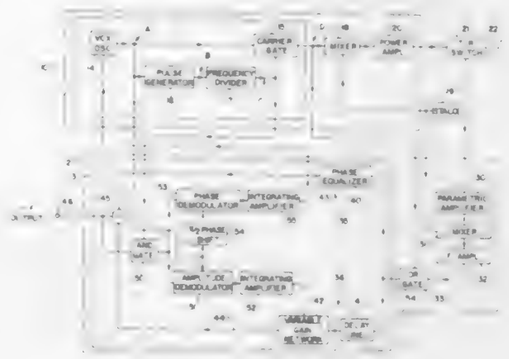


A method and apparatus for detecting relative motion of two objects in a medium is provided in which short single frequency wave trains are applied to the medium with predetermined cycles having first time relationships. After the wave trains have traveled between the objects detection signals are produced which are systematically related to the applied wave trains and which each have a cycle corresponding to the predetermined cycle of the applied wave train. The detection signals are then combined with these corresponding cycles in second time relationships to provide a compressed pulse. Relative motion of the objects may cause a change in the shape of this pulse which may be adjusted by changes in either the first or second time relationships. Any or all of these changes are then utilized to determine the relative motion.

3,373,427
DELAY LINE CANCELLER FOR RADAR SYSTEM

Thomas W. J. Kennedy and Edgar J. Fischer, Ottawa, Ontario, Canada, and John O. Taylor, Winchester, Mass., assignors to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Nov. 23, 1966, Ser. No. 596,536
3 Claims. (Cl. 343—7.7)

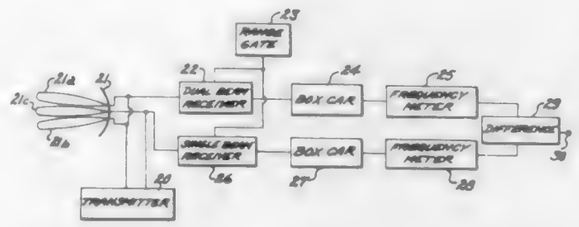


A moving target indicator, for a radar system, utilizing a delay line canceller; in which during the transmitting interval, a sample of the transmitted signal is fed through the calceller. This produces a control signal at the canceller's output which is used to control the period of the transmitted pulse signals so that the period is fully synchronized with the time delay encountered in the canceller.

3,373,428
METHOD AND SYSTEM FOR RADAR VELOCITY MEASUREMENTS

David Atlas, Newton, Mass.
(828 Chestnut St., Waban, Mass. 02168)

Filed July 28, 1965, Ser. No. 475,612
12 Claims. (Cl. 343—8)

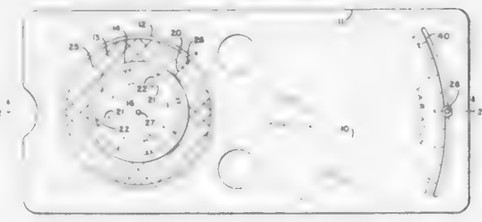


A method and system for measurement of wind velocity by transmitting two radar beams simultaneously toward distributed targets (e.g. precipitation, ground) in such a manner that the echoes in one beam produce a small positive Doppler shift, and those in the other an equal negative shift. The returning echoes beat with one another to produce a fluctuating return whose variance is proportional to the sum of the intrinsic variance of the targets within a single beam plus the cross-beam velocity of the targets. The single beam variance is then subtracted out either by measuring on one beam alone or using a third beam. The remainder is directly proportional to target velocity.

3,373,429
NAVIGATIONAL INSTRUMENT

Warren D. Anderson, 421 Ocean Drive W., Stamford, Conn. 06902

Filed Oct. 24, 1965, Ser. No. 504,585
6 Claims. (Cl. 343—115)

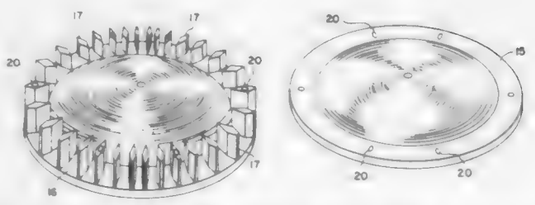


A navigational instrument which eliminates the necessity for reading any bearing angles in sighting a known object and plotting the corresponding line of position on a chart.

3,373,430
OMNIDIRECTIONAL MICROWAVE SPACECRAFT ANTENNA

William F. Croswell and Melvin C. Gilreath, Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Mar. 15, 1965, Ser. No. 440,039
12 Claims. (Cl. 343—708)

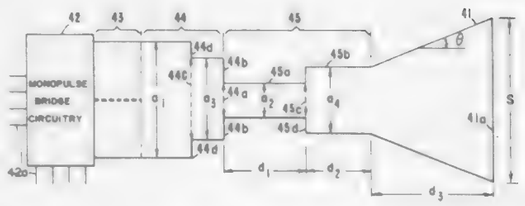


An omnidirectional antenna utilized with a spacecraft. The antenna is a biconical horn placed between segments of the spacecraft. The antenna halves are connected by wedge-shaped scattering obstacles which offer minimum interference to a wave, and re-radiate obstructed portions of the wave.

3,373,431
LOW-NOISE SINGLE APERTURE MULTIMODE MONOPULSE ANTENNA FEED SYSTEM

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Paul A. Jensen, Fullerton, Calif.

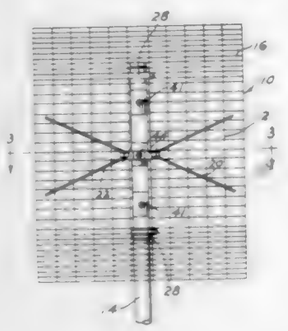
Filed Nov. 2, 1964, Ser. No. 408,438
8 Claims. (Cl. 343—786)



A feed system which includes a monopulse bridge capable of providing sum and dual plane (H and E) difference modes for two orthogonal polarization orientations. A multimode matching section is connected to match

the principal modes from the bridge and to inhibit undesired modes. An excitation and control section is used to control the phases of the different modes, as well as, to excite additional modes. When these additional modes are combined with the sum modes they minimize the side lobes of the radiated sum patterns in both the E and H planes.

3,373,432
ULTRAHIGH-FREQUENCY TELEVISION ANTENNA
Walter E. Breneman, 579 W. College Ave., York, Pa. 17404
Filed June 10, 1965, Ser. No. 462,896
17 Claims. (Cl. 343—808)

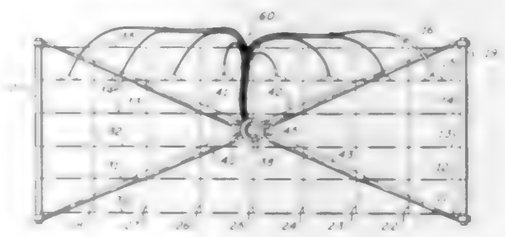


1. A television receiver antenna comprising in combination, an elongated supporting bracket having means on the ends attachable to a supporting pole, a reflector grid having a planar central portion and integral opposite end wing portions disposed at obtuse angles to said central portion, a spacing bracket having opposite ends spaced laterally from the plane of the central portion thereof, connecting means engaging said opposite ends of said spacing bracket and said supporting bracket with the central portion of said reflector grid sandwiched therebetween and the central portion of said spacing bracket extending outward from said reflector grid, a pair of V-shaped receiving dipoles, a spacing support of insulating material connected to said central portion of said spacing bracket and projecting outwardly therefrom, and means connecting the apex portions of said dipoles to said spacing support to support said dipoles a predetermined distance forwardly from said reflector grid and parallel to the central portion thereof.

3,373,433
DUAL LINEAR/CIRCULAR POLARIZATION SPIRAL ANTENNA
Leonard L. Blaisdell, Medway, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 16, 1964, Ser. No. 418,839
2 Claims. (Cl. 343—850)

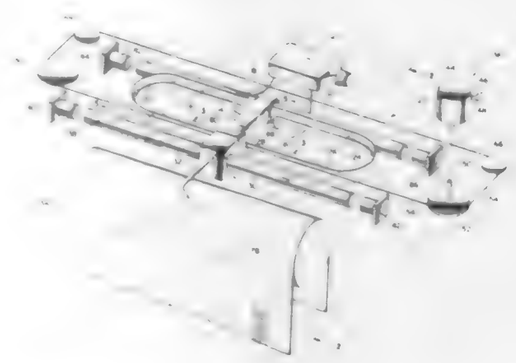
A spiral antenna system capable of selectively providing linearly or circularly polarized radiation. The antenna has a pair of spiral arms, differing in length by one quarter wavelength, which are energized by a pair of quadrature-phased signals from a quadrature feed device to provide linear polarization. A 90° plane shifter can be selectively interconnected between the feed device and the shorter of the two spiral arms to provide circular polarization.

3,373,434
LIGHTWEIGHT ANTENNA FORMED FROM NET OF DIELECTRIC CORD, HAVING METALIZED SECTORS THEREON
John J. Lorenzo, Rosedale, George O. Nagel, Massapequa Park, and Leon Schwartzman, Brooklyn, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Dec. 1, 1964, Ser. No. 415,003
1 Claim. (Cl. 343—879)



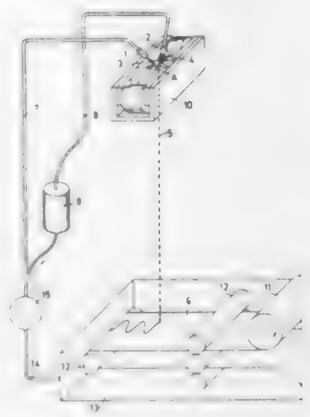
A lightweight portable antenna having a collapsible support member comprising a net-like structure of dielectric cords. Selected ones of the cords are covered by conductive segments to provide the elements of an antenna having a shape conforming to the contour of the selected cords of the net-like support structure.

3,373,435
RECORDER WITH FLEXIBLE LOOP SUPPORT FOR INK SUPPLY TUBING
Roger K. Strong, Doylestown, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 30, 1967, Ser. No. 612,725
10 Claims. (Cl. 346—140)



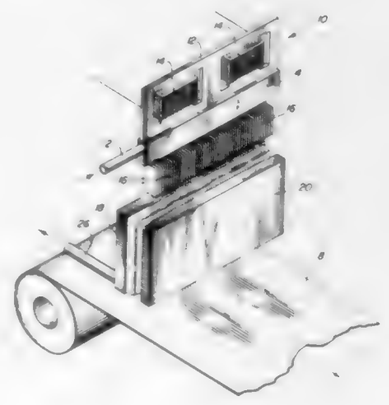
A high speed recording apparatus for inscribing a continuous solid line on a chart containing a unitary elongated loop of flexible material and a loop of capillary tubing operably connected therewith for joint rolling movement about a fixed portion of the flexible loop by the movement of a carriage that is fixedly connected thereto to effect a feeding of ink from a stationary ink supply through the capillary tubing to and through a reservoir having a flexible wall and/or the tip of a pen mounted on the carriage as this carriage-pen unit is moved at recording speeds up to and/or exceeding four hundred inches per second along and in contact with the chart.

3,373,436
INK JET RECORDER
Michel Auphan, Neuilly-sur-Seine, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 3, 1965, Ser. No. 452,547
Claims priority, application France, May 6, 1964, 973,558
9 Claims. (Cl. 346—75)



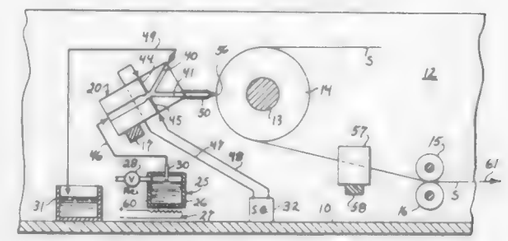
A recording apparatus for recording information on a surface employs electrically conductive fluid directed from a pair of nozzles closely arranged to one another and electrically insulated. The nozzles are positioned such that their axes intersect at a point between the nozzles and the recording surface and from this point travel as a single stream towards the recording surface. A potential difference is applied between the two nozzles and a gradient appears along the length of the stream from nozzle to nozzle. Movement of the single stream is controlled by means of a modulating signal applied as an electrostatic field to one of the streams.

3,373,437
FLUID DROPLET RECORDER WITH A PLURALITY OF JETS
Richard G. Sweet, 4076 Orme Ave., and Raymond C. Cumming, 4129 Donald Drive, both of Palo Alto, Calif. 94306
Continuation-in-part of application Ser. No. 354,721, Mar. 25, 1964. This application Aug. 1, 1967, Ser. No. 660,163
16 Claims. (Cl. 346—75)



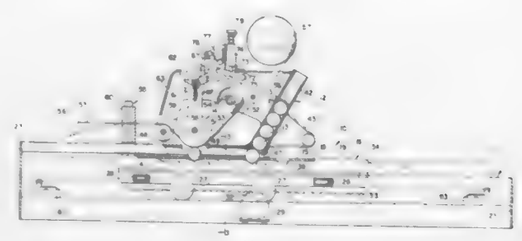
Signal controlled recording apparatus having an array of jet nozzles each producing a succession of discrete droplets of writing fluid. The droplets are electrostatically and selectively deflected in response to signal values to effect either droplet deposition on a record medium or droplet interception. The controlling signals may be programmed in accordance with a character matrix in synchronism with the rate of droplet formation.

3,373,438
JET PRINTER
David Louis Hochberg, New York, N.Y., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,419
1 Claim. (Cl. 346—75)



Fluid jet printing apparatus having a plurality of wall attachment type fluidic devices each of which is supplied with a printing fluid under pressure and each of which has two output lines. A nonprinting output line of each fluidic device is connected to a fluid reservoir while the other printing output line of each fluidic device is coupled with a nozzle that is adapted to direct the printing fluid against a record sheet. The printing fluid flowing through each fluidic device is selectively directed through the printing or the nonprinting outlet lines thereof by means of predetermined control signals.

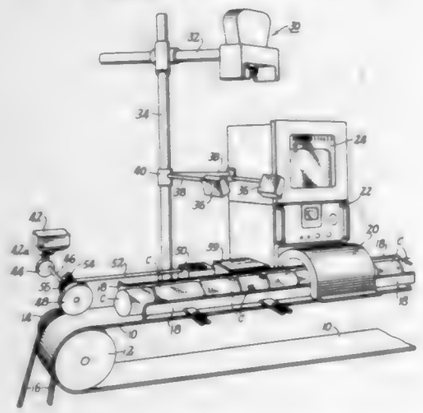
3,373,439
CODE-PUNCHED DOCUMENT RECORDING DEVICE
Kenneth Porteous, Sr., Glendale, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 22, 1962, Ser. No. 196,637
20 Claims. (Cl. 346—79)



1. An apparatus for sensing and recording data items coded in columns as a series of perforations on a document, comprising:
- a frame;
- a plurality of sensing elements;
- magazine means fixed on said frame for receiving, storing, and delivering the sensing elements into the perforations in the document;
- recording means on said frame for registering each sensing element in the perforations in the document;
- carriage means mounted for supporting the document and moving it columnwise past the magazine means and the recording means; and
- said carriage means having a plurality of element-receiving depressions equal in number to the maximum number of data items codable in a column of the document and in spaced increments substantially equal thereto so as to underlie perforations in the document whereby the carriage means moves a

document past the magazine means to deposit the sensing means in the document perforations and also past the recording means where the sensing means are registered.

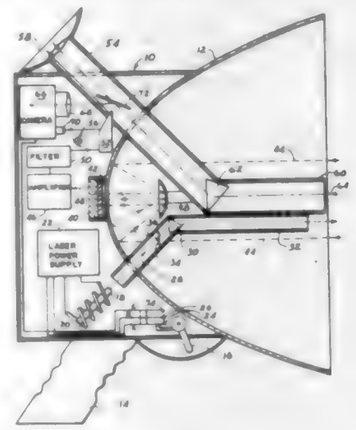
3,373,440
APPARATUS FOR PHOTOGRAPHING WELL CORE SAMPLES
Ralph E. Jenkins, Irving, and Harold T. Barnaby, Duncanville, Tex., assignors to Core Laboratories, Inc., Dallas, Tex.
Filed Feb. 1, 1966, Ser. No. 524,169
3 Claims. (Cl. 346—107)



Well core samples are photographed by arranging them on a conveyor end-to-end in a string in the same order they occupied prior to removal from the well borehole, moving the conveyor continuously while actuating the shutter of a camera directed at the string by automatic means coupled to the conveyor so that the shutter is actuated at uniform intervals during which the string moves a distance equal to the length of the field of view of the camera, and advancing the film between successive exposures a distance substantially equal to the length of the film exposed on each such actuation to form a continuous strip photograph of the string.

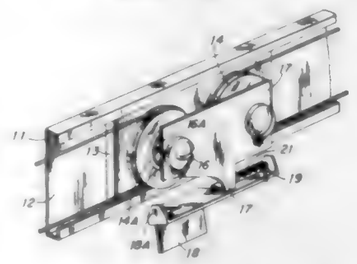
3,373,441
LASER SPEED DETECTOR
Ernest A. Zadig, 1 Bouton St., South Norwalk, Conn. 06854
Filed June 17, 1966, Ser. No. 558,440
5 Claims. (Cl. 346—107)

1. A speed detector comprising a laser for the generation of a narrow coherent beam of light, means for projecting said light towards a target vehicle, means for receiving a portion of said transmitted light reflected from said target vehicle, means for mixing said received reflected light with a portion of said generated beam, photodetector means to detect the beat frequency generated as a result of mixing said reflected and said generated beams, indicator means to indicate the target speed in response to



variation in frequency of said photodetector signal, and optical means for viewing a portion of said target vehicle upon which said laser beam impinges.

3,373,442
PEN CARRIAGE
John A. Belanich, Delbert C. Baars and Olof Kok, San Diego, Calif., assignors, by mesne assignments, to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 25, 1965, Ser. No. 427,583
1 Claim. (Cl. 346—139)



1. A recording pen tracking system comprising:
track means having a guide channel therein,
a single self-lubricating bearing block slidably mounted within said guide channel,
first and second pulley wheels,
means for rotatably attaching said pulley wheels to said single self-lubricating bearing block for imparting motion thereto within said guide channel,
a first plate fixedly attached to said bearing block by said means for attaching said pulley wheels,
a second plate hingedly attached to said first plate, and
spring means for biasing said second plate with respect to said first plate.

DESIGNS

MARCH 12, 1968

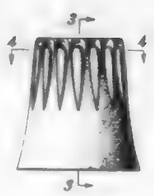
210,443
JUG OR SIMILAR ARTICLE
Stanley I. Mason, Jr., Fullerton, Calif., assignor to Hunt-Wesson Foods, Inc., Fullerton, Calif., a corporation of Delaware
Filed Jan. 6, 1967, Ser. No. 5,330
Term of patent 14 years
(Cl. D9—39)

210,444
BOTTLE
Andres Sancho Cortina, Barcelona, Spain, assignor to Andres Sancho, S.A., Barcelona, Spain
Filed Dec. 13, 1966, Ser. No. 5,020
Term of patent 14 years
(Cl. D9—54)

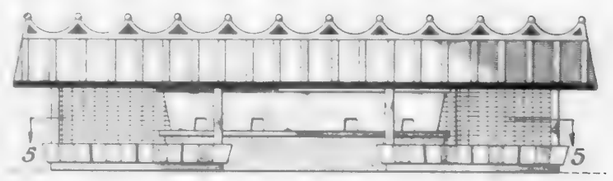
210,445
BOTTLE
Robert Emmett Bourke, Weston, Conn., assignor to The Coca-Cola Company, Atlanta, Ga., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 5,579
Term of patent 14 years
(Cl. D9—136)

210,446
CONTAINER FOR NEEDLES OR THE LIKE
Donald R. Bowes, Fanwood, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Dec. 22, 1966, Ser. No. 5,149
Term of patent 14 years
(Cl. D9—172)

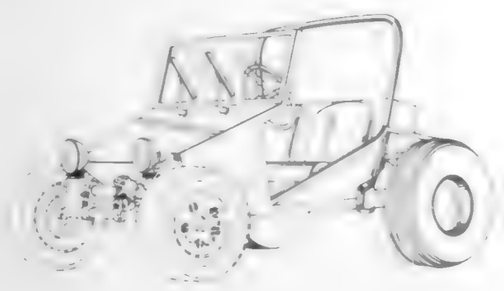
210,447
CAP FOR A JUG OR THE LIKE
Harold J. Vanderhyde, North Merrick, N.Y., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 11, 1967, Ser. No. 5,388
Term of patent 14 years
(Cl. D9—285)



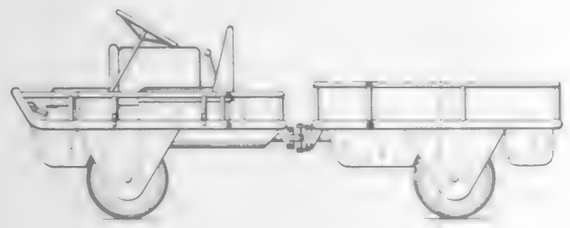
210,448
RESTAURANT
Lee V. Burns, Glendale, David A. Deane, Hollywood, and Monroe T. Leung, Los Angeles, Calif., assignors to Federal Sign and Signal Corporation, Blue Island, Ill., a corporation of New York
Filed Nov. 21, 1966, Ser. No. 4,750
Term of patent 14 years
(Cl. D13—1)



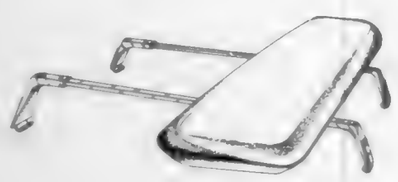
210,449
VEHICLE BODY WITH REAR WHEEL UNIT
Hilder T. Thompson, 1353 Santiago Ave., Santa Ana, Calif. 92701
Filed Oct. 17, 1966, Ser. No. 4,291
Term of patent 7 years
(Cl. D14—3)



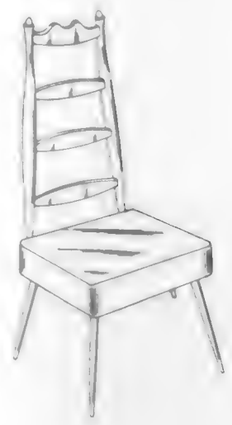
210,450
VEHICLE FOR USE IN SNOW AND ON UNIMPROVED LAND
Joseph A. Poltorak, 1716 Robert Road, Auburn, Mich. 48611
Filed May 9, 1967, Ser. No. 7,042
Term of patent 14 years
(Cl. D14—3)



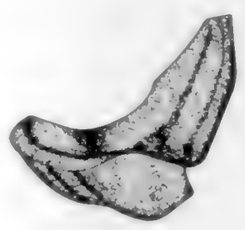
210,451
SKI POD
Vincent E. Gardner, Wayne, Mich., assignor to Marilyn Sue Powers, Allen Park, Mich.
Filed Apr. 12, 1967, Ser. No. 6,653
Term of patent 14 years
(Cl. D14—27)



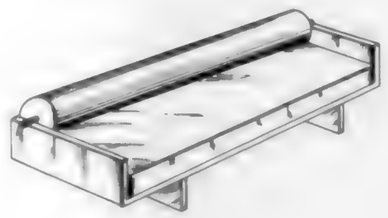
210,452
CHAIR
John D. Beinert, Babylon, N.Y., assignor to Spiegel Industries Corp., Teaneck, N.J., a corporation of New Jersey
Filed Mar. 13, 1967, Ser. No. 6,206
Term of patent 14 years
(Cl. D15—1)



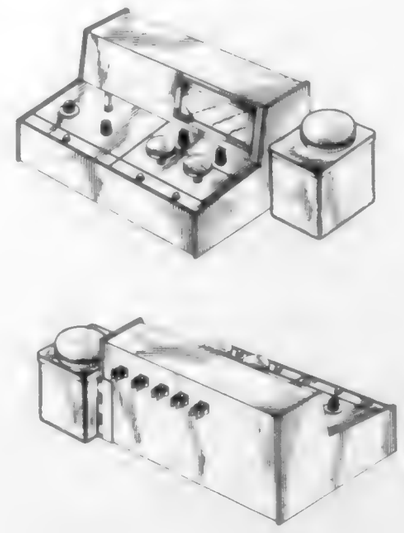
210,453
ROCKING CHAIR
Vincent E. Gardner, Wayne, Mich., assignor to Marilyn Sue Powers, Allen Park, Mich.
Filed Apr. 12, 1967, Ser. No. 6,652
Term of patent 14 years
(Cl. D15—6)



210,454
SOFA OR SIMILAR ARTICLE
Vladimir Kagan, 1225 Park Ave., New York, N.Y. 10028
Filed Mar. 10, 1967, Ser. No. 6,150
Term of patent 7 years
(Cl. D15—11)

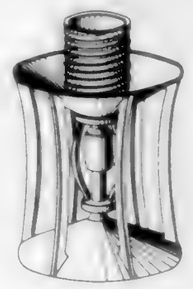


210,455
TITRATION INSTRUMENT
Theodore Christie and Joseph J. Kregzdys, Chicago, Ill., assignors to Precision Scientific Company, Chicago, Ill., a company of Illinois
Filed May 29, 1967, Ser. No. 7,286
Term of patent 3½ years
(Cl. D16—2)



210,456
SPRINKLER HEAD
Gary Lewis Mease, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 10, 1966, Ser. No. 4,605
Term of patent 14 years
(Cl. D23—6)

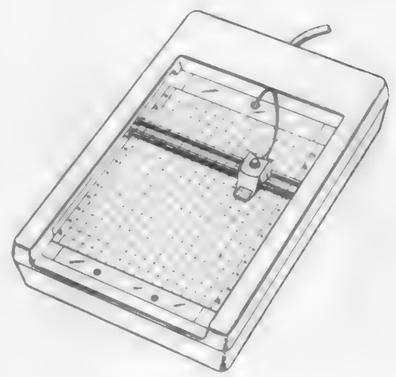
210,457
SPRINKLER HEAD
Gary Lewis Mease, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 10, 1966, Ser. No. 4,606
Term of patent 14 years
(Cl. D23—6)



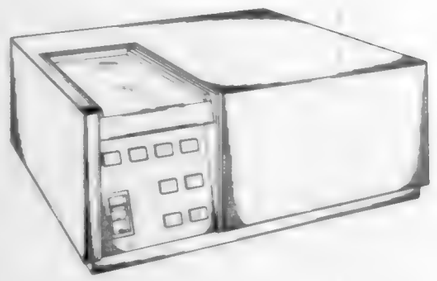
210,458
SPRINKLER HEAD
Gary Lewis Mease, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 10, 1966, Ser. No. 4,607
Term of patent 14 years
(Cl. D23—6)

210,459
SPRINKLER HEAD
Gary Lewis Mease, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 10, 1966, Ser. No. 4,608
Term of patent 14 years
(Cl. D23—6)

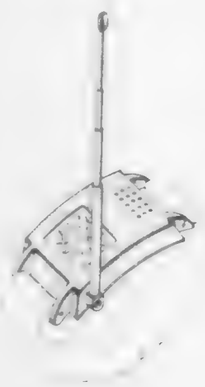
210,460
DATA ENCODING UNIT
Erneil Eugene Gilbert, Garden Grove, and Patrick F. Conners, Arcadia, Calif., assignors to Bolt Beranek and Newman, Inc., Cambridge, Mass.
Filed Mar. 22, 1966, Ser. No. 1,586
Term of patent 14 years
(Cl. D26—5)



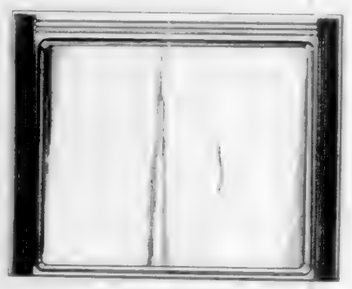
210,461
DATA TRANSMISSION TERMINAL
Collan B. Kneale, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 24, 1967, Ser. No. 5,946
Term of patent 14 years
(Cl. D26—5)



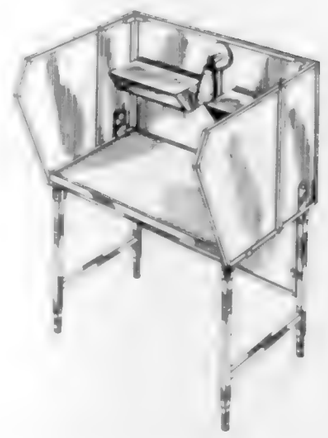
210,462
WRISTWATCH COMMUNICATION TRANSMITTER
Jack C. Roberts, 23660 Pacific Coast Highway, Malibu, Calif. 90265, and Charles J. Smith, 11459 Bellagio Road, Bel Air, Calif. 94558
Filed Jan. 26, 1967, Ser. No. 5,572
Term of patent 14 years
(Cl. D26—14)



210,463
TRAY INSERT FOR A FURNITURE DRAWER
Joseph R. Sander, University City, Mo., assignor to H. Robert Industries, Inc., St. Louis, Mo., a corporation of Missouri
Filed Oct. 27, 1966, Ser. No. 4,440
Term of patent 14 years
(Cl. D33—1)



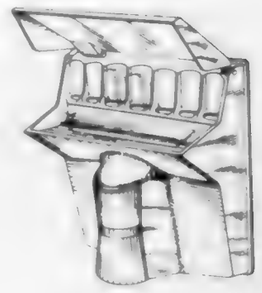
210,464
PORTABLE SHIELDED DESK
Frederick W. Howlett, 4519 30th St., San Diego, Calif. 92116
Filed July 11, 1966, Ser. No. 3,037
Term of patent 14 years
(Cl. D33—7)



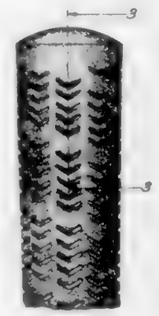
210,465
COMBINED DESK, CAROM POOL TABLE AND RECORD PLAYER UNIT
Allen N. Eide, 2001 Winnetka Ave. N., Minneapolis, Minn. 55427
Filed Feb. 9, 1967, Ser. No. 5,749
Term of patent 14 years
(Cl. D33—7)

210,466
PEDESTAL TABLE
John B. Thorn, Lynchburg, and Andre Bus, Altavista, Va., assignors to The Lane Company Inc., Altavista, Va., a corporation of Virginia
Filed Apr. 10, 1967, Ser. No. 6,610
Term of patent 14 years
(Cl. D33—14)

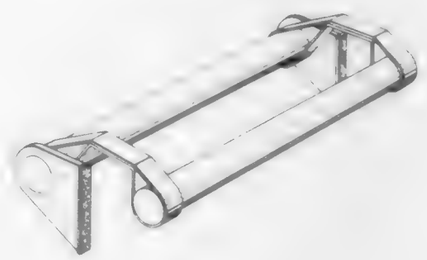
210,467
COMBINED TOOTHBRUSH AND PASTE HOLDER AND CUP DISPENSING UNIT
Vincent E. Gardner, Wayne, Mich., assignor to Marilyn Sue Powers, Allen Park, Mich.
Filed Apr. 12, 1967, Ser. No. 6,647
Term of patent 14 years
(Cl. D33—26)



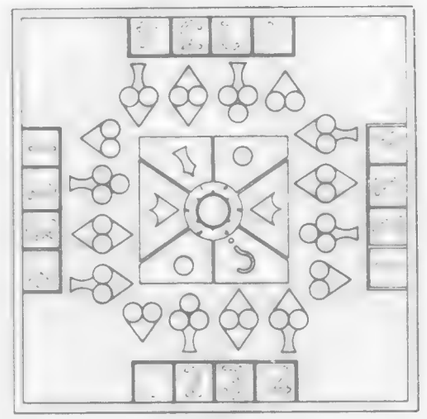
210,468
GOLF CLUB GRIP
Francis T. Brewer, Hinsdale, Ill., assignor, by mesne assignments, to Wilson Sporting Goods Co., River Grove, Ill., a corporation of Delaware
Filed Apr. 26, 1966, Ser. No. 2,029
Term of patent 14 years
(Cl. D34—5)



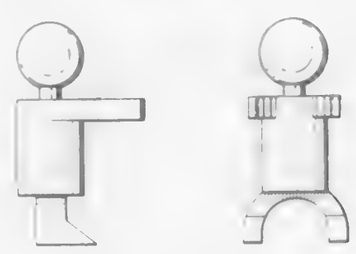
210,469
EXERCISE BAR
Henrik Baekgaard Sejersen, Hojstrupvej 44, Odense, Fyn, Denmark
Filed Mar. 6, 1967, Ser. No. 6,083
Claims priority, application Denmark Sept. 6, 1966
Term of patent 14 years
(Cl. D34—5)



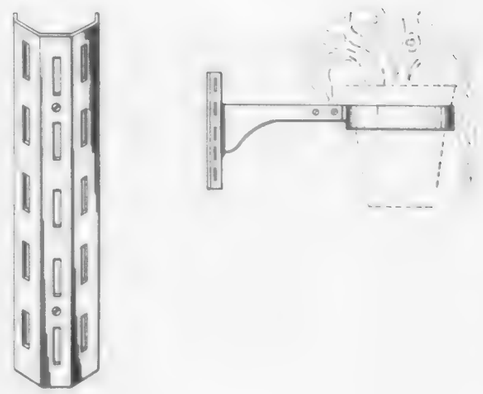
210,470
GAME BOARD OR THE LIKE
James E. Ison, 719 Bromley Road, Ludlow, Ky. 41016
Filed May 23, 1967, Ser. No. 7,232
Term of patent 7 years
(Cl. D34—5)



210,471
TOY CONSTRUCTION FIGURE
Rene Ach, 47 Ave. des Gobelins, Paris 13, France
Filed Mar. 1, 1967, Ser. No. 6,020
Claims priority, application Great Britain Oct. 13, 1966
Term of patent 14 years
(Cl. D34—15)

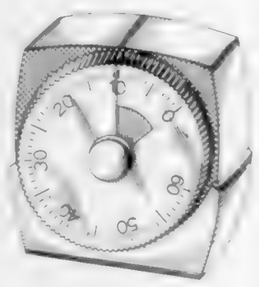


210,472
ADJUSTABLE FLOWER POT HOLDER BRACKET OR THE LIKE
Richard L. Vogt, 1 Brookside Ave., Bellport, N.Y. 11713
Filed Feb. 14, 1967, Ser. No. 5,808
Term of patent 7 years
(Cl. D35—3)

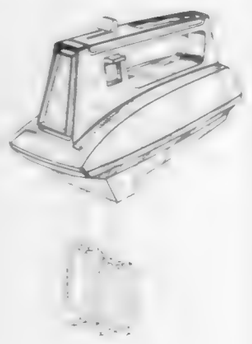


210,473
CLOCK OR SIMILAR ARTICLE
Harry L. Laylon, Syracuse, N.Y., and William V. Judson, Westport, Conn., assignors to General Electric Company, a corporation of New York
Filed Apr. 3, 1967, Ser. No. 6,498
Term of patent 7 years
(Cl. D42—7)

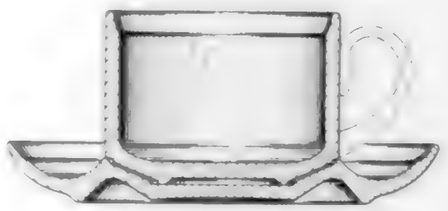
210,474
TIMER
David W. Miley, Peru, Ill., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Aug. 22, 1967, Ser. No. 8,347
Term of patent 14 years
(Cl. D42—7)



210,475
MIXER
Frank J. Di Sesa, Jr., Lombard, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed May 24, 1967, Ser. No. 7,247
Term of patent 14 years
(Cl. D44—1)

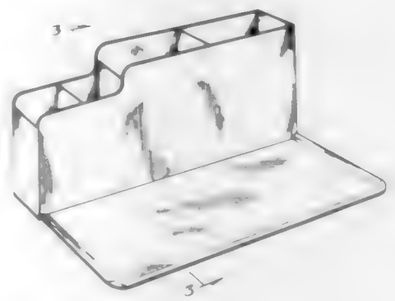


210,476
COMBINED CUP AND SAUCER SERVING UNIT
Gerald Gulotta, New York, N.Y., assignor to Block China Company, New York, N.Y., a partnership composed of Elizabeth Block, Jay L. Block, and Robert C. Block
Filed Nov. 10, 1966, Ser. No. 4,623
Term of patent 14 years
(Cl. D44—9)



210,477
TRIVET
Edward G. Beyer, Santa Monica, Calif., assignor to Gamma Associates, Incorporated, a corporation of California
Filed June 9, 1967, Ser. No. 7,420
Term of patent 14 years
(Cl. D44—10)

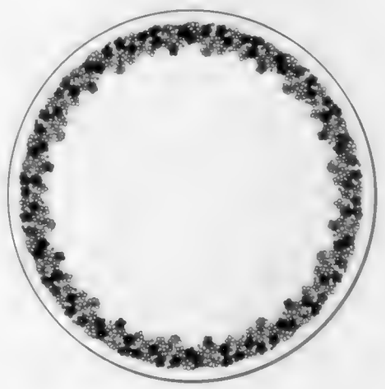
210,478
TRAY FOR COCKTAIL BAR SUPPLIES
Albert L. Fehn, 5042 Winkle Ave., Santa Cruz, Calif. 95060
Filed July 31, 1967, Ser. No. 8,061
Term of patent 14 years
(Cl. D44—10)



210,479
PLATE OR SIMILAR ARTICLE
Ottorino N. Mercadante, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 2, 1967, Ser. No. 8,804
Term of patent 14 years
(Cl. D44—15)

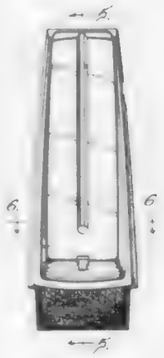
210,480
PLATE OR SIMILAR ARTICLE
Robert R. Gibson, Big Flats Village, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 3, 1967, Ser. No. 8,842
Term of patent 14 years
(Cl. D44—15)

210,481
PLATE OR SIMILAR ARTICLE
Sara L. Balbach, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 3, 1967, Ser. No. 8,843
Term of patent 14 years
(Cl. D44—15)

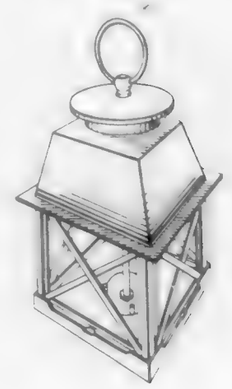


210,482
HAND GRIPPER FOR HOLDING FISH
Theodore J. Tomaluolo, 42 Fairfield Ave., Hartford, Conn. 06114
Filed Feb. 1, 1967, Ser. No. 5,650
Term of patent 14 years
(Cl. D44—29)

210,483
SUPPORTING STAND FOR AN ELECTRIC KNIFE
Richard S. Hart, Wheaton, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 12, 1967, Ser. No. 7,438
Term of patent 14 years
(Cl. D44—29)

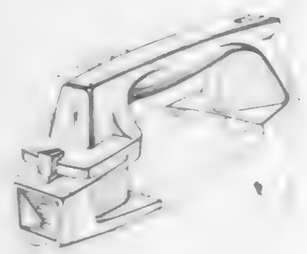


210,484
GAS LAMP
George A. McNeff, P.O. Box 34320, Dallas, Tex. 75231
Filed July 26, 1967, Ser. No. 8,003
Term of patent 14 years
(Cl. D48—31)



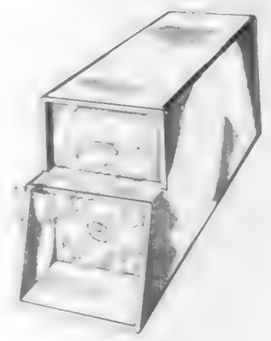
210,485
POLE
Maurice J. Rhude, Marinette, Wis., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Aug. 1, 1967, Ser. No. 8,078
Term of patent 14 years
(Cl. D48—31)

210,486
ELECTRIC IRON OR SIMILAR ARTICLE
John C. Shalvoy, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
Filed Sept. 12, 1967, Ser. No. 8,572
Term of patent 14 years
(Cl. D49—6)

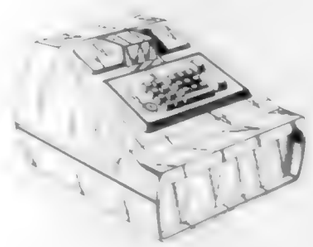


210,487
LITTER RECEPTACLE
Robert P. Reavis, Statesville, N.C., assignor to Fusion Rubbermaid Corporation, Statesville, N.C., a corporation of North Carolina
Filed June 20, 1967, Ser. No. 7,524
Term of patent 14 years
(Cl. D49—34)

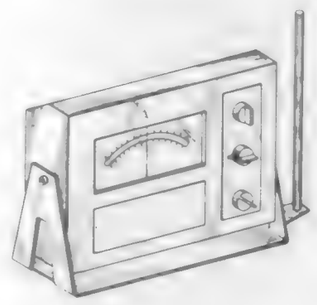
210,488
COIN BOX FOR COIN-OPERATED APPLIANCES
Marlyn R. Hutchins, Minneapolis, Minn., assignor to Coin Security Systems, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 23, 1966, Ser. No. 4,787
Term of patent 14 years
(Cl. D52—3)



210,489
CASH CONTROL REGISTER
Chester J. Abend, Camillus, and Thomas E. Hanson and Paul Dennis Younge, Syracuse, N.Y., assignors to SCM Corporation, a corporation of New York
Filed Dec. 15, 1966, Ser. No. 5,061
Term of patent 14 years
(Cl. D52—4)

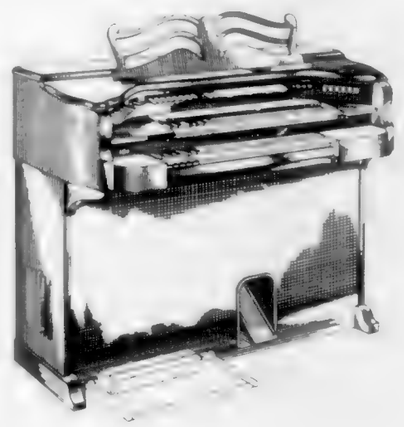


210,490
METER OR SIMILAR DEVICE
Charles M. Dole, Jr., Mount Kisco, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 23, 1967, Ser. No. 5,924
Term of patent 14 years
(Cl. D52—6)

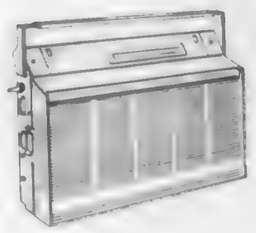


210,491
COMBINED SUPPORT AND HOLDER FOR TRASH RECEPTACLES
Howard W. Lisby and Thomas O. Peterson, both of 2826 E. Rosedale, Fort Worth, Tex. 76110
Filed Dec. 15, 1966, Ser. No. 5,052
Term of patent 14 years
(Cl. D54—1)

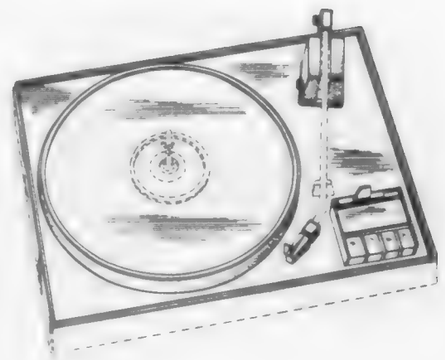
210,492
ORGAN CONSOLE
Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 11, 1966, Ser. No. 3,030
Term of patent 14 years
(Cl. D56—2)



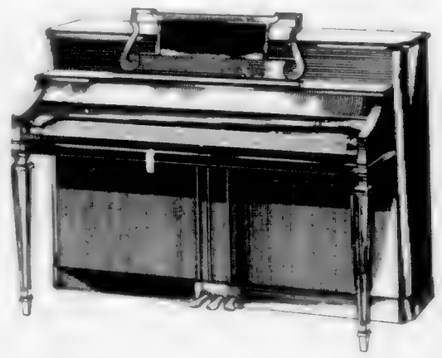
210,493
COMBINED PORTABLE RADIO AND PHONOGRAPH OR SIMILAR ARTICLE
Robert Hegon, 88 Hue de la Jarry, Vincennes 94, France
Filed Dec. 1, 1966, Ser. No. 4,926
Claims priority, application Switzerland June 1, 1966
Term of patent 14 years
(Cl. D56—4)



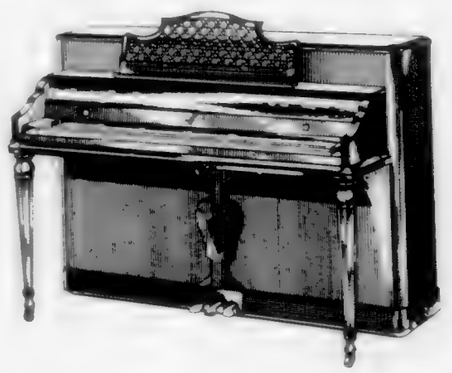
210,494
RECORD CHANGER OR SIMILAR ARTICLE
Ralph D. Davis, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Feb. 14, 1967, Ser. No. 5,805
Term of patent 14 years
(Cl. D56—4)



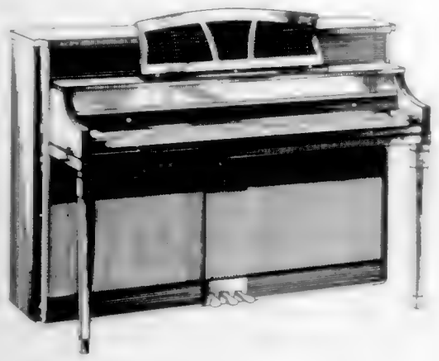
210,495
PIANO CASE
Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 17, 1966, Ser. No. 4,714
Term of patent 14 years
(Cl. D56—9)



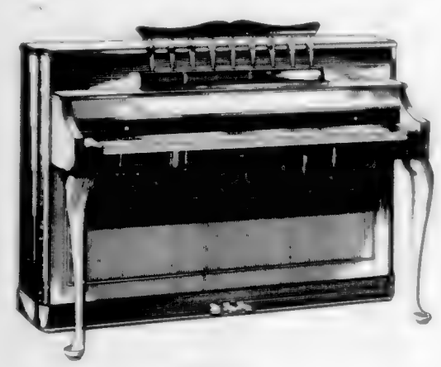
210,496
PIANO CASE
Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 17, 1966, Ser. No. 4,715
Term of patent 14 years
(Cl. D56—9)



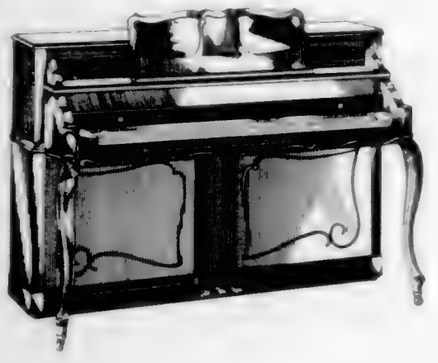
210,497
PIANO CASE
Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 17, 1966, Ser. No. 4,721
Term of patent 14 years
(Cl. D56—9)



210,498
PIANO CASE
Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 17, 1966, Ser. No. 4,722
Term of patent 14 years
(Cl. D56—9)



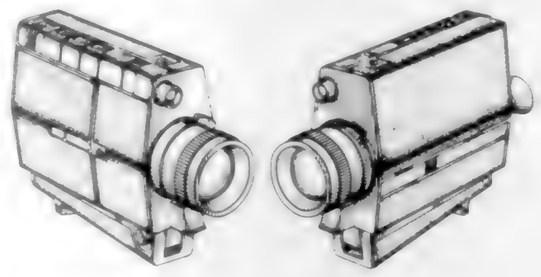
210,499
PIANO CASE
Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 17, 1966, Ser. No. 4,723
Term of patent 14 years
(Cl. D56—9)



210,500
SPECTACLE FRAME FRONT
Jack Bloch, Leominster, and Vitalino Marchi, Concord, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 5,232
Term of patent 14 years
(Cl. D57—1)

210,501
FLASK
Herbert Brammer, London, England, assignor to Charles Mackinlay & Company Limited, Edinburgh, Scotland
Filed Apr. 26, 1966, Ser. No. 2,023
Claims priority, application Great Britain Mar. 30, 1966
Term of patent 14 years
(Cl. D58—8)

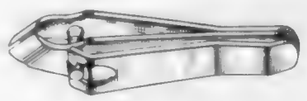
210,502
MOVIE CAMERA
Dale R. Caldwell, Chicago, Ill., assignor to Argus Incorporated, Chicago, Ill., a corporation of Illinois
Filed May 2, 1966, Ser. No. 2,083
Term of patent 14 years
(Cl. D61—1)



210,503
TYPEWRITER
Carl L. Otto, New York, N.Y., assignor to Litton Business Systems, Inc., a corporation of New York
Filed June 21, 1967, Ser. No. 7,547
Term of patent 14 years
(Cl. D64—11)

210,504
MANICURE IMPLEMENT
Donald R. Adams, P.O. Box 865, Felton, Calif. 95018
Filed July 19, 1966, Ser. No. 3,126
Term of patent 14 years
(Cl. D86—10)

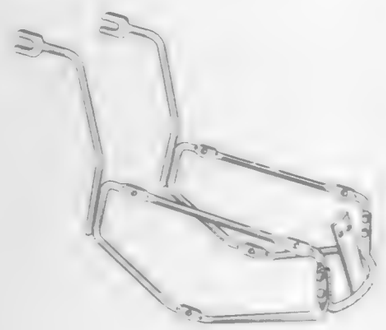
210,505
CUTICLE CLIPPER
Norbert Leopoldi, 4180 Marine Drive, Chicago, Ill. 60613
Filed Dec. 1, 1966, Ser. No. 4,887
Term of patent 3½ years
(Cl. D86—10)



210,506
HAIR DRYER
James Teague, Jr., Glenview, and Victor A. Petertil, Oak Park, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 20, 1967, Ser. No. 5,865
Term of patent 14 years
(Cl. D86—10)

210,507
CRUTCH
David Lockett, 574 Hyacinth Place, Highland Park, Ill. 60035
Filed Feb. 2, 1967, Ser. No. 5,662
Term of patent 14 years
(Cl. D88—5)

210,508
MOUNTING BRACKET FOR MOTORCYCLE SADDLEBAGS
Aleksis Lahti, Ann Arbor, and Stephen J. Molitoris, Dearborn, Mich., assignors to American Safety Equipment Corporation of Michigan, Southfield, Mich.
Filed Feb. 20, 1967, Ser. No. 3,887
Term of patent 14 years
(Cl. D90—3)



210,509
CARVING KNIFE
Donald A. Wallance, Croton-on-Hudson, N.Y., assignor to H. E. Lauffer Company, New York, N.Y., a corporation of New York
Filed Feb. 5, 1962, Ser. No. 68,659
Term of patent 14 years
(Cl. D95—3)

LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 12TH DAY OF MARCH, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Air Products and Chemicals, Inc. : *See*—
Kurzinski, Edward F. Re. 26,364.
Allegheny Ludlum Steel Corp. : *See*—
Beattie, Clifford G., and Gumbert. Re. 26,365.
Beattie, Clifford G., and V. D. Gumbert, to Allegheny Ludlum Steel Corp. Control system for surface apparatus. Re. 26,365, 3–12–68, Cl. 51—34.
Fibreboard Corp. : *See*—
Gerton, Mark E. Re. 26,362.
Gerton, Mark E., to Fibreboard Corp. Catalyzed gypsum wallboard and method of production thereof. Re. 26,362, 3–12–68, Cl. 117—60.
Gumbert, Victor D. : *See*—
Beattie, Clifford G., and Gumbert. Re. 26,365.
Holzinger, Alfred S. : *See*—
Mooney, Charles W., and Holzinger. Re. 26,361.
Kurzinski, Edward F., to Air Products and Chemicals, Inc. Metallurgical melting and refining process. Re. 26,364, 3–12–68, Cl. 75—43.
Mills, William J., II. Fabric cover for boats. Re. 26,363, 3–12–68, Cl. 9—1.
Mooney, Charles W., and A. S. Holzinger, to Motorola, Inc. Electromechanical frequency responsive translating device. Re. 26,361, 3–12–68, Cl. 335—90.
Motorola, Inc. : *See*—
Money, Charles W., and Holzinger. Re. 26,361.

LIST OF PLANT PATENTEES

Arends, Lewis, to Hill Top Orchards and Nurseries, Inc. Apple tree. 2,800, 3–12–68, Cl. 34.
Flemer, William, III, to Treesearch. Crab apple tree. 2,801, 3–12–68, Cl. 34.
Hill Top Orchards and Nurseries, Inc. : *See*—
Arends, Lewis. 2,800.
Treesearch : *See*—
Flemer, William, III. 2,801.

LIST OF DESIGN PATENTEES

Abend, Chester J., T. E. Hanson, and P. D. Younge, to SCM Corp. Cash comtrol register. 210,489, 3–12–68, Cl. D52—4.
Ach, Rene. Toy construction figure. 210,471, 3–12–68, Cl. D34—15.
Adams, Donald R. Manicure implement. 210,504, 3–12–68, Cl. D86—10.
American Safety Equipment Corp. of Michigan. : *See*—
Lahti, Aleksis, and Molitoris. 210,508.
Andres Sancho, S.A. : *See*—
Cortina, Andres S. 210,444.
Argus Inc. : *See*—
Caldwell, Dale R. 210,502.
Balbach, Sara L., to Corning Glass Works. Plate or similar article. 210,481, 3–12–68, Cl. D44—15.
Baldwin, D. H., Co. : *See*—
White, Winsor D., Jr. 210,492.
White, Winsor D., Jr. 210,495.
White, Winsor D., Jr. 210,496.
White, Winsor D., Jr. 210,497.
White, Winsor D., Jr. 210,498.
White, Winsor D., Jr. 210,499.
Beinert, John D., to Spiegel Industries Corp. Chair. 210,452, 3–12–68, Cl. D15—1.
Beyer, Edward G., to Gamma Associates, Inc. Trivet. 210,477, 3–12–68, Cl. D44—10.
Bloch, Jack, and V. Marchi, to Foster Grant Co., Inc. Spectacle frame front. 210,500, 3–12–68, Cl. D57—1.
Block China Co. : *See*—
Gulotta, Gerald. 210,476.
Bolt Beranek and Newman, Inc. : *See*—
Gilbert, Ernest E., and Conners. 210,460.
Bourke, Robert E., to The Coca-Cola Co. Bottle. 210,445, 3–12–68, Cl. D9—136.
Bowes Donald R., to Johnson & Johnson. Container for needles or the like. 210,446, 3–12–68, Cl. D9—172.
Brammer, Herbert, to Charles Mackinlay & Co. Ltd. Flask. 210,501, 3–12–68, Cl. D58—8.
Brewer, Francis T., to Wilson Sporting Goods Co. Golf club grip. 210,468, 3–12–68, Cl. D34—5.
Burns, Lee V., D. A. Deane, and M. T. Leung, to Federal Sign and Signal Corp. Restaurant. 210,448, 3–12–68, Cl. D13—1.
Bus, Andre : *See*—
Thorn, John B., and Bus. 210,466.
Caldwell, Dale R., to Argus Inc. Movie camera. 210,502, 3–12–68, Cl. D61—1.
Christie, Theodore, and J. J. Kregzdys, to Precision Scientific Co. Titration instrument. 210,455, 3–12–68, Cl. D16—2.
Coca-Cola Co., The : *See*—
Bourke, Robert E. 210,445.
Coin Security Systems, Inc. : *See*—
Hutchins, Marlyn R. 210,488.
Conners, Patrick F. : *See*—
Gilbert, Ernest E., and Conners. 210,460.
Corning Glass Works : *See*—
Balbach, Sara L. 210,481.
Dole, Charles M., Jr. 210,490.
Gibson, Robert R. 210,480.
Mercadante, Ottorino N. 210,479.
Cortina, Andres S., to Andres Sancho, S.A. Bottle. 210,444, 3–12–68, Cl. D9—54.
Davis, Ralph D., to V-M Corp. Record changer or similar article. 210,494, 3–12–68, Cl. D56—4.
Deane, David A. : *See*—
Burns, Lee V., Deane, and Leung. 210,448.
Di Sesa, Frank J., Jr., to Sunbeam Corp. Mixer. 210,475, 3–12–68, Cl. D44—1.
Dole, Charles M., Jr., to Corning Glass Works. Meter or similar device. 210,490, 3–12–68, Cl. D52—6.
Du Pont de Nemours, E. I., and Co. : *See*—
Mease, Gary L. 210,456.
Mease, Gary L. 210,457.
Mease, Gary L. 210,458.
Mease, Gary L. 210,459.
Eide, Allen N. Combined desk, carom pool table and record player unit. 210,465, 3–12–68, Cl. D33—7.
Federal Sign and Signal Corp. : *See*—
Burns, Lee V., Deane, and Leung. 210,448.
Fehn, Albert L. Tray for cocktail bar supplies. 210,475, 3–12–68, Cl. D44—10.
Foster Grant Co., Inc. : *See*—
Bloch, Jack, and Marchi. 210,500.
Fusion Rubbermaid Corp. : *See*—
Reavis, Robert P. 210,487.
Gamma Associates, Inc. : *See*—
Beyer, Edward G. 210,477.
Gardner, Vincent E. Ski pod. 210,451, 3–12–68, Cl. D14—27.
Gardner, Vincent E. Rocking chair. 210,453, 3–12–68, Cl. D15—6.
Gardner, Vincent E. Combined toothbrush and paste holder and cup dispensing unit. 210,467, 3–12–68, Cl. D33—26.
General Electric Co. : *See*—
Laylon, Harry L., and Judson. 210,473.
Shalvoy, John C. 210,486.
General Time Corp. : *See*—
Miley, David W. 210,474.
Gibson, Robert R., to Corning Glass Works. Plate or similar article. 210,480, 3–12–68, Cl. D44—15.
Gilbert, Ernest E., and P. F. Conners, to Bolt Beranek and Newman, Inc. Data encoding unit. 210,460, 3–12–68, Cl. D26—5.
Gulotta, Gerald, to Block China Co. Combined cup and saucer serving unit. 210,476, 3–12–68, Cl. D44—9.
H. Robert Industries, Inc. : *See*—
Sander, Joseph R., 210,463.
Hanson, Thomas E. : *See*—
Abend, Chester J., Hanson, and Younge. 210,489.
Hart, Richard S., to Sunbeam Corp. Supporting stand for an electric knife. 210,483, 3–12–68, Cl. D44—29.
Hegon, Robert. Combined portable radio and phonograph or similar article. 210,493, 3–12–68, Cl. D56—4.
Howlett, Frederick W. Portable shielded desk. 210,464, 3–12–68, Cl. D33—7.
Hunt-Wesson Foods, Inc. : *See*—
Mason, Stanley I., Jr. 210,443.
Hutchins, Marlyn R., to Coin Security Systems, Inc. Coin box for coin operated appliances. 210,488, 3–12–68, Cl. D52—3.
Ison, James E. Game board, or the like. 210,470, 3–12–68, Cl. D34—5.

International Business Machines Corp.: *See*—
Kneale, Collan B. 210,461.
Johnson & Johnson: *See*—
Bowes, Donald R. 210,446.
Judson, William V.: *See*—
Laylon, Harry L., and Judson. 210,473.
Kagan, Vladimir. Sofa or similar article. 210,454, 3–12–68, Cl. D15—11.
Kneale, Collan B., to International Business Machines Corp. Data transmission terminal. 210,461, 3–12–68, Cl. D26—5.
Koppers Co., Inc.: *See*—
Rhude, Maurice J. 210,485.
Kregzdys, Joseph J.: *See*—
Christie, Theodore, and Kregzdys. 210,455.
Lahti, Aleksis, and S. J. Molitoris, to American Safety Equipment Corporation of Michigan. Mounting bracket for motorcycle saddlebags. 210,508, 3–12–68, Cl. D90—3.
Lane Co. Inc., The: *See*—
Thorn, John B., and Bus. 210,466.
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Wallance, Donald A. 210,509.
Laylon, Harry L., and W. V. Judson, to General Electric Co. Clock or similar article. 210,473, 3–12–68, Cl. D42—7.
Leopoldi, Norbert. Cuticle clipper. 210,505, 3–12–68, Cl. D86—10.
Leung, Monroe T.: *See*—
Burns, Lee V., Deane, and Leung. 210,448.
Lisby, Howard W., and T. O. Peterson. Combined support and holder for trash receptacles. 210,491, 3–12–68, Cl. D54—1.
Litton Business Systems, Inc.: *See*—
Otto, Carl L. 210,503.
Lockett, David. Crutch. 210,507, 3–12–68, Cl. D88—5.
Mackinlay, Charles, & Co. Ltd.: *See*—
Brammer, Herbert. 210,501.
Marchi, Vitalino: *See*—
Bloch, Jack, and Marchi. 210,500.
Mason, Stanley I., Jr., to Hunt-Wesson Foods, Inc. Jug or similar article. 210,443, 3–12–68, Cl. D9—39.
McNeff, George A. Gas lamp. 210,484, 3–12–68, Cl. D48—31.
Mease, Gary L., to E. I. du Pont de Nemours and Co. Sprinkler head. 210,456, 3–12–68, Cl. D23—6.
Mease, Gary L., to E. I. du Pont de Nemours and Co. Sprinkler head. 210,457, 3–12–68, Cl. D23—6.
Mease, Gary L., to E. I. du Pont de Nemours and Co. Sprinkler head. 210,458, 3–12–68, Cl. D23—6.
Mease, Gary L., to E. I. du Pont de Nemours and Co. Sprinkler head. 210,459, 3–12–68, Cl. D23—6.
Mercadante, Ottorino N., to Corning Glass Works. Plate or similar article. 210,479, 3–12–68, Cl. D44—15.
Miley, David W., to General Time Corp. Timer. 210,474, 3–12–68, Cl. D42—7.
Molitoris, Stephen J.: *See*—
Lahti, Aleksis, and Molitoris. 210,508.
Otto, Carl L., to Litton Business Systems, Inc. Typewriter. 210,503, 3–12–68, Cl. D64—11.
Peterson, Thomas O.: *See*—
Lisby, Howard W., and Peterson. 210,491.
Petertil, Victor A.: *See*—
Teague, James, Jr., and Petertil. 210,506.
Poltorak, Joseph A. Vehicle for use in snow and on unimproved land. 210,450, 3–12–68, Cl. D14—3.
Precision Scientific Co.: *See*—
Christie, Theodore, and Kregzdys. 210,455.
Procter & Gamble Co., The: *See*—
Vanderhyde, Harold J. 210,447.
Reavis, Robert P., to Fusion Rubermaid Corp. Litter receptacle. 210,487, 3–12–68, Cl. D49—34.
Rhude, Maurice J., to Koppers Co., Inc. Pole. 210,485, 3–12–68, Cl. D48—31.
Roberts, Jack C., and C. J. Smith. Wrist watch communication transmitter. 210,462, 3–12–68, Cl. D26—14.
SCM Corp.: *See*—
Abend, Chester J., Hanson, and Younge. 210,489.
Sander, Joseph K., to H. Robert Industries, Inc. Tray insert for a furniture drawer. 210,463, 43–12–68, Cl. D33—1.
Sejersen, Henrik B. Exercise bar. 210,469, 3–12–68, Cl. D34—5.
Shalvoy, John C., to General Electric Co. Electric iron or similar article. 210,486, 3–12–68, Cl. D49—6.
Smith, Charles J.: *See*—
Roberts, Jack C., and Smith. 210,462.
Spiegel Industries Corp.: *See*—
Beinert, John D. 210,452.
Sunbeam Corp.: *See*—
Di Sesa, Frank J., Jr. 210,475.
Hart, Richard S. 210,483.
Teague, James, Jr., and Petertil. 210,506.
Teague, James, Jr., and V. A. Petertil, to Sunbeam Corp. Hair dryer. 210,506, 3–12–68, Cl. D86—10.
Thompson, Hilder T. Vehicle body with rear wheel unit. 210,449, 3–12–68, Cl. D14—3.
Thorn, John B., and A. Bus, to The Lane Co. Inc. Pedestal table. 210,466, 3–12–68, Cl. D33—14.
Tomaluolo, Theodore J. Hand gripper for holding fish. 210,482, 3–12–68, Cl. D44—29.
V-M Corp.: *See*—
Davis, Ralph D. 210,494.
Vanderhyde, Harold J., to The Procter & Gamble Co. Cap for a jug or the like. 210,447, 3–12–68, Cl. D9—285.
Vogt, Richard L. Adjustable flower pot holder bracket or the like. 210,472, 3–12–68, Cl. D35—3.
Wallance, Donald A., to H. E. Lauffer Co. Carving knife. 210,509, 3–12–68, Cl. D95—3.
White, Winsor D., Jr., to D. H. Baldwin Co. Organ console. 210,492, 3–12–68, Cl. D56—2.
White, Winsor D., Jr., to D. H. Baldwin Co. Piano case. 210,495, 3–12–68, Cl. D56—9.
White, Winsor D., Jr., to D. H. Baldwin Co. Piano case. 210,496, 3–12–68, Cl. D56—9.
White, Winsor D., Jr., to D. H. Baldwin Co. Piano case. 210,497, 3–12–68, Cl. D56—9.
White, Winsor D., Jr., to D. H. Baldwin Co. Piano case. 210,498, 3–12–68, Cl. D56—9.
White, Winsor D., Jr., to D. H. Baldwin Co. Piano case. 210,499, 3–12–68, Cl. D56—9.
Wilson Sporting Goods Co.: *See*—
Brewer, Francis T. 210,468.
Younge, Paul D.: *See*—
Abend, Chester J., Hanson, and Younge. 210,489.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 12TH DAY OF MARCH, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Akerlund & Rausing: *See*—
Bjorkengren, Carl-Axel, and Johansson. 3,372,859.
AMP Inc.: *See*—
Lovendusky, Charles M. 3,372,815.
Renshaw, Floyd H., Jr. 3,373,397.
Stine, Howard E., Jr. 3,372,454.
Vickery, John R., Jr. 3,372,475.
Volinskie, Robert. 3,373,398.
Wyrick, Charles T. 3,373,412.
Abbott, Charles N., to The Dayton Bright Copper Co. Electroplating of copper. 3,373,095, 3–12–68, Cl. 204—52.
Abbott Laboratories: *See*—
Storey, Robert H., Glenn, and O'Malley. 3,372,992.
Abbott, Richard L., to Commercial Solvents Corp. Esterogenic compounds and animal growth promoters. 3,373,037, 3–12–68, Cl. 99—2.
Abe, Hideki, to Victor Co. of Japan, Ltd. Device for opening or closing two doors simultaneously. 3,372,965, 3–12–68, Cl. 312—275.
Abildgaard, William H., to Becton, Dickinson of California, Inc. Self-packaged sterilized glove and method. 3,372,799, 3–12–68, Cl. 206—63.2.
Abrahamson, Clark A.: *See*—
Johnson, Edward P., and Abrahamson. 3,372,861.
Abrasive Developments Ltd.: *See*—
Ashworth, Norman I. 3,372,704.
Achenbach, Karl, to FMC Corp. Process for etching copper printed circuits. 3,373,113, 3–12–68, Cl. 252—79.2.
Adams, Clarence H. Hand held multi-channel magnetic tape eraser. 3,373,250, 3–12–68, Cl. 179—100.2.
Adams, Derek S.: *See*—
Phillips, Brain L., and Adams. 3,372,681.
Phillips, Brian L., and Adams. 3,372,682.
Phillips, Brian L., and Adams. 3,372,683.
Adams, Dolor N., and D. C. Thomas, to Harris-Intertype Corp. Presensitized positive working lithographic plate. 3,373 021, 3–12–68, Cl. 96—33.
Adams, William E., to H. H. Robertson Co. Side sealing members for operating louver assemblies. 3,372,514, 3–12–68, Cl. 49—91.
Addison Products Co.: *See*—
Dyas, Robert E., and Sharp. 3,372,557.
Adler, Robert, to Zenith Radio Corp. Laser beam-soundwave techniques using curved acoustic waves. 3,373,360, 3–12–68, Cl. 332—7.51.
Adomaitis, Domas: *See*—
Mesrobian, Robert B., Sellers, and Adomaitis. 3,373,224.
Advance Hydraulics, Inc.: *See*—
Amanti, Anthony E., and Krokenberger. 3,372,611.
Aerojet-General Corp.: *See*—
Harkee, James F., and Cooley. 3,373,088.
Lambert, Peter F. 3,373,295.
Linden, Gustave B., and Klager. 3,373,181.
Martin, Fred E. 3,373,056.
Af Segerstad, Carl G. H., to Transventor Aktiebolag. Machine intended for barking and pruning. 3,372,720, 3–12–68, Cl. 144—208.
Aftergut, Siegfried, to General Electric Co. Thermoplastic epoxy resin photoconductors. 3,373,140, 3–12–68, Cl. 260—47.
Aftergut, Siegfried, to General Electric Co. Photoconductive copolymers of styrene and acrolein derivatized with aryl amines. 3,373,141, 3–12–68, Cl. 260—52.
Aiken, William R., to Electronix Ten, Inc. Signalling device having vane rotated about axis by an electrostatic field. 3,373,422 3–12–68, Cl. 340—373.
Aitken, William H., to Remington Arms Co., Inc. Fuel tank venting system. 3,372,679, 3–12–68, Cl. 123—136.
Ajem Laboratories, Inc.: *See*—
Arnold, Orlan M. Koepke, Pashaian, Stewart, Umbrichi, and Laslo. 3,372,811.
Ajinomoto Co., Inc.: *See*—
Yoshimura, Kenkichi, Aoki, and Honda. 3,373,092.
Aker, Jimmie R.: *See*—
Cullen, Roy H., Elliott, and Aker. 3,372,762.
Aktiebolaget Astra: *See*—
Bamberg, Peter, Ekstrom, and Sjoberg. 3,373,156.
Aktiebolaget Astra, Apotekarnes Kemiska Fabriker: *See*—
Ekstrom, Bertil A., and Sjoberg. 3,373,155.
Albright, Jay D., and L. Goldman, to American Cyanamid Co. Novel 17 - [(methylthio)methoxy]yohimbanes. 3,373,166, 3–12–68, Cl. 260—287.
Alden, Milton. Adhesive electrolytic recording paper. 3,373,090, 3–12–68, Cl. 204—2.
Alexander, Roy P., and H. A. Schroeder, to Olin Mathieson Chemical Corp. Dimeric halophospha (III)-carboranes and their production. 3,373,193, 3–12–68, Cl. 260—543.
Alfa-Laval AB.: *See*—
Dahlgren, Jons A. 3,373,082.
Skoog, Malte A. 3,372,744.
All American Engineering Co.: *See*—
Russo, Albert, and Greeley. 3,372,773.
Allen-Bradley Co.: *See*—
Matthias, Lynn H., and Wilson. 3,373,257.
Allen, Paul M., R. H. Espy, and H. Tanczyn, to Armco Steel Corp. Stainless steel and product. 3,373,015, 3–12–68, Cl. 75—128.
Allied Chemical Corp.: *See*—
Degginger, Edward R. 3,373,225.
Fuhrmann, Robert, Lazar, and Van Peppen. 3,373,194.
Hardy, George F. 3,373,130.
Oxley, Joseph H., and Blocher. 3,373,018.
Wagner, John W. 3,373,145.
Wooster, George S. 3,373,128.
Allis-Chalmers Mfg. Co.: *See*—
McGrath, Laurence R., and Moore. 3,372,606.
Winter, Heinz W. 3,372,881.
Allport, Maurice J., to Joseph Lucas (Industries) Ltd. Electromagnetic horns. 3,373,258, 3–12–68, Cl. 200—166.
Altschuler, George. Safety vents for plastic covered glass aerosol containers. 3,372,827, 3–12–68, Cl. 215—12.
Amanti, Anthony E., and E. Krokenberger, to Advance Hydraulics, Inc. Torque wrenches and test stands. 3,372,611, 3–12–68, Cl. 81—60.
Amax Specialty Metals, Inc.: *See*—
Spink, Donald R., and Stephens. 3,373,017.
American Air Filter Co., Inc.: *See*—
Harms, John D. 3,372,529.
American Chain & Cable Co., Inc.: *See*—
Mesler, Lilburn L. 3,372,665.
American Cyanamid Co.: *See*—
Albright, Jay D., and Goldman. 3,373,166.
Bitha, Panayota, and Hlavka. 3,373,196.
Lanzilotti, Anthony E., and Goldman. 3,373,165.
Lucas, Howard R., and Di Leone. 3,373,171.
Martell, Michael J., Jr., and Ross. 3,373,197.
Martell, Michael J., Jr., and Ross. 3,373,198.
American Home Products Corp.: *See*—
Wendt, Gerhard R., and Ledig. 3,373,185.
Wolf, Milton. 3 373,184.
American Machine & Foundry Co.: *See*—
Cheng, Chin J. 3,372,463.
Conard, Arthur B., Jr. 3,372,703.
American Optical Co.: *See*—
Snitzer, Elias. 3,372,969.
Woodcock, Richard F. 3,373,006.
American Velcro, Inc.: *See*—
Rinecker, Franz G. 3,372,438.
Ametek, Inc.: *See*—
Brice, William A. 3,372,706.
Amphenol Corp.: *See*—
Holland, John W. 3,373 244.
Ammann, William L. Soil treating apparatus. 3,372,658, 3–12–68, Cl. 111—7.
Amori, Joseph A. Apparatus for drupe halving and pitting. 3,372,722 3–12–68, Cl. 146—28.
Anderson, Andrew W., to Scandia Packaging Machinery Co. Wrapping mechanism. 3,372,526, 3–12–68, Cl. 53—230.
Anderson Co., The: *See*—
Anderson, John W. 3,372,422.
Anderson, John W. 3,372,423.
Anderson, John W., to The Anderson Co. Windshield wiper blade and carriage assembly. 3,372,422, 3–12–68, Cl. 15—250.42.
Anderson, John W., to The Anderson Co. Windshield cleaner. 3,372,423, 3–12–68, Cl. 15—250.42.
Anderson, Robert G., and Y. G. Hendrickson, to Chevron Research Co. Tris (hydrocarbyl alkylene polyamines) as lubricating oil detergents. 3,373,112, 3–12–68, Cl. 252—51.5.
Anderson, Roger. Adjustably positioned support board for a surgical table. 3,372,921, 3–12–68, Cl. 269—328.
Anderson, Warren D. Navigational instrument. 3,373,429, 3–12–68, Cl. 343—115.
Andresen, Donald D. Overhead door hinged suspension. 3,372,515, 3–12–68, Cl. 49—205.
Angstadt, Richard L., and F. R. Hurley, to W. R. Grace & Co. Hardening accelerated Portland cement. 3,373,048, 3–12–68, Cl. 106—90.
Antipol Corp.: *See*—
Zimmer, Walter H. 3,372,530.
Aoki, Kiyoshi: *See*—
Yoshimura, Kenkichi, Aoki, and Honda. 3,373,092.
Aplett, William R.: *See*—
Kunsagi, Laszlo, Aplett, Berman, Heifetz, and Magol. 3,372,565.
Appel, David W., J. B. Graham, and C. L. Sanford, to Kimberly Clark Corp. Stock inlet for a papermaking machine. 3,373,080, 3–12–68, Cl. 162—343.
Apsco Products: *See*—
Humphrey, John H., Scheirer, and Cheslak. 3,372,787.
Aqua Stables, Inc.: *See*—
Lo Bue, Louis. 3,372,663.
Aristov, Pavel I.: *See*—
Ilin, Igor N., and Aristov. 3,372,437.
Armco Steel Corp.: *See*—
Allen, Paul M., Espy, and Tanczyn. 3,373,015.

Armour, Carl E., C. C. Morrison, P. E. Scott, L. A. Smith, and G. Weingarten, to United States of America, Navy. Frictional sensitivity testing apparatus. 3,372,574, 3–12–68, Cl. 73—35.

Armour and Co.: *See*—
Hammerberg, Edgar S., and Shapiro. 3,373,174.
Peterson, Harold F. 3,373,045.

Armstrong Cork Co.: *See*—
Jones, James R. 3,373,072.

Armstrong, John G., to International Standard Electric Corp. Magnetic field straightener. 3,373,389, 3–12–68, Cl. 335—211.

Armstrong, Robert G., to Continental Can Co., Inc. Compositions containing polyamides, polyolefins and carboxylated polyethylene. 3,373,222, 3–12–68, Cl. 260—857.

Armstrong, Robert G., to Continental Can Co., Inc. Compositions containing polyamides, polyolefins, and ethylene-acrylic or methacrylic acid copolymers. 3,373,223, 3–12–68, Cl. 260—857.

Arneson, Edwin L., to Federal Paper Board Co., Inc. Article carrier. 3,372,800, 3–12–68, Cl. 206—65.

Arneson, Howard M., to Arneson Products, Inc. Rotatable coupling. 3,372,948, 3–12–68, Cl. 285—98.

Arneson Products, Inc.: *See*—
Arneson, Howard M. 3,372,948.

Arnold, George B., R. Y. Heisler, H. E. Vermillion, and A. Arkell, to Texaco Inc. Method of operating a rocket engine using heat exchange with hydrocarbon fuels. 3,372,546, 3–12–68, Cl. 60—206.

Arnold, Orlan M., F. W. Koepke, Jr., S. Pashalan, J. M. Stewart, E. Umbrichi, and H. J. Laslo, to Ajem Laboratories, Inc. Rotating drum filter apparatus. 3,372,811. 3–12–68, Cl. 210—387.

Arsenault, Albert J. Fishing rod handling device. 3,372,509, 3–12–68, Cl. 43—21.2.

Arsenault, Albert J. Fishing rod handling device. 3,372,510, 3–12–68, Cl. 43—21.2.

Arsenault, James H., to J. S. Kamborian. Apparatus for lasting shoes. 3,372,414, 3–12–68, Cl. 12—8.2.

Ashton, Albert A., to The Youngstown Sheet and Tube Co. Bottom loading arm. 3,372,715, 3–12–68, Cl. 141—59.

Ashworth, Norman L., to Abrasive Developments Ltd. Degreasing. 3,372,704, 3–12–68, Cl. 134—109.

Associated Electrical Industries Ltd.: *See*—
Reece, Michael P. 3,373,350.
Saraga, Wolja. 3,373,272.

Atlas Chemical Industries, Inc.: *See*—
Hales, Ralph A., and Hughes. 3,373,204.
McGirr, Robert. 3,372,692.

Atlas, David. Method and system for radar velocity measurements. 3,373,428, 3–12–68, Cl. 343—8.

Attaway, Julian J. Anchor and bracket arrangement for rail. 3,372,909 3–12–68, Cl. 256—69.

Atwater, Wayne G., to The Triax Co. Detecting device for improperly positioned loads in an automatic warehousing system. 3,372,816, 3–12–68, Cl. 214—16.4.

Atwood Vacuum Machine Co.: *See*—
Pfluger, Richard T. 3,372,871.

Augustine, Frank, to Clevite Corp. Method of making photosensitive elements. 3,373,059, 3–12–68, Cl. 136—89.

Auphan, Michel, to North American Philips Co., Inc. Ink jet recorder. 3,373,436, 3–12–68, Cl. 346—75.

Automatic Radio Mfg. Co., Inc.: *See*—
Flint, Frank B. 3,372,937.

Avalon Mfg. Corp.: *See*—
Birch, Lawrence. 3,372,493.

Avco Corp.: *See*—
El Bindari, Ahmed. 3,372,470.

Averill, Charles C., to Union Steel Products Co. Portable and collapsible stacking bins or crates. 3,372,829, 3–12–68, Cl. 220—6.

Avery, William H., to United States of America, Navy. Method of producing pyrolytic graphite. 3,372,991, 3–12–68, Cl. 23—209.3.

Avner, David A., and D. B. Wilkins, to Girling Ltd. Lubricating means for piston rod seal. 3,372,776, 3–12–68, Cl. 188—100.

Ayotte, Robert A., and A. J. Douglas. Container and closure assembly. 3,372,834, 3–12–68, Cl. 220—60.

Azoplate Corp.: *See*—
Steppan, Hartmut. 3,373,115.
Tomanek, Martha. 3,373,020.

Baars, Delbert C.: *See*—
Belanich, John A., Baars, and Kok. 3,373,442.

Bachmann, Ditmar, K. Grafen, W. Fischer, and A. Schubring, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the continuous preparation of bis-2-hydroxyethyl phthalates. 3,373,186, 3–12–68, Cl. 260—475.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Nuerrenbach, Axel, Sarnecki, and Reif. 3,373,207.

Baggett, Joseph M.: *See*—
Pruitt, Malcolm E., and Baggett. 3,373,009.

Bailey, James R., to Johnson Service Co. Pressure-electric transducers with performance stabilization. 3,373,343, 3–12–68, Cl. 323—19.

Baker, Buford M., to Texas Instruments Inc. Depth controller. 3,372,666, 3–12–68, Cl. 114—235.

Baker, Don H., Jr.: *See*—
Gomes, John M., Baker, and Uchida. 3,373,097.

Baker, Dwight I., to North American Aviation, Inc. Throttling injector. 3,372,543, 3–12–68, Cl. 60—39.74.

Baker, Edward S., to The Boeing Co. Polyphase current control system. 3,373,290, 3–12–68, Cl. 307—133.

Balch, Ralph H.: *See*—
Williams, James A., and Balch. 3,372,447.

Baldwin-Lima-Hamilton Corp.: *See*—
Willi, Richard B. 3,372,645.

Balfour, William: *See*—
Firth, Donald, Hancock, and Balfour. 3,372,452.

Bamberg, Peter, B. A. Ekstrom, and B. O. H. Sjoberg, to Aktiebolaget Astra. Substituted 6-aminopenicillanic acids and salts. 3,373,156, 3–12–68, Cl. 260—239.1.

Banaslewicz, Henryk, and K. P. F. Terrill, to Joseph Lucas (Industries) Ltd. Input stage for A.C. amplifiers. 3,373,342, 3–12–68, Cl. 330—51.

Baranne, Daniel. Stoppers for receptacles having screw-threaded necks. 3,372,833, 3–12–68, Cl. 220—39.

Barber, Stephen W., to Owens-Illinois, Inc. Cathode ray tube display screen comprising woven mat of luminescent glass fibers. 3,373,302, 3–12–68, Cl. 313—92.

Barischoff, Erwin E., to A. L. Well. Tunnel diode circuit utilized to control the reply of a passive transponder. 3,373,425, 3–12–68, Cl. 343—6.8.

Barker, Graham: *See*—
Foley, John T., and Barker. 3,373,173.

Barlow Mfg. Co.: *See*—
Voorhees, Frederick T. 3,372,725.

Barnaby, Harold T.: *See*—
Jenkins, Ralph E., and Barnaby. 3,373,440.

Barnard, Charles A. Filter. 3,372,807, 3–12–68, Cl. 210—94.

Barnett, Louis H., to Loma Industries, Inc. Heating arrangement for molding machines. 3,372,820, 3–12–68, Cl. 264—310.

Barrett, David M., to Picker X-Ray Corp. Device for controlling the slack in high tension cables for a ceiling mounted X-ray tube assembly. 3,373,285, 3–12–68, Cl. 250—91.

Barrett, Wayne T., and C. L. Scheer, to Foote Mineral Co. Underwater gas generator. 3,372,996, 3–12–68, Cl. 23—282.

Barron, William J., to Graphic Electronics, Inc. Lead screw drive mechanism. 3,372,618, 3–12–68, Cl. 90—13.3.

Barthruff, Otto, to R. Bosch. Windshield wiper assembly for automotive vehicles. 3,372,420. 3–12–68, Cl. 15—250.17.

Bartik, William J., to Sperry Rand Corp. Sensing circuitry. 3,373,292. 3–12–68, Cl. 307—210.

Basic Products Corp.: *See*—
Maka, Theodore F. 3,373,347.

Bates, Robert C., and E. L. Corp, to United States of America, Interior. Pressure measuring device employing a diaphragm and strain gages. 3,372,577, 3–12–68, Cl. 73—88.5.

Bayer, Ralph E., to General Dynamics Corp. Seismic detection system. 3,373,401, 3–12–68, Cl. 340—17.

Baybick, Solomon, J. B. Kelly, and A. A. Sariti, to Radio Corp. of America. Magnetic tape transport with azimuth adjustment. 3,373,248, 3–12–68, Cl. 179—100.2.

Beal, Stanley: *See*—
Pinder, Harold W., Beal, and Merrill. 3,372,451.

Bean, Claude T., Jr., and D. H. Thorpe, to Hooker Chemical Corp. Wax emulsion systems. 3,373,127, 3–12–68, Cl. 260—28.

Beaunit Corp.: *See*—
McClure, Robert L. 3,373,125.

Becker, John E., to Eclipse Consultants Ltd. Transmission with fluid operated clutches and torsion bar. 3,372,593, 3–12–68, Cl. 74—374.

Becker, Kenneth W.: *See*—
Rice, Herbert L., Becker, and Szabo. 3,373,107.

Becker, Rudolf, to Linde Aktiengesellschaft. Process and apparatus for impurity removal from hydrogen-containing gases. 3,372,553, 3–12–68, Cl. 62—13.

Beckman Instruments, Inc.: *See*—
Schubert, Ernest J. 3,372,273.
Yungblut, Charles W., Wright, and Peart. 3,373,396.

Becton, Dickinson of California, Inc.: *See*—
Abildgaard, William H. 3,372,799.
Keller, George H. 3,372,697.

Bei, Norman L., and T. J. Scott. Coin switch controlled ticket dispenser. 3,372,785, 3–12–68, Cl. 194—10.

Belanich, John A., D. C. Baars, and O. Kok, to Honeywell, Inc. Pen carriage. 3,372,442 3–12–68, Cl. 346—139.

Belliveau, Maurice, and F. A. Rocchi, to Prosit Service Corporation. Method of overcoming incontinence. 3,372,695, 3–12–68, Cl. 128—1.

Bell & Howell Co.: *See*—
Rixby, William E. 3,373,019.
Hipellius, John W., and Shields. 3,372,850.
Linke, Walter R. 3,372,974.
Smitzer, Louis A. 3,373,265.

Bell, Kenneth, to National Dairy Products Corp. Method and apparatus for forming an edible product. 3,372,654, 3–12–68, Cl. 107—1.

Bell Telephone Laboratories, Inc.: *See*—
Newby, Neal D., and Vaughan. 3,373,245.

Beller, Hans A., and H. B. Rath, to Girling Ltd. Disc brakes. 3,372,775. 3–12–68, Cl. 188—73.

Benda, Ladislav: *See*—
Maurer, Karel, Hirsl, Benda, and Sternkuker. 3,372,445.

Bendix Corp., The: *See*—
Gleasman, Hollis K. 3,372,608.
Janowiak, Robert M., Conway, Swistek, and Oxner. 3,373,243.
Potter, Frederick M. 3,372,559.
Wattson, Harry B. 3,373,341.

Benerito, Ruth B.: *See*—
Berni, Ralph J., Benerito, and McKelvey. 3,372,977.

Benmore, Stanley H., to Holley Carburetor Co. Carburetor. 3,372,912, 3–12–68, Cl. 261—36.

Bercaw, James W.: *See*—
Lykken, William H., and Bercaw. 3,372,805.

Beregi, Laszlo, P. Hugon, and J. C. Le Douarec, to Societe en nom Collectif dite: Science Union et cie. Societe Francaise de Recherche Medicale. Piperazine derivatives. 3,373,161, 3–12–68, Cl. 260—268.

Bereziat, Andre: *See*—
Podesta, Armando, Vignati, and Bereziat. 3,372,527.

Berger, Hans, to Zentra Albert Burkle Kommanditgesellschaft. Time switching device for controlling a heating system. 3,373,254, 3–12–68, Cl. 200—38.

Bergman, Leo M.: *See*—
Eastman, Watson S., and Bergman. 3,373,079.

Berkeley Instruments: *See*—
Fenner, Ralph L. 3,373,270.

Berkus, Clyde C. Pouring spout. 3,372,846, 3–12–68, Cl. 222—479.

Berman, Irwin: *See*—
Kunsagi, Laszlo, Aplett, Berman, Heifetz, and Magol. 3,372,565.

Berni, Ralph J., R. R. Benerito, and J. B. McKelvey, to United States of America, Agriculture. Process of creaseproofing cellulosic textiles with a single aqueous solution containing both d,l-butadiene dioxide and Lewis base catalyst. 3,372,977, 3–12–68, Cl. 8—120.

Bernstein, Jack: *See*—
Pribyl, Edward J., and Bernstein. 3,373,195.

Bestland, Ardell T., and T. M. Breton. Excessive crankcase pressure warning system and relief valve. 3,372,685, 3–12–68, Cl. 123—198.

Bethlehem Steel Corp.: *See*—
Schmidt, Merle H. 3,372,714.

Bieber, Herman, G. Chludzinski, and L. Spenadel, to Esso Research and Engineering Co. Controlled burning of potent solid oxidizer. 3,373,063, 3–12–68, Cl. 149—7.

Bieze, Jakob J.: *See*—
Smulders, August H. M., Bieze, Hage, and Splinter. 3,372,907.

Birch, Lawrence, to Avalon Mfg. Corp. Antiqued painting on wood and by-the-number system of making the same. 3,372,493, 3–12–68, Cl. 35—26.

Birdwell, Jess H. Apparatus for preventing discharge of contaminants from the engine of an automotive vehicle. 3,372,540, 3–12–68, Cl. 60—30.

Birman, Paul, to Forbro Design Corp. Generating alternating current by reversing a direct current source. 3,373,339, 3–12–68, Cl. 321—49.

Birnbaum, Morris M., L. J. Ridenour, and P. M. Salomon, to General Precision Systems, Inc. Apparatus for plotting contour maps automatically employing a cathode ray tube. 3,372,615, 3–12–68, Cl. 88—14.

Bischaff, Gottfried, KG, Bau Kompletter Gasreinigungs- und Wasserruckkuhlanlagen. Firma: *See*—
Hoff, Hans. 3,372,528.

Bitha, Panayota, and J. J. Hlavka, to American Cyanamid Co. 7- and/or 9-(lower alkyl)amino-5a,6-anhydrotetracyclines. 3,373,196, 3–12–68, Cl. 260—559.

Bither, Tom A., Jr., to E. I. du Pont de Nemours and Co. Ternary copper, zinc, cadmium and manganese dichalcogenides having the pyrite-type crystal structure. 3,372,997, 3–12–68, Cl. 23—315.

Bixby, William E., to Bell & Howell Co. Method and apparatus for producing images. 3,373,019, 3–12–68, Cl. 96—1.

Bjorkengren, Carl-Axel, and F. W. Johansson, to AB Akerlund & Rausing. Package with a corner seal. 3,372,859, 3–12–68, Cl. 229—62.

Blachly, Charles H.: *See*—
Ravner, Harold, and Blachly. 3,372,981.

Black and Decker Mfg. Co., The: *See*—
Black, Elliott M. 3,373,301.

Black, Elliott M., to The Black and Decker Mfg. Co. System for radio-frequency interference suppression. 3,373,301, 3–12–68, Cl. 310—72.

Black, Paul W., to Motorola, Inc. Crystal oscillator with temperature compensation. 3,373,379, 3–12–68, Cl. 331—116.

Black, Robert L., Jr., to Parks-Cramer Co. Apparatus for cleaning floors and disposing of fiber waste in textile mills. 3,372,425, 3–12–68, Cl. 15—312.

Black, Roe R., to York Mfg. Co. Automatic feeder for pneumatic conveying lines. 3,372,958. 3–12–68, Cl. 302—53.

Blaisdell, Leonard L., to Sylvania Electric Products Inc. Dual linear/circular polarization spiral antenna. 3,373,433, 3–12–68, Cl. 343—850.

Bloch, Moshe R., to Dead Sea Works Ltd. Primary cell comprising an aqueous solution containing halogen and a metal halide. 3,373,058, 3–12–68, Cl. 136—83.

Blocher, John M., Jr.: *See*—
Oxley, Joseph H., and Blocher. 3,373,018.

Bloom, Carl, to Worthington Corp. Enclosed motor driven compressor unit. 3,372,863, 3–12–68, Cl. 230—117.

Bloom, Jack, and L. W. Brown, to Continental Coffee Co. Method of preparing brewed coffee. 3,373,041, 3–12–68, Cl. 99—68.

Blumenthal, Jack H., to International Flavors & Fragrances, Inc. Gedrol ethers. 3,373,208, 3–12–68, Cl. 260—611.

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Davies, William J., and J. K. Rhodes, to Rolls-Royce Ltd. Bearing. 3,372,961, 3–12–68, Cl. 308—72.
Davin, Jean J., to Crouzet S.r.l. Program switch. 3,373,253, 3–12–68, Cl. 200—38.
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Davis, Edward A., to The B. F. Goodrich Co. Transfer molding apparatus. 3,372,436, 3–12–68, Cl. 18—42.
Davis, Lester T., to Control Data Corp. Coaxial cable transmission system. 3,373,365, 3–12–68, Cl. 330—53.
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Deady, Emmett F. : *See*—
Houghton, Daniel E., and Deady. 3,372,428.
De Coye de Castelet, Gaetan, to Regie Nationale des Usines Renault. Sliding roofs of vehicles and control and locking device therefor. 3,372,954, 3–12–68, Cl. 296—137.
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Hansen, Harold V. 3,372,657.
McCunn, Myron L., and Leonard. 3,372,535.
McCunn, Myron L. 3,372,536.
Defiandre, Rene, to Societe DEREFA, Etablissement pour le Developpment, Recherches et Fabrications Industrielles. Movable control boxes for controlling machine tools. 3,373,420, 3–12–68, Cl. 340—324.
Degginger, Edward R., to Allied Chemical Corp. Transparent flame retardant unsaturated polyester resins containing antimony trihalide. 3,373,225, 3–12–68, Cl. 260—863.
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Koenig, Carl F. 3,372,862.
Del-Guy Dispensers Inc. : *See*—
Lawlis, Donald E. 3,372,496.
De Lisle, Auguste L., deceased (F. S. de Lisle, executrix), and W. C. Kinnon, to Chembestos Corp. Means and method for removing iron from asbestos ore. 3,372,803, 3–12–68. Cl. 209—5.
De Robertis, Joseph, to Sealectro Corp. Circuitry system. 3,373,319, 3–12–68, Cl. 317—101.
De Staat der Nederlanden, ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie : *See*—
De Vries, Hans J., and Leersnijder. 3,372,925.
D'Eustachio, Dominic, and H. E. Johnson, to Pittsburgh Corning Corp. Thermal roof insulation and method of preparing an insulated built-up roof. 3,373,074, 3–12–68, Cl. 161—161.
Dever, James L., and I. C. Popoff, to Pennsalt Chemicals Corp. Preparation of alpha-beta-unsaturted sulfones. 3,373,167, 3–12–68, Cl. 260—289.
Devine, James J. Snake attachment. 3,372,417, 3–12–68, Cl. 15—104.3.
De Vries, Hans J., and C. P. Leersnijder, to de Staat der Nederlanden, ten Deze Vertegenwoordigd Door de Directeur-Generaal des Posterijen, Telegrafie en Telefonie. Apparatus for separating and guiding a variety of different documents. 3,372,925, 3–12–68, Cl. 271—37.
Diamand, Felix, to CSF-Compagnie Generale de Telegraphic sans Fil. Delay line with recessed support to prevent shorting by metal sputtering. 3,373,382, 3–12–68, Cl. 333—31.
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Diassi, Patrick A., and P. A. Principe, to E. R. Squibb & Sons, Inc. Synthesis of steroids. 3,373,084, 3–12–68, Cl. 195—51.
Dick, Clarence R., to The Dow Chemical Co. Preparation of substituted piperazinium salts. 3,373,162, 3–12–68, Cl. 260—268.
Dick, Keith R., and R. W. Miner. Flagpole painting device. 3,372,674, 3–12–68, Cl. 118—307.
Dickinson, George A., and T. S. Cook, to Pilkington Brothers Ltd. Pressure rollers for glass ribbon polishing machine. 3,372,516, 3–12–68, Cl. 51—110.
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Dietemann, Eugene C. : *See*—
Cohen, Werner V., and Dietemann. 3,373,199.

Di Illo, Rocco F. Pivoting brush. 3,372,418, 3–12–68, Cl. 15—165.

Di Martti, Alfred, to Edward Stern Majestic Press, Inc. Coating apparatus. 3,372,673, 3–12–68, Cl. 118—221.

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Lucas, Howard R., and Di Leone. 3,373,171.

Dirr, Rudolf, and H. Waldmann, to Siemens Aktiengesellschaft. Voltage regulating system for synchronous generators. 3,373,340, 3–12–68, Cl. 322—28.

Doennecke, Henry C., to Unit Rig & Equipment Co. Suspension mounting for a wheeled vehicle. 3,372,947, 3–12–68, Cl. 280—124.

Doering, Emil S. Rescue carriage. 3,372,405, 3–12–68, Cl. 6—81.

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Dominion Electrohome Industries Ltd. : *See*—
Szabo, John. 3,373,241.

Dore Development Co., Inc., The : *See*—
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Dorr, John A., and M. L. Hiller, to Westinghouse Electric Corp. Sonar bottom tracking recording system. 3,373,399, 3–12–68, Cl. 340—3.

Dory, Jacques, to Corporation Realisations Ultrasoniques. Digital ultrasonic thickness gauge. 3,372,576, 3–12–68, Cl. 73—67.9.

Dotto, Gianni A., to P. R. Mallory & Co., Inc. Timer having an adjustable time interval and a rapid advance. 3,372,597, 3–12–68, Cl. 74—3.52.

Doughboy Industries, Inc. : *See*—
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Douglas, Arthur J. : *See*—
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Bryner, Fred. 3,373,124.
Burgert, Billy E., and Moore. 3,373,121.
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Lowes, Fred J. 3,372,430.
Lowes, Fred J. 3,372,431.
Marcus, Stanley A. 3,372,854.
Mussell, Dorsey R. 3,373,011.
Prater, Ronald R. 3,372,752.
Pruitt Malcolm E., and Baggett. 3,373,009.
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Dow Corning Corp. : *See*—
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Dow, Richard, and C. R. Hutter, to E. I. du Pont de Nemours and Co. Water-desensitized blasting caps. 3,372,640, 3–12–68, Cl. 102—28.

Dow, Ronald C., to Power Engineering, Inc. D.C. motor control circuit. 3,373,331, 3–12–68, Cl. 318—331.

Dowty Technical Developments Ltd. : *See*—
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Doyle, William C., Jr., to Tenneco Chemicals, Inc. Polymers of allo-ocimene diepoxide and ammonia and their production. 3,373,149, 3–12–68, Cl. 260—88.3.

Draber, Wilfried : *See*—
Cherdron, Harald H. O., Ohse, Palm, Draber, Falbe, and Korte. 3,373,169.

Drapeau, Raoul E. : *See*—
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Dreitzler, David R., and R. E. Yell, to United States of America, Army. Infinite resolution, automatic calibration curve plotter. 3,372,571, 3–12–68, Cl. 73—1.

Dresser Industries, Inc. : *See*—
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Drinkard, William C., Jr., to E. I. du Pont de Nemours and Co. Inorganic polymers. 3,373,001, 3–12–68, Cl. 23—358.

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Maffet, Vere. 3,373,023.
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McDaniel, Edgar L., and Hawk. 3,373,183.
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Eastman, Watson S., and L. M. Bergman ; said Bergman assors. to said Eastman. Pulp and fiber molding apparatus including resin application means. 3,373,079, 3–12–68, Cl. 162—265.

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Edmunds, Robert T., to Norwich Pharmacal Co. Method of preparing aspirin. 3,373,187, 3–12–68, Cl. 260—480.

Edwards, Bryant, to Illinois Tool Works Inc. Method of applying a closure to a filled container. 3,372,525, 3–12–68, Cl. 53—40.

Edwards, Bryant, to Illinois Tool Works Inc. Insulated double cap. 3,372,830, 3–12–68, Cl. 220—9.

Edwards, James W., to Monsanto Co. Method of making curved electrostatic printing screens. 3,372,639, 3–12–68, Cl. 101—128.3.

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Eisler, Paul. Method of drying by electrical means. 3,372,487, 3–12–68, Cl. 34—1.

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Engel, Walter, and L. Roth, to Siemens Aktiengesellschaft. Counting device with means for remote indication. 3,373,268, 3–12–68, Cl. 235—92.

Engelbrecht, Robert M., R. N. Moore, and J. C. Hill, to Monsanto Co. Hydrogenolysis of sym-diphenylethane to ethylbenzene. 3,373,217, 3–12–68, Cl. 260—668.

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Eppendahl, Pierre C., to Thermiguides S.A. Tension control for textile machines. 3,372,888, 3–12–68, Cl. 242—150.

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Epstein, Sidney, and D., to Vadys Associates, Ltd. Determination of geophysical properties of the sea bottom. 3,373,400, 3–12–68, Cl. 340—7.

Erhart, Andrew P., and J. A. Young, Jr., to Burd & Fletcher Co. Lid for egg carton. 3,372,856, 3–12–68, Cl. 229—51.

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Evans, George S., to Westinghouse Electric Corp. Amalgam-containing fluorescent lamp with integral starting aid. 3,373,303, 3–12–68, Cl. 313—109.

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Ferington, Thomas E., to W. R. Grace & Co. Laminates having an adhesive composition containing an oxidized polyethy ene and a rubbery terpolymer. 3,373,078, 3–12–68, Cl. 161—217.

Filipak, Edmund H., to Westinghouse Electric Corp. Electric range. 3,373,261, 3–12–68, Cl. 219—463.

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Findl, Eugene, to Electro-Optical System, Inc. Data storage device and method. 3,373,091, 3–12–68, Cl. 204—18.

Finestone, Arnold B., and G. Goldberg, to Foster Grant Co., Inc. Polymerization of ABS resins in the presence of low molecular weight, thermally-initiated polystyrene. 3,373,227, 3–12–68, Cl. 260—880.

Finn, John J. Boot with fit adjustment means. 3,372,495, 3–12–68, Cl. 36—2.5.

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Fisher, Fenton M., to Friden, Inc. Chad collection apparatus. 3,372,717, 3–12–68, Cl. 141—325.

Fisher, Julian V. Snap-in type grommet. 3,372,441, 3–12–68, Cl. 24—141.

Fisher, Julian V., to Illinois Tool Works Inc. Self-locking bushing. 3,372,960, 3–12–68, Cl. 308—15.

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Flint, Frank B., to Automatic Radio Mfg. Co., Inc. Electrical transducing. 3,372,937, 3–12–68, Cl. 274—11.

Flint, Hyland C. Unison action seat. 3,372,955, 3–12–68, Cl. 297—300.

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Foley, John T., and G. Barker, to Witco Chemical Co., Inc. Water-soluble surfactant compositions in the form of condensation products of long chain monocarboxylic acids, diethanolamine and aromatic polybasic acids in certain mol ratios. 3,373,173, 3–12–68. Cl. 260—404.

Folkins, Hillis O., and J. W. Walsh, to Union Oil Co. of California. Friedel crafts catalyst, plus bitumen to produce pitch of increased beta resin content. 3,373,101, 3–12–68, Cl. 208—40.

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Foote, Allan E., and A. W. Tower, to Container Corp. of America. Interchangeable cap for package. 3,372,796, 3–12–68, Cl. 206—46.

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Forbro Design Corp. : *See*—
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Hung, Han-Min. 3,373,345.

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Ford, Robert J., to The Boeing Co. Apparatus for forming plastic members. 3,372,435, 3–12–68, Cl. 18—35.

Formica Corp. : *See*—
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Fort, Godfrey, to United States of America, Navy. Difluoramino-1-dimethanesulphonylpiperazines. 3,373,164, 3–12–68, Cl. 260—268.

Foster Grant Co., Inc. : *See*—
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Foster, John E., to United States of America, Army. Pressure retention chamber for smoke marker grenade. 3,372,641, 3–12–68, Cl. 102—65.

Foster Wheeler Corp. : *See*—
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Foulke, Donald G., to Sel-Rex Corp. Gold and gold alloy electroplating. 3,373,094, 3–12–68, Cl. 204—43.

Frangos, John, to Revlon, Inc. Valve for upright or inverted use. 3,372,845, 3–12–68, Cl. 222—402.18.

Frank, Bernard : *See*—
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Frankel, Edwin N., to United States of America, Agriculture. Conjugation of vegetable oils via iron tricarbonyl complex. 3,373,175, 3–12–68, Cl. 260—405.6.

Frawley, Kenneth O. Postage stamp dispenser. 3,372,670, 3–12–68, Cl. 118—42.

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French, Lawrence L. Remote-controlled automatically operating irrigation gates. 3,372,549, 3–12–68, Cl. 61—24.

Friden, Inc. : *See*—
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Tressel, Willard J. 3,372,675.

Friedrich, John P., to United States of America, Agriculture. Tetramethyl cyclobutanediol diesters of linseed-derived C18 saturated vicinally substituted cyclic monocarboxylic acid isomer mixture. 3,373,176, 3–12–68, Cl. 260—410.

Frieling, Gerald H., Jr., to Texas Instruments Inc. Method of bonding layers to an austenitic chromium steel core. 3,372,465, 3–12–68, Cl. 29—474.1.

Frilette, Vincent J., and R. W. Maatman, to Mobil Oil Corp. Crystalline aluminosilicate catalyst. 3,373,109, 3–12–68, Cl. 252—455.

Fruzzetti, Paul R., to National Research Corp. Polarity reversing switch for electron tube. 3,373,289, 3–12–68, Cl. 307—113.

Fuerst, Peter E., to General Electric Co. Laminates. 3,373,070, 3–12–68, Cl. 161—79.

Fuerst, Peter E., to General Electric Co. Laminates. 3,373,071, 3–12–68, Cl. 161—79.

Fuhrmann, Robert, E. C. Lazar, and J. F. Van Peppen, to Allied Chemical Corp. Poly(N-acylethylenimines) from 2-substituted-2-oxazolines. 3,373,194, 3–12–68, Cl. 260—559.

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Fujinami, Takeshi D., to Radio Corp. of America. Linear logarithmic amplifying detector. 3,373,294, 3–12–68, Cl. 307—230.

Fujioka, Robert K., and T. M. Uyeda, to Samsonite Corp. Luggage handle assembly. 3,372,780, 3–12–68, Cl. 190—37.

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Fulton, Carolyn S. : *See*—
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Fulton, Robert T., deceased ; by A. M. Fulton, executor, ⅓ to Standard Fiscal, Inc., and ⅓ to C. S. Fulton. Reversible friction drive device. 3,372,781, 3–12–68, Cl. 192—43.

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Gable, Gerald K., and G. D. Hudelson, to Carrier Corp. Method for forming a thermoelectric module. 3,372,472, 3–12–68, Cl. 29—611.

Gabor, Andrew, to Potter Instrument Co., Inc. Unsymmetrical high density magnetic recording system. 3,373,415, 3–12–68, Cl. 340—174.1.

Gadbois, George A., to United States of America, Navy. Four-channel telemetry circuit. 3,373,405, 3–12–68, Cl. 340—147.

Galster, Jon. Violin support. 3,372,614, 3–12–68, Cl. 84—280.

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Garbers, Ernst. Railway car moving device. 3,372,652, 3–12–68, Cl. 104—26.

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Getchell, Nelson F., and W. R. Thomas, III, to Cotton Producers Institute. Durable press garments and method for altering seams. 3,372,404, 3–12–68, Cl. 2—275.

Geurst, Jan A., and G. L. Walther, to North American Philips Co., Inc. Multirole magnetic head assembly. 3,373,416, 3–12–68, Cl. 340—174.1.

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Gilbert, Brian, to Joseph Lucas (Industries) Ltd. Spark ignition systems. 3,372,684, 3–12–68, Cl. 123—148.

Gilbert, Jack J., to B. Frank. Pressing irons. 3,372,499, 3–12–68, Cl. 38—77.

Gilker, Clyde, to McGraw-Edison Co. Repeating circuit interrupter with improved step advance control means. 3,373,317, 3–12–68, Cl. 317—22.

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Glass, John A., and W. H. Urry, to Monsanto Co. Purification process. 3,373,180, 3–12–68, Cl. 260—450.

Glazer, Emmett J., and E. S. Smith, to The Goodyear Tire & Rubber Co. Polyvinyl chloride resins having improved fusing properties. 3,373,228, 3–12–68, Cl. 260—884.

Gleasman, Hollis K., to The Bendix Corp. Three-speed hub gearing for velocipedes. 3,372,608, 3–12–68, Cl. 74—750.

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Gluek, Charles. Production of malt liquor products having very low protein, sugar and real extract contents with distinctive vinous flavor. 3,373,040, 3–12–68, Cl. 99—31.

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Grove, Marvin H., and K. W. Kim, to M & J Valve Co. Valve body construction. 3,372,903, 3–12–68, Cl. 512—329.

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Grunwald, John J., to MacDermid Inc. Dry compositions for deoxidizing and desmutting aluminum and aluminum alloys. 3,373,114, 3–12–68, Cl. 252—136.

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Hales, Ralph A., and F. A. Hughes, to Atlas Chemical Industries, Inc. Process for preparing oxyalkylene amines. 3,373,204, 3–12–68, Cl. 260—570.7.

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Hardy, John F., and M. E. Jordan, to Cabot Corp. Process for producing finely-divided metal products. 3,373,013, 3–12–68, Cl. 75—.5.

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Heil, Theodore. Game board and small bounceable ball. 3,372,934, 3–12–68, Cl. 273—95.

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McCash, Robert M., to Cincinnati Milling Machine Co. Tool adapter for reciprocating drawbolt connection. 3,372,951, 3–12–68, Cl. 287—91.

McCleerey, Earl W., to Westinghouse Electric Corp. Iron. 3,372,498, 3–12–68, Cl. 38—77.

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McClure, Robert L., to Beaunit Corp. Process of producing acrylonitrile never dried cuprammonium cellulose rayon yarn graft polymers. 3,373,125, 3–12–68, Cl. 260—17.4.

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McCunn, Myron L., to Deere & Co. Cotton harvester. 3,372,536, 3–12–68, Cl. 56—12.

McDaniel, Edgar L., and J. P. Hawk, to Eastman Kodak Co. Manufacture of 2,2,4,4-tetraalkyl-3-oxobutyronitriles. 3,373,183, 3–12–68, Cl. 260—465.1.

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McDonald, John J., to R. Hoe & Co., Inc. Paper reel tension control. 3,372,886, 3–12–68, Cl. 242—75.42.

McGirr, Robert, to Atlas Chemical Industries, Inc. Cooking range ventilating system. 3,372,692, 3–12–68, Cl. 126—299.

McGrath, Laurence R., and R. A. Moore, to Allis-Chalmers Mfg. Co. Hydraulic valve control lever. 3,372,606, 3–12–68, Cl. 74—491.

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McLean, Francis A., N. Knowlton, and N. E. Steiner, to G. Darbyson. Keypunch machine. 3,372,866, 3–12–68, Cl. 234—123.

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Meitzer, Elliott A. Heated windshield wiper. 3,372,421, 3–12–68, Cl. 15—250.06.

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Metcalf, Joe S., K. J. Shaver, and C. Y. Shen, to Monsanto Co. Trisodium dipotassium tripolyphosphates and processes for their manufacture. 3,372,984, 3–12–68, Cl. 23—107.

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Meyerer, Paul, to Siemens Aktiengesellschaft. Permanent magnet system for the generation of at least two opposite magnetic fields lying one behind the other for the bundled guidance of an electron beam, especially for traveling wave tubes. 3,373,388, 3–12–68, Cl. 335—210.

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Pashaian, Sark : *See*—
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Pasternak, Israel S., M. Vadekar, and C. S. Giam, to Esso Research and Engineering Co. Process for dehydrogenating hydrocarbons. 3,373,213. 3–12–68, Cl. 260—666.

Pauels, Heinrich, and W. Meier, to Schloemann Aktiengesellschaft. Method of withdrawing the strand from a continuous casting machine. 3,372,731. 3–12–68, Cl. 164—82.

Paul, Maynard C., and P. E. Oberg, to Sperry Rand Corp. Deflecting particles in vacuum coating process. 3,373,050, 3–12–68. Cl. 117—106.

Pearce, Thomas H., to National-Standard Co. Tire beads and methods of making same. 3,372,894. 3–12–68. Cl. 245—1.5.

Pears, Gordon E. A., and A. Pajaczkowski, to Imperial Chemical Industries Ltd. Polymerising vinyl chloride. 3,373,150, 3–12–68. Cl. 260—92.8.

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Yungblut, Charles W., Wright, and Peart. 3,373,396.

Pechacek, Raymond E., and E. J. Clay, to Hahn & Clay. Vessel assembly. 3,372,828, 3–12–68, Cl. 220—5.

Pechiney Compagnie de Produits Chimiques et Electrometallurgiques : *See*—
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Peiffer, Howard R., and T. J. Schmetz. Method of making permanent connections between interfitting parts. 3,372,476, 3–12–68, Cl. 29—628.

Pelikan George A. : *See*—
Romilius, Charles F., and Pelikan. 3,372,779.

Pellegrini, Frank L., to Stenomation Inc. Stenographic apparatus providing punched tape record. 3,372,865, 3–12–68, Cl. 234—36.

Pembroke, George F., J. G. E. Hillman, and J. E. New, to Molins Machine Co. Ltd. Apparatus for feeding mouthpieces for cigars, cigarettes and the like. 3,372,790, 3–12–68. Cl. 198—33.

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Perkins, Charles H., to Robertshaw-Fulton Controls Co. Gage constructions and parts therefor or the like. 3,372,595, 3–12–68, Cl. 73—414.

Perrin, Jean A., to Societe le Carbone Lorraine. Negative electrodes for carbon arc lamps. 3,373,308, 3–12–68, Cl. 313—357.

Perry, Walter J. Rotary shaft mounting. 3,372,604, 3–12–68, Cl. 74—421.

Pessel, Leopold, to Radio Corp. of America. Chalcogenide thermoelectric device having a braze comprising antimony compounds and method of forming said device. 3,373,061, 3–12–68. Cl. 136—237.

Peterson, Glen, and H. A. Burns. Means for protecting transistors from high voltage pulses. 3,373,291, 3–12–68, Cl. 307—202.

Peterson, Harold F., to Armour and Co. Package and insert label. 3,373,045. 3–12–68, Cl. 99—171.

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Petzold, Dieter, to Licentia Patent-Verwaltungs-G.m.b.H. Static counter incorporating stages having main and auxiliary stores. 3,373,362, 3–12–68, Cl. 328—41.

Pfaff, William A. Photographing and developing apparatus. 3,372,617. 3–12–68, Cl. 88—24.

Pfluger, Richard T., to Atwood Vacuum Machine Co. Hot water heating system. 3,372,871, 3–12–68, Cl. 237—8.

Philbrick, George A., Researches Inc. : *See*—
Hansen, Peter D., and Malter. 3,373,293.

Phillips, Brian L., and D. S. Adams, to Joseph Lucas (Industries) Ltd. Spark ignition systems. 3,372,681, 3–12–68, Cl. 123—148.

Phillips, Brian L., and D. S. Adams, to Joseph Lucas (Industries) Ltd. Spark ignition systems for internal combustion engines. 3,372,682, 3–12–68, Cl. 123—148.

Phillips, Brian L., and D. S. Adams, to Joseph Lucas (Industries) Ltd. Spark ignition systems. 3,372,683, 3–12–68, Cl. 123—148.

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Lawrenson, Jack, and Silverwood. 3,373,008.

Pinckaers, Balthasar H., to Honeywell Inc. A.C. magnitude responsive electronic relay. 3,373,296, 3–12–68, Cl. 307—247.

Pinder, Harold W., S. Beal, and D. Merrill, to Cintride Ltd. Cutting tools for machines. 3,372,451, 3–12–68, Cl. 29—96.

Pinkas, Peter F., and C. J. Brian, Jr., to Borg-Warner Corp. Contaminant resistant fluid supply system. 3,372,646, 3–12–68, Cl. 103—126.

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Polley, Robert W., and R. W. Tabor, to Sanders Associates, Inc. System for weldable circuits. 3,372,474, 3–12–68, Cl. 29—628.

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Popoff, Ivan C., and B. Loev, to Pennsalt Chemicals Corp. Dihalocyclopropyl aromatic carboxylic acid. 3,373,190, 3–12–68, Cl. 260—515.

Porteous, Kenneth, Sr. Lockheed Aircraft Corp. Code-punched document recording device. 3,373,439, 3–12–68, Cl. 346—79.

Porter, Maurice R., and B. Longden, to Midland Silicones Ltd. Foamed polyurethanes. 3,373,122, 3–12–68, Cl. 260—2.5.

Porter, Willington W. Harvest shaker. 3,372,806, 3–12–68, Cl. 209—247.

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Poull, Maurice, and E. Zurcher. Radially clamping grips. 3,372,537, 3–12–68, Cl. 57—59.

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Power, George E. : *See*—
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Powers, Eugene L., to Mobay Chemical Co. Purification of isocyanates by reduction of the hydrolyzable chlorine and acid content. 3,373,182, 3–12–68, Cl. 260—453.

Powers, William J., Jr., and N. C. Wyeth, to E. I. du Pont de Nemours and Co. Process for molding molecularly oriented plastic container closures. 3,373,238, 3–12–68, Cl. 264—322.

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Prast, Gijsbert, to North American Philips Co., Inc. Arrangement for producing cold at very low temperatures. 3,372,554, 3–12–68, Cl. 62—6.

Prater, Ronald R., to The Dow Chemical Co. Hydraulic fracturing. 3,372,752, 3–12–68, Cl. 166—42.

Prescott, George R., and H. W. Sharp, to C. F. Braun & Co. Apparatus for stress-relieving pipe welds. 3,372,916, 3–12–68, Cl. 266—2.

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Pribyl, Edward J., and J. Bernstein, to E. R. Squibb & Sons, Inc. 2-substituted aminomethylcyclooctyl amides of alkyl substituted acetic acid. 3,373,195, 3–12–68, Cl. 260—559.

Price, David B., to Westinghouse Electric Corp. Method of fabricating percolator vessel and pump constructions. 3,372,473, 3–12–68, Cl. 29—611.

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Prines, Frank J., and E. R. Pledger, to Westinghouse Electric Corp. Power supply system for low-frequency and high-frequency discharge devices and switching means therefor. 3,373,313, 3–12–68, Cl. 315—86.

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Pruitt, Malcolm E., and J. M. Baggett, to The Dow Chemical Co. Nutrient plant matrix. 3,373,009. 3–12–68, Cl. 71—28.

Pryor, Cabell N., Jr., and C. R. Greene, Jr., to United States of America, Navy. One-sample real time cross-correlator. 3,373 359, 3–12–68, Cl. 324—77.

Pryor, Michael J., and J. Winter, to Olin Mathieson Chemical Corp. Method of coating a copper silver alloy with a silver coat. 3,372,468, 3–12–68, Cl. 29—528.

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Ravner, Harold, and C. H. Blachly, to United States of America, Navy. Stabilization of monoethanolamine solutions in carbon dioxide scrubbers. 3,372,981, 3–12–68, Cl. 23—4.

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Raymond, Samuel O., and P. L. Sachs, to United States of America, Navy. Free fall core sampler. 3,372,760, 3–12–68, Cl. 175—5.

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Redford, Alan H., and G. Boothroyd, to National Research Development Corp. Vibratory conveyor systems. 3,372,793, 3–12–68, Cl. 198—220.

Reece, Michael P., to Associated Electrical Industries Ltd. Apparatus for testing the arc capability of an electrical circuit breaker. 3,373,350, 3–12–68, Cl. 324—28.

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Reedy, Terrence A., Jr., to Lion Mfg. Corp. Coin chute structure. 3,372,783, 3–12–68, Cl. 194—1.

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Richardson, Harry L., to Chemical Construction Corp. Apparatus for recovery of converter off-gases. 3,372,917, 3–12–68, Cl. 266—15.

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Robertson, James H. Ring-shaped swimming aid for children and method of making the same. 3,372,412, 3–12–68, Cl. 9—311.

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Rotary Hoes Ltd. : *See*—
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Rude, Raymond C. Movable fulcrum for springboards. 3,372,927, 3–12–68, Cl. 272—66.

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Rummel, Raymond W., to Farr Co. Self-supporting high density filter. 3,372 533, 3–12–68, Cl. 55—499.

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Ryan, Joseph D. Portable salt dissolver for melting ice and snow. 3,372,995, 3–12–68, Cl. 23—267.

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Sabo, Joseph F. Apparatus for removing radioactive materials from water. 3,372,808, 3–12–68, Cl. 210—95.

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Sakabe, Mitsugu, H. Shiomi, and S. Inaba, ½ each to Nippon Kokuyu Tetsudo (known in English as Japanese National Railways), Kaisha Seizo Kaisha, Ltd., and Fujitsu Ltd. Control system for the comparative regulation of the diameters of a pair of wheels. 3,372,517, 3–12–68, Cl. 51—165.

Sakamoto, Toemon. Weft thread cutting device for use in shuttleless looms. 3,372,711, 3–12–68, Cl. 139—122.

Salisbury, Joel. Snow sled. 3,372,945, 3–12–68, Cl. 280—18.

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Sanderson, Wilson I., and R. M. Lasater, to Halliburton Co. Method of determining the extent of return to the surface of an oil well treatment fluid. 3,372,746, 3–12–68, Cl. 166—4.

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CLASSIFICATION OF PATENTS

ISSUED MARCH 12, 1968

NOTE.—First number, class; second number, subclass; third number, patent number

2–159	3,372,401	29–429	3,372,461	61–24	3,372,549	92–84	3,372,624	118–637	3,372,675	165–80	3,372,741
232	3,372,402	447	3,372,462	36	3,372,550	93–35	3,372,625	119–52	3,372,676	96	3,372,742
269	3,372,403	470.3	3,372,463	45	3,372,551	94–40	3,372,626	122–7	3,372,677	166	3,372,743
275	3,372,404	473.1	3,372,464	54	3,372,552	95–1.7	3,372,627	235	3,372,678	167	3,372,744
5–81	3,372,405	474.1	3,372,465	85	3,372,553	44	3,372,628	123–136	3,372,679	166–.5	3,372,745
347	3,372,406	475	3,372,466	62–6	3,372,554	89	3,372,629	139	3,372,680	4	3,372,746
	3,372,407	480	3,372,467	13	3,372,555	94	3,372,630	148	3,372,681	7	3,372,747
8–120	3,372,977	528	3,372,468	45	3,372,556	96–1	3,373,019		3,372,682	9	3,372,748
	3,372,979	573	3,372,469	262	3,372,557	.5	3,373,020		3,372,683		3,372,749
127.6	3,372,978	599	3,372,470	320	3,372,558	33	3,373,021		3,372,684	11	3,372,750
9–1	RE.26,363	600	3,372,471	64–1	3,372,559	49	3,373,022	198	3,372,685	27	3,372,751
6	3,372,408	611	3,372,472	4	3,372,560	113	3,373,023	124–24	3,372,686	42	3,372,752
8	3,372,409		3,372,473	28	3,372,561	98–2	3,372,631	125–11	3,372,687	45	3,372,753
.3	3,372,410	626	3,372,474	65–1	3,373,006	115	3,372,632	126–24	3,372,688	59	3,372,754
311	3,372,411	628	3,372,475	161	3,373,007	99–2	3,373,024	140	3,372,689	63	3,372,755
	3,372,412		3,372,476	182	3,373,008		3,373,025	261	3,372,690	206	3,372,756
10–54	3,372,413	30–124	3,372,477	66–108	3,372,562		3,373,026	271	3,372,691	167–84.5	3,373,081
12–8.2	3,372,414	180	3,372,479	71–28	3,373,009		3,373,027	299	3,372,692	170–159	3,372,757
142	3,372,415	193	3,372,478	120	3,373,010		3,373,028	343.5	3,372,693		3,372,758
13–25	3,373,239		3,372,480	126	3,373,011		3,373,029	369	3,372,694	173–162	3,372,759
34	3,373,240	210	3,372,481	72–52	3,372,563		3,373,030	128–1	3,372,695	174–21	3,373,242
15–4	3,372,416	229	3,372,482	56	3,372,564		3,373,031	132	3,372,696	89	3,373,243
104.3	3,372,417	32–5	3,372,483		3,372,565		3,373,032	221	3,372,697	102	3,373,244
165	3,372,418	14	3,372,484		3,372,566		3,373,033	489	3,372,698	175–5	3,372,760
236	3,372,419	33–1	3,372,485	80	3,372,567		3,373,034	131–17	3,372,699	25	3,372,761
250.06	3,372,421		3,372,486	218	3,372,568		3,373,035		3,372,700	104	3,372,762
.17	3,372,420	34–1	3,372,487	334	3,372,569		3,373,036		3,372,701	323	3,372,763
.42	3,372,422	46	3,372,488	416	3,372,570		3,373,037	94	3,372,702	176–28	3,373,082
	3,372,423	57	3,372,489	73–1	3,372,571		3,373,038	133	3,372,703	38	3,373,083
257.05	3,372,424	76	3,372,490		3,372,572		3,373,039	134–109	3,372,704	177–208	3,372,764
312	3,372,425	99	3,372,491	23.1	3,372,573	31	3,373,040	136–6	3,373,057	211	3,372,765
16–68	3,372,427	151	3,372,492	35	3,372,574	68	3,373,041	83	3,373,058	178–22	3,373,245
17–2	3,372,428	35–26	3,372,493	67.1	3,372,575	71	3,373,042	89	3,373,059	179–2	3,373,246
18–5	3,372,429	48	3,372,494	.9	3,372,576	77.1	3,373,043	100	3,373,060	100.2	3,373,247
	3,372,430	36–2.5	3,372,495	88.5	3,372,577	92	3,373,044	237	3,373,061		3,373,248
	3,372,431	37–119	3,372,496	105	3,372,578	171	3,373,045	137–268	3,372,705		3,373,249
8	3,372,432	38–2	3,372,497	141	3,372,579	175	3,373,046	329.03	3,372,706		3,373,250
30	3,372,433	77	3,372,498		3,372,580	277.1	3,372,633	505.25	3,372,707	111	3,373,251
	3,372,434		3,372,499		3,372,581	292	3,372,634	624.2	3,372,708	180–7	3,372,766
35	3,372,435	40–21	3,372,500	144	3,372,582	339	3,372,635	625.31	3,372,709	22	3,372,767
42	3,372,436	28	3,372,501	150	3,372,583	427	3,372,636	636.3	3,372,710	34	3,372,768
19–159	3,372,437	36	3,372,502	152	3,372,584	100–218	3,372,637	139–122	3,372,711	119	3,372,769
21–58	3,372,980	125	3,372,503	170	3,372,585	101–114	3,372,638	224	3,372,712	181–.5	3,372,770
23–4	3,372,981	130	3,372,504	171	3,372,586	128.3	3,372,639	140–113	3,372,713	182–229	3,372,771
18	3,372,982	158	3,372,505	190	3,372,587	102–28	3,372,640	141–1	3,372,714	230	3,372,772
106	3,372,983	42–7	3,372,506		3,372,588	65	3,372,641	59	3,372,715	188–1	3,372,773
107	3,372,984	43–9	3,372,507	194	3,372,589	70.2	3,372,642		3,372,716	73	3,372,774
143	3,372,985	21.2	3,372,509	204	3,372,590	99	3,372,643	325	3,372,717		3,372,775
151	3,372,986		3,372,510	231	3,372,591	103–1	3,372,644	143–32	3,372,718	100	3,372,776
	3,372,987	43.15	3,372,508	313	3,372,592	87	3,372,645	141	3,372,719	136	3,372,777
198	3,372,988	44–69	3,373,005	398	3,372,594	126	3,372,646	144–208	3,372,720	152	3,372,778
204	3,372,989	46–56	3,372,511	414	3,372,595	153	3,372,647	209	3,372,721	198	3,372,779
207	3,372,990	221	3,372,512	505	3,372,596		3,372,648	146–28	3,372,722	190–57	3,372,780
209.3	3,372,991	47–58	3,372,513	74–3.52	3,372,597	225	3,372,649	76	3,372,723	192–43	3,372,781
230	3,372,992	49–91	3,372,514	18.1	3,372,598	233	3,372,650	149–6	3,373,062	93	3,372,782
	3,372,993	205	3,372,515	89.2	3,372,599	104–12	3,372,651	7	3,373,063	194–1	3,372,783
254	3,372,994	51–34	RE.26,365	194	3,372,600	26	3,372,652	150–30	3,372,724	2	3,372,784
267	3,372,995	110	3,372,516	336	3,372,601	49	3,372,653	49	3,372,725	10	3,372,785
282	3,372,996	165	3,372,517	339	3,372,602	106–38.2	3,373,047	152–330	3,372,726	84	3,372,786
315	3,372,997	52–227	3,372,518	374	3,372,593	90	3,373,048	156–40	3,373,065	195–51	3,373,084
326	3,372,998	274	3,372,519	388	3,372,603	107–1	3,372,654	128	3,373,066	197–6.7	3,372,787
332	3,372,999	395	3,372,521	421	3,372,604	57	3,372,655	153	3,373,067	19	3,372,788
352	3,373,000	456	3,372,522	459	3,372,605	110–18	3,372,656	219	3,373,068	98	3,372,789
358	3,373,001	483	3,372,520	491	3,372,606	111–1	3,372,657	285	3,373,069	198–33	3,372,790
24–16	3,372,438	699	3,372,523	625	3,372,607	7	3,372,658	345	3,373,064	121	3,372,791
21	3,372,439	747	3,372,524	750	3,372,608	112–80	3,372,661	160–33	3,372,727	126	3,372,792
75	3,372,440	53–40	3,372,525	75–.5	3,373,012	91	3,372,659	39	3,372,728	220	3,372,793
141	3,372,441	230	3,372,526		3,373,013	158	3,372,660	330	3,372,729	200–6	3,373,252
201	3,372,442	358	3,372,527	43	RE.26,364	114–20	3,372,662	348	3,372,730	38	3,373,253
	3,372,443	55–106	3,372,528	68	3,373,014	66.5	3,372,663	161–79	3,373,070		3,373,254
204	3,372,444	118	3,372,529	128	3,373,015	67	3,372,664		3,373,071	140	3,373,255
25–11	3,372,445	257	3,372,530	173	3,373,016	206	3,372,665	116	3,373,072	159	3,373,256
118	3,372,448	269	3,372,531	177	3,373,017	235	3,372,666	144	3,373,073	166	3,373,257
28–1	3,372,446	341	3,372,534	211	3,373,018	115–12	3,372,667	161	3,373,074		3,373,258
4	3,372,447	394	3,372,532	77–5	3,372,609	116–31	3,372,668	185	3,373,075	201–21	3,373,085
29–37	3,372,449	499	3,372,533	58	3,372,610	137	3,372,669	189	3,373,076	39	3,373,086
43	3,372,450	56–12	3,372,535	81–60	3,372,611	117–60	RE.26,362	198	3,373,077	202–135	3,373,087
96	3,372,451		3,372,536	62	3,372,612	76	3,373,049	217	3,373,078	185	3,373,088
156.4	3,372,452	57–59	3,372,537	82–24	3,372,613	106	3,373,050	162–265	3,373,079	203–40	3,373,089
157.3	3,372,453	59–79	3,372,538	84–1.25	3,373,241		3,373,051	343	3,373,080	204–2	3,373,090
182.1	3,373,002	60–24	3,372,539	280	3,372,614	111	3,373,052	164–82	3,372,731	18	3,373,091
.2	3,373,003	30	3,372,540	88–14	3,372,615	126	3,373,053	102	3,372,732	32	3,373,092
	3,373,004	39.65	3,372,541	24	3,372,616	130	3,373,054	165–1	3,372,733	39	3,373,093
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(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

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Design Patents

6	210,443	9	210,486	17	210,505	26	210,508	36	210,473	37	210,492
	210,448	10	210,456		210,506	27	210,461		210,476		210,495
	210,449		210,457		210,507		210,465		210,479		210,496
	210,460		210,458	21	210,470		210,488		210,480		210,497
	210,462		210,459	25	210,500	29	210,463		210,481		210,498
	210,464	17	210,455	26	210,450	34	210,446		210,489		210,499
	210,477		210,468		210,451	36	210,447		210,490	48	210,484
	210,478		210,474		210,453		210,452		210,503		210,491
	210,504		210,475		210,467		210,454		210,509	51	210,466
9	210,445		210,483		210,494		210,472	37	210,487	55	210,485
	210,482		210,502								

Plant Patents

26	2,800	34	2,801

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

March 12, 1968 Volume 848 Number 2

TRADEMARKS

NOTICES

Service by Publication

A petition to cancel the registration identified below having been filed, and the notice of default of such proceedings sent by registered mail to registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrant listed herein, its assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, judgment will be entered against registrant and said registration will be canceled.

Benj. Allen & Co., Inc., assignee, by mesne assignments, of S. Buchsbaum & Co., Chicago, Ill., Reg. No. 281,957, Canc. No. 9023.

EDWIN L. REYNOLDS,
First Assistant Commissioner.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 106,108 (JOHNSON'S) S. C. Johnson & Son, Inc., Powdered wax, prepared wax, wood dye, paste wood filler, varnish remover and floor cleaner; **Reg. No. 176,053**, same, Polishing brushes; **Reg. No. 176,405**, same, Prepared wax in paste, powdered, and liquid forms for finishing and polishing floors and interior woodwork, and for paint and varnish remover; **Reg. No. 224,358**, same, Varnish; **Reg. No. 227,213**, same, Electric floor polishing machines; **Reg. No. 230,757**, same, Oil and spirit stains, varnish, and wood and crack filler; **Reg. No. 241,695**, same, Prepared wax, in paste, in powdered, or liquid form; **Reg. No. 247,965**, same, Lacquers; **Reg. No. 300,874** (JOHNSON'S AND DESIGN), same, Wax for coating and polishing wood, metal, and other surfaces and lacquers; **Reg. No. 301,319**, same, Polishing wax for coating and polishing wood, metal, and other surfaces; **Reg. No. 304,655** (JOHNSON'S WAX AND DESIGN), same, Polishing wax for coating and polishing wood, metal and other surfaces; **Reg. No. 305,536**, same, Wax for coating and polishing wood, metal, and other surfaces and lacquer; **Reg. No. 310,728** (JOHNSON'S AND DESIGN), same, Wax for coating and polishing wood, metal, and other surfaces, automobile cleaner and lacquer; **Reg. No. 336,511** (JOHNSON'S), same, Liquid wax polish for finishing and coating furniture and interior finished surfaces; **Reg. No. 344,112** (JOHNSON'S GLO-COAT), same, Liquid polish for finishing and coating floors and other surfaces of wood, linoleum, rubber, cork, tile, asphalt, concrete, cement, composition, mastic, magnesite, terrazzo, marble, travertine, stone, slate, and metal, and other materials; **Reg. No. 379,081** (JOHNSON'S TRAFFIC-COTE), same, Varnish; **Reg. No. 387,149** (JOHNSON'S BLEM), same, Cleaner for removing blemishes, white rings, scratches, and other stains and surface defects from wood surfaces; **Reg. No. 387,150** (JOHNSON'S SHUR-TRED), same, Liquid polish for finishing and coating floors and other surfaces of wood, linoleum, rubber, cork, tile, asphalt, concrete, cement, composition, mastic, magnesite, terrazzo, marble, travertine, stone, slate, and metal; **Reg. No. 399,110** (JOHNSON'S),

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	17,851
Date of oldest new application	Mar. 1, 1967
Date of oldest amended application (filing date)	Aug. 4, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	4-6-67	4-28-65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	4-19-67	8-4-64
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	3-1-67	10-28-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	3-17-67	9-10-65
Renewals (All Classes)	12-28-67	.....
Sec. 12(c) Publications (All Classes)	1-8-68	.....

Applications filed during the month of January 1968—2,350

Registrations Issued ---------- 414—No. 845,665 to No. 846,078
Renewals Issued ---------- 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional, single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

same, Rubber dressing to coat, preserve, renew, and clean all rubber, automotive and household articles; **Reg. No. 399,111** (JOHNSON'S RUBBER DRESSING), same Rubber dressing to coat, preserve, renew, and clean all rubber, automotive, and household articles; **Reg. No. 399,113** (JOHNSON'S WAX), same, Liquid wax polish for finishing and coating furniture and interior and exterior finished surfaces; **Reg. No. 399,113** (JOHNSON'S), same, Liquid wax polish for finishing and coating furniture and interior and exterior finished surfaces; **Reg. No. 400,242**, same, Cleaner for removing old wax and wax emulsions from floors and other surfaces; **Reg. No. 522,854** (JOHNSON'S SELBST-GLANZ), same, Floor polish; **Reg. No. 532,019** (JOHNSON'S ANT KILLER), same, Insecticide; **Reg. No. 541,660** (JOHNSON'S), same, Combination cleaning and polishing preparation for automobiles and enameled and painted surfaces; **Reg. No. 560,338**, same, Household cleaner for cleaning oriental and domestic rugs, upholstery, woolens, woodwork, venetian blinds, walls, and tile; **Reg. No. 642,931**, same, Long-handled, hand-manipulated applicator to facilitate cleaning and coating of floors and other surfaces; **Reg. No. 643,807**, same, Preparations for wax coating agricultural produce; **Reg. No. 646,281**, same, Laundry wax-starch; **Reg. No. 647,635**, same, Laundry and dry cleaning preparation for making fabrics water repellent and stain resistant; **Reg. No. 649,929**, same, Polishes, dressings, and cleaners for shoes; **Reg. No. 690,513**, same, Metal working preparations for use as lubricants and/or coolants; **Reg. No. 706,466** (JOHNSON'S SHINE-UP), same, Preparation for cleaning and waxing; **Reg. No. 717,618** (JOHNSON'S), same, Phenol derivatives and synthetic resinous compositions, both kinds of products being for general use in the industrial arts; **Reg. No. 718,418**, same, Preparations in paste and liquid form for polishing, protecting, and adding color to leather surfaces of shoes and other leather goods; **Reg. No. 726,593**, same, Cleaners for use on hard, resilient and soft surfaces in and around the home and in commercial institutional and industrial establishments; **Reg. No. 733,213** (JOHNSON'S SHINE), same, Preparations for polishing and protecting hard resilient surfaces; **Reg. No. 780,726** (JOHNSON'S), same, All purpose cleaners, and all purpose cleaners having incidental germicidal, deodorizing and sanitizing properties; **Reg. No. 799,861**, same, Phenolic derivatives and synthetic resinous compositions, both kinds of products being for general use in the industrial arts, filed July 5, 1967, D.C. Del. (Wilmington), Doc. 3374, *S. C. Johnson & Son, Inc.* v. *Johnson Home Products, Inc.* Final judgment valid and owned by plaintiff, defendant enjoined, Oct. 2, 1967.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 242,532. Redcor Corporation, Canoga Park, Calif. Filed Apr. 4, 1966.

RC

Class 21—Electrical Apparatus, Machines, and Supplies

For Buffer Amplifier Assemblies; Tape Format Sequencers; Amplifiers; Differential Amplifiers; Circuit Boards Containing Electronic and Electrical Components; Power Supplies; Transformers; Resistors; Capacitors; Inductors; Diodes; Transistors; and Filters (Int. Cl. 9).

First use Mar. 30, 1962.

Class 26—Measuring and Scientific Appliances

For Data Acquisition Systems; Digital to Analog Converters; Analog to Digital Converters; Precision Voltage Sources; Differential Voltmeters; Analog to Digital Multiplexers; Data Distributors; Seismic Recording Systems; Logging Systems; Sample and Hold Systems; Digital Computer Circuits; Analog Computer Circuits; and Counters (Int. Cl. 9).

First use November 1962.

SN 271,306. Clairol Incorporated, New York, N.Y. Filed May 12, 1967.

OPTION

Class 51—Cosmetics and Toilet Preparations

For Hair Spray, Hair Dressing, Moisture Lotion, Cologne, All Purpose Lotion, Talcum Powder, Personal Deodorant, and Shaving Cream (Int. Cl. 3).

Class 52—Detergents and Soaps

For Hair Shampoo and Toilet Soap (Int. Cl. 3).

First use Feb. 8, 1967.

SN 278,305. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Aug. 15, 1967.

MISS RITZ

Owner of Reg. Nos. 419,641, 819,631, and others.

Class 29—Brooms, Brushes, and Dusters

For Applicator Brushes and Applicator Sponges (Int. Cl. 21).

Class 51—Cosmetics and Toilet Preparations

For Lipstick, Lip Polish, Eye-Lid Make-Up, Make-Up Powder, Make-Up Foundation, Moisturizer, Absorbent Make-Up Powder, Face Make-Up Lotion, and Cleansing Facial Cream (Int. Cl. 3).

First use at least as early as Mar. 2, 1967.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 256,763. New York Limestone Corporation, White Plains, N.Y. Filed Oct. 19, 1966.

BRITESTRIPE

For Pulverized Limestone Used as an Athletic Field Marker (Int. Cl. 2).

First use Sept. 8, 1966.

SN 257,486. Hammond Plastics, Inc., Worcester, Mass. Filed Oct. 28, 1966.

GORDON SUPERDENSE

For Polystyrene in Granular Form Sold in Bulk. (Int. Cl. 1).

First use 1952; July 1946 as to "Gordon."

SN 265,034. Barzen of Minneapolis, Inc., Minneapolis, Minn. Filed Feb. 20, 1967.

Pacific

For Medium Red Clover (Int. Cl. 31).

First use Nov. 14, 1966.

SN 268,713. Gus Dettelbach, d.b.a. Georgia-Tennessee Mining & Chemical Co., Atlanta, Ga. Filed Apr. 10, 1967.

Inst-A-Sorb

For Absorbent Used for Cleaning Oil, Water, Grease, etc. From Floors by Absorbing the Material and Making It Easily Disposable (Int. Cl. 4).
First use about March 1958.

SN 269,174. FMC Corporation, Philadelphia, Pa. Filed Apr. 14, 1967.

FIBER 410

The word "Fiber" is disclaimed apart from the mark as shown.
For Rayon Staple Fiber (Int. Cl. 22).
First use Apr. 3, 1967.

SN 269,178. Fitzgerald Enterprises, Inc., Oakland, Calif. Filed Apr. 14, 1967.

FITZ E

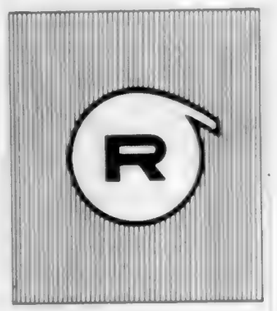
For Polyester Resins and Additives Therefor Sold as a Mix-in-Place, 2-Part Package for Use in Making Plastic Coatings and Castings, and for Molding and Sculpturing Purposes (Int. Cl. 1).
First use June 1963.

SN 268,275. American Polymers, Inc., Paterson, N.J. Filed Apr. 17, 1967.

AMPOL

For Plastic and Thermoplastic Molding Powders and Pellets (Int. Cl. 1).
First use during March 1967.

SN 269,564. The Richardson Company, Melrose Park, Ill. Filed Apr. 19, 1967.



The drawing is lined for the color red. Owner of Reg. Nos. 765,724 and 765,725.
For Thermoplastic and Thermosetting Resins (Int. Cl. 1).
First use during the fall of 1966.

SN 271,088. H. E. & C. D. Williams, Inc., Newark, N.J. Filed May 9, 1967.

VICTORIA

For Leather (Int. Cl. 18).
First use Nov. 15, 1962.

SN 271,089. H. E. & C. D. Williams, Inc., Newark, N.J. Filed May 9, 1967.

OLD GUARD

For Leather (Int. Cl. 18).
First use Nov. 14, 1962.

Class 2 — Receptades

SN 255,081. Jeffrey L. Fried, d.b.a. Walton-March, Highland Park, Ill. Filed Sept. 26, 1966.

GRIP/ALL

For Holder for Supporting Articles Such as Brooms, Mops, and the Like (Int. Cl. 21).
First use Sept. 1, 1966.

SN 264,964. Ravens-Metal Products, Inc., Parkersburg, W. Va. Filed Feb. 17, 1967.

RAVENS

For Boxes, Storage Bins, Liquid Storage Tanks, and Shipping Containers, All of Which Are Fabricated From Metal (Int. Cl. 6).
First use November 1958.

SN 287,480. Clack Corporation, Madison, Wis. Filed Dec. 26, 1967.

For Plastic Bottles (Int. Cl. 21).
First use July 19, 1965.

Class 4 — Abrasives and Polishing Materials

SN 283,488. Laco Corp., Baltimore, Md. Filed Oct. 27, 1967.

BENEFIT

For Self-Polishing Floor Wax (Int. Cl. 3).
First use Oct. 9, 1967.

Class 6 — Chemicals and Chemical Compositions

SN 258,182. Wade, Wenger Servicemaster Co., Downers Grove, Ill. Filed Nov. 7, 1966.

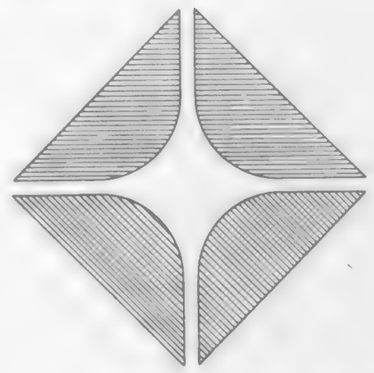
GERMGARD

For Sanitizing and Germproofing Preparation for Use on Carpet and Furniture Fabrics (Int. Cl. 5).
First use Oct. 10, 1966.

SN 265,259. Atlantic Richfield Company, Philadelphia, Pa. Filed Feb. 23, 1967.

For Surface Active Agents for Use in Household, Laundry, Shampoo, and Industrial Applications (Int. Cl. 1).
First use Dec. 9, 1966.

SN 265,260. Atlantic Richfield Company, Philadelphia, Pa. Filed Feb. 23, 1967.



The drawing is lined for green and blue, and color is claimed as a feature of the mark.
For Surface Active Agents for Use in Household, Laundry, Shampoo, and Industrial Applications (Int. Cl. 1).
First use Dec. 9, 1966.

SN 270,052. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brünings, Frankfurt am Main, Germany. Filed Apr. 26, 1967.

HOSTACHEM

Owner of German Reg. No. 775,351, dated June 13, 1962.
For Chemical Preparations for Destroying Animals and Plants; Disinfectants; Fire Extinguishing Agents; and Hardening and Curing Agents (Int. Cls. 1 and 5).

SN 272,309. Regis Chemical Company, Chicago, Ill. Filed May 24, 1967.

TAB

For N-Trifluoroacetyl N-Butyl Esters as a Reference Standard for Amino Acid Analysis (Not for Drug Use) (Int. Cl. 1).
First use Mar. 5, 1967.

SN 274,475. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed June 21, 1967.

ECONOCAL

For Calcium Chloride Liquor (Int. Cl. 1).
First use May 24, 1967.

SN 287,401. McLaughlin Gormley King Company, Minneapolis, Minn. Filed Dec. 22, 1967.

EVERBAN

Owner of Reg. Nos. 233,392 and 425,664.
For Insecticidal and Insect Proofing Composition (Int. Cl. 5).
First use on or about Mar. 27, 1952.

Class 7 — Cordage

SN 267,208. West Products Corp., Newark, N.J. Filed Mar. 20, 1967.

HOOK AND LADDER

For Synthetic Rope (Int. Cl. 22).
First use Feb. 1, 1967.

SN 267,504. Central Soya Company, Inc., Fort Wayne, Ind. Filed Mar. 24, 1967.

CSY

For Baler and Binder Twine and Rope (Int. Cl. 22).
First use on or before Nov. 27, 1966.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 262,489. Lane Limited, New York, N.Y. Filed Jan. 13, 1967.

GOLDEN RIDGE

For Pipes (Int. Cl. 34).
First use November 1966.

SN 263,784. Societe Franco Hispano Americaine Francispam, Paris, France. Filed Feb. 1, 1967.

SPECIAL FEMME
SILVER MATCH

The word "Femme" is the French equivalent of the English word "lady" or "woman." Owner of French Reg. No. 713,557, dated Aug. 8, 1966.
For Articles for Smokers, Particularly Lighters, Recharges for Lighters, and Cigarette Holders (Int. Cl. 34).

SN 279,728. Paul Garrity, Stamford, Conn. Filed Sept. 6, 1967.

DISPOZ-A-LITE

For Cigar, Cigarette, and Pipe Lighter (Int. Cl. 34).
First use Aug. 23, 1967.

SN 283,149. Peterson's Ltd., Inc., New York, N.Y. Filed Oct. 23, 1967.

THE LONDONER

For Men's Smoking Pipes (Int. Cl. 34).
First use Aug. 28, 1967.

Class 10 — Fertilizers

SN 268,027. G & D Sales Co., Inc., Freeport, N.Y. Filed Mar. 6, 1967.

MAGIC ENGLISH PELLETS

The words "English" and "Pellets" are disclaimed apart from the mark as shown.
For Fertilizer and Plant Growth Promoter in Tablet Form (Int. Cl. 1).
First use March 1964.

SN 267,029. Garden Products, Inc., South San Francisco, Calif. Filed Mar. 17, 1967.

The drawing is lined for the color yellow, and an outdoor garden plant is shown, but no claim is made to the color or drawing of the plant apart from the mark as shown.
For Organic Base Planters (Int. Cl. 1).
First use Feb. 10, 1967.

Class 12 — Construction Materials

SN 259,826. Richard H. Higgins, Hialeah, Fla. Filed Dec. 1, 1966.

JEWELSTONE

For Polished Stones for Decorative Building Use in the Nature of Crushed Gravel (Int. Cl. 19).
First use Sept. 15, 1966.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 260,052. Ken-Ray Brass Products, Inc., Vermont, Ill. Filed Dec. 5, 1966.

KEN-RAY

For Hydrants, Wall Faucets, Plumbing Fixtures, and Valves (Int. Cls. 6 and 11).
First use at least as early as 1953.

SN 265,682. Aerojet-General Corporation, El Monte, Calif. Filed Mar. 1, 1967.

SHOCKWELD

For Metal Articles—Namely, Transition Joints, Made by Explosive Forming, Bonding, or Welding Processes (Int. Cl. 6).
First use Jan. 27, 1967.

SN 269,467. Speakman Company, Wilmington, Del. Filed Apr. 18, 1967.

DUAL-SAFE

For Shower Valves (Int. Cl. 6).
First use Jan. 13, 1967.

SN 271,598. Club Aluminum Products Company, La Grange, Ill. Filed May 16, 1967.

TEMPO

For Metal Hollow Cookware (Int. Cl. 21).
First use May 5, 1967.

Class 14 — Metals and Metal Castings and Forgings

SN 238,494. The Cleveland Electro Metals Company, Cleveland, Ohio. Filed Feb. 10, 1966.

EY-BAR

For Consumable Deoxidizer for Molten Steel in the Form of Cast Bodies of Aluminum (Int. Cl. 6).
First use May 16, 1939.

SN 255,366. Stewarts and Lloyds Limited, Glasgow Scotland. Filed Sept. 28, 1966.

SERBEX

Owner of British Reg. No. 880,190, dated May 28, 1965.
For Weld Backing Members Made Principally of Common Metal With a Coating of a Refractory Oxide (Int. Cl. 6).

Class 15 — Oils and Greases

SN 253,662. Major Petroleum Company, Philadelphia, Pa. Filed Sept. 1, 1966.

MAJOR

For Fuel Oil Sold in Bulk (Int. Cl. 4).
First use 1935.

SN 253,663. Major Petroleum Company, Philadelphia, Pa. Filed Sept. 1, 1966.

MAJOR

For Fuel Oil Sold in Bulk (Int. Cl. 4).
First use at least as early as September 1959.

SN 254,856. Atlantic Richfield Company, Philadelphia, Pa. Filed Sept. 21, 1966.

ARCOIL

Owner of Reg. Nos. 741,180 and 744,003.
For Lubricating Oil (Int. Cl. 4).
First use July 13, 1966.

SN 277,278. Hangsterfer's Laboratories, Inc., Mantua, N.J. Filed Aug. 1, 1967.

HANGSTERFER'S 110 Q.D.

Owner of Reg. No. 833,203.
For Semi-Plastic Drawing Compound Used in the Reduction of Metal (Int. Cl. 4).
First use 1947.

SN 277,279. Hangsterfer's Laboratories, Inc., Mantua, N.J. Filed Aug. 1, 1967.

HANGSTERFER'S 111 Q.D.

Owner of Reg. No. 833,203.
For Semi-Plastic Drawing Compound Used in the Reduction of Metal (Int. Cl. 4).
First use 1947.

SN 277,281. Hangsterfer's Laboratories, Inc., Mantua, N.J. Filed Aug. 1, 1967.

HANGSTERFER'S HE-2

Owner of Reg. No. 833,203.
For Water Soluble Cutting, Stamping, and Drawing Compound Used in Processing of Metal (Int. Cl. 4).
First use 1961.

SN 277,282. Hangsterfer's Laboratories, Inc., Mantua, N.J. Filed Aug. 1, 1967.

HANGSTERFER'S 112 Q.D.

Owner of Reg. No. 833,203.
For Semi-Plastic Drawing Compound Used in the Reduction of Metal (Int. Cl. 4).
First use 1947.

Class 16 — Protective and Decorative Coatings

SN 244,724. National Paint & Oil Company, Nashville, Tenn. Filed May 2, 1966.

RUB-R-ROOF

For Liquified Rubber Roof Coating (Int. Cl. 2).
First use June 14, 1957.

SN 267,009. Mary Carter Paint Co., Tampa, Fla. Filed Mar. 17, 1967.

DURA PREME

For Interior and Exterior Paints; Enamels and Varnishes (Int. Cl. 2).
First use Mar. 13, 1967.

Class 17 — Tobacco Products

SN 271,052. John Chapman Limited, Johannesburg, Transvaal, Republic of South Africa. Filed May 9, 1967.

HANZA

Owner of South African Reg. No. 65/3488, dated Aug. 24, 1965.
For Tobacco, Raw or Manufactured (Int. Cl. 34).

SN 280,262. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

ATTACHE

For Cigarettes (Int. Cl. 34).
First use Sept. 5, 1967.

SN 280,263. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

APRIL

For Cigarettes (Int. Cl. 34).
First use Sept. 5, 1967.

SN 280,264. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

AUSTIN

For Cigarettes (Int. Cl. 34).
First use Sept. 1, 1967.

SN 280,265. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

BAXTER

For Cigarettes (Int. Cl. 34).
First use July 27, 1967.

SN 280,266. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

BATON

For Cigarettes (Int. Cl. 34).
First use Sept. 1, 1967.

SN 280,267. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

TING

For Cigarettes (Int. Cl. 34).
First use July 26, 1967.

SN 280,268. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

RING

For Cigarettes (Int. Cl. 34).
First use Sept. 1, 1967.

SN 280,269. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

SOUTHGATE

For Cigarettes (Int. Cl. 34).
First use Aug. 31, 1967.

SN 280,633. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 18, 1967.

HAMPSHIRE

For Cigarettes (Int. Cl. 34).
First use Sept. 8, 1967.

SN 280,634. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 18, 1967.

SAFARI

For Cigarettes (Int. Cl. 34).
First use Sept. 12, 1967.

SN 283,035. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Oct. 20, 1967.

FULTON

For Cigarettes (Int. Cl. 34).
First use Sept. 30, 1965.

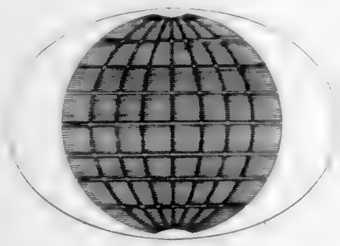
Class 18 — Medicines and Pharmaceutical Preparations

SN 269,950. Zip Feed Mills, Sioux Falls, S. Dak. Filed Apr. 24, 1967.

PURPLE RIBBON

For Mineral Pellets Used in Livestock Feeds (Int. Cl. 31).
First use Aug. 20, 1965.

SN 287,119. American Home Products Corporation, New York, N.Y. Filed Dec. 18, 1967.



The drawing is lined for the color blue.
For Calmative Preparation (Int. Cl. 5).
First use Mar. 17, 1967.

Class 19 — Vehicles

SN 253,538. Maremont Corporation, Chicago, Ill. Filed Aug. 31, 1966.

TITAN

For Shock Absorbers (Int. Cl. 12).
First use Oct. 4, 1963.

SN 254,231. The Budd Company, Philadelphia, Pa. Filed Sept. 12, 1966.

TURBOLINER

For Self-Powered Railway Passenger Cars With Turbine Engine Propulsion (Int. Cl. 12).
First use Sept. 7, 1966.

SN 254,799. Power Brake Parts Manufacturing Co., Chicago, Ill. Filed Sept. 20, 1966.

Diamond Lock

For Rear Vision Mirrors for Vehicles (Int. Cl. 12).
First use July 14, 1966.

SN 256,640. Atchison Products, Inc., Crystal Lake, Ill. Filed Oct. 18, 1966.

The representation of the goods on the drawing is disclaimed.
For Self-Propelled Cart or Dolly (Int. Cl. 12).
First use Jan. 7, 1965.

SN 262,293. Starcraft Corporation, Goshen, Ind. Filed Jan. 10, 1967.

STARCRAFT

Owner of Reg. Nos. 761,578 and 801,235.
For Pickup Campers (Int. Cl. 12).
First use Mar. 16, 1966.

SN 262,606. McDowell-Wellman Engineering Company, Cleveland, Ohio. Filed Jan. 16, 1967.

SCREW-TORQ

For Hatch Covers (Int. Cl. 12).
First use at least as early as April 1966.

SN 263,846. Redman Industries, Inc., Dallas, Tex. Filed Feb. 2, 1967.

Karousell

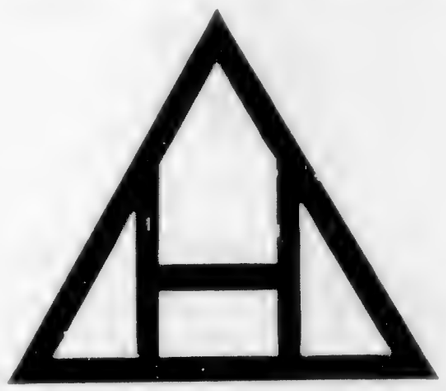
For Mobile Homes (Int. Cl. 12).
First use Jan. 19, 1967.

SN 264,791. Avanti Motor Corporation, South Bend, Ind. Filed Feb. 16, 1967.

AVANTI

For Automotive Vehicles—Namely, Automobiles (Int. Cl. 12).
First use July 26, 1965.

SN 270,237. Farm Chemicals of Oregon, Inc., d.b.a. Pacific Basin Trading Company, Athena, Oreg. Filed Apr. 28, 1967.



For Motorcycles (Int. Cl. 12).
First use on or about June 18, 1964.

SN 270,273. Rockwell-Standard Corporation, Pittsburgh, Pa. Filed Apr. 28, 1967.

THE TOUGH BIRDS

For Airplanes and Component Parts Thereof (Int. Cl. 12).
First use Mar. 30, 1967.

SN 280,173. Pacific Interchange Parts, Inc., Los Angeles, Calif. Filed Sept. 12, 1967.

PIP

For Automotive Parts—Namely, Steering Wheels (Int. Cl. 12).
First use on or about Aug. 2, 1965.

SN 281,736. Winnebago Industries, Inc., Forest City, Iowa. Filed Oct. 3, 1967.

THERMO-PANEL

Owner of Reg. No. 828,761.
For Panels, Wheelwells, Floors, Walls, Roofs, and Doors, Comprising Components of Completed Vehicles—Namely, Travel Trailers, House Trailers, Camp Coaches, Pick-Up Coaches, Pick-Up Campers, Pick-Up Cabs, Pick-Up Covers, Mobile Rigid Shelters, Mobile Offices, Truck Bodies, Motor Homes, Knock-Down Tent Trailers, Houseboats, and Pontoon Boats (Int. Cl. 12).
First use Aug. 6, 1963.

Class 20 — Linoleum and Oiled Cloth

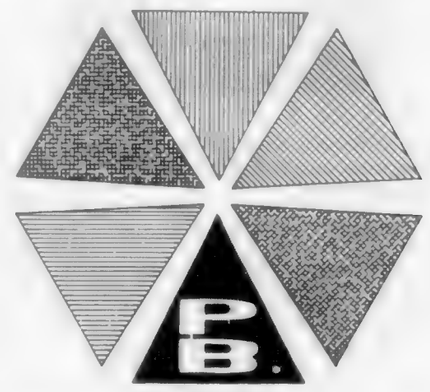
SN 275,238. Congoleum-Nairn Inc., Kearny, N.J. Filed July 3, 1967.

CORINTHIAN

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles (Int. Cl. 27).
First use June 13, 1967.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 236,632. Packard-Bell Electronics Corporation, Los Angeles, Calif. Filed Jan. 17, 1966.



Applicant disclaims the colors blue, yellow, red, green, and orange as integral portions of the mark although different colors are important in each of the different triangles to designate that applicant is marketing color television receivers.
Owner of Reg. No. 739,941.
For Color Television Receivers and Combinations of Color Television Receivers With High-Fidelity and Stereophonic Equipment and Radio Receivers (Int. Cl. 9).
First use July 27, 1964.

SN 239,792. Perma-Power Company, Chicago, Ill. Filed Feb. 28, 1966.

ELCTRO-LIFT

For Residential Garage Door Controllers (Int. Cl. 9).
First use Dec. 19, 1960.

SN 245,368. Life Instrument Company, Inc., Franklin, Mass. Filed May 9, 1966.

Life

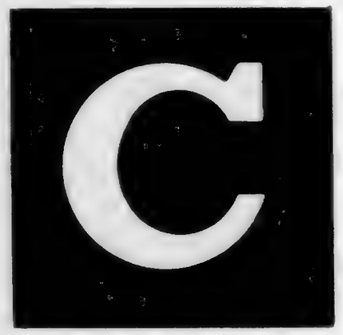
For Load Control Relays, Industrial Control Relays, Break Delay Relay Timers, Make Delay Relay Timers, Plug-In Plastic Enclosures for Radio Tube Sockets, Electro-Mechanical Position Transducers, and Photoresistive Cells and Relays Combined as a Photoelectric Control (Int. Cl. 9).
First use February 1961.

SN 247,601. Benjamin F. Brasch, d.b.a. Industrial Systems Company, Parma, Ohio. Filed June 8, 1966.

RELI-A-DYNE

For Metal Jacketed Electric Strip and Cartridge Heaters and Electric Heater Assemblies (Int. Cl. 11).
First use May 2, 1966, on electric strip heaters.

SN 248,675. Century Electric Company, St. Louis, Mo. Filed June 22, 1966.

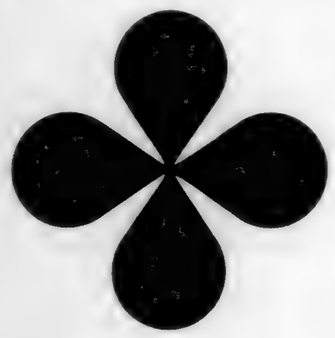


For Electric Motors and Component Parts Thereof, Including Gear Trains and Housings (Int. Cl. 7).
First use July 7, 1961.

SN 251,137. Instrument Systems Corporation, Huntington, N.Y. Filed July 27, 1966.

Owner of Reg. No. 691,580.
For Electronic Communication Equipment—Namely, Earphones, Microphones, Headsets, Cords, Amplifiers, and Parts Therefor (Int. Cl. 9).
First use November 1965.

SN 251,488. Westinghouse Electric Corporation, Pittsburgh, Pa. Filed Aug. 1, 1966.



For Electric Semiconductor Devices—Namely, Rectifiers, Transistors, and Thyristors (Int. Cl. 9).
First use on or about May 31, 1966.

SN 251,490. Yaou Denki Kabushiki Kaisha, Kawasaki-shi, Kanagawa-ken, Japan. Filed Aug. 1, 1966.

COLORNETRON

Owner of Japanese Reg. No. 666,796, dated Feb. 10, 1965.
For Television Receivers, Radio Receivers, Transceivers, and Cathode-Ray Tubes (Int. Cl. 9).

SN 252,394. Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka, Japan. Filed Aug. 15, 1966.

PORTA-STEREO

For Stereophonic Radio Receivers (Int. Cl. 9).
First use Apr. 14, 1966; in commerce Apr. 14, 1966.

SN 253,372. V-M Controls, Inc., Phoenix, Ariz. Filed Aug. 29, 1966.

For Relays and Controls Systems—Namely, Relays To Connect or Disconnect Appliance Branch Circuits and To Energize or De-Energize Solenoid Coils (Int. Cl. 9).
First use Mar. 15, 1966.

SN 254,182. Prescolite Manufacturing Corporation, San Leandro, Calif. Filed Sept. 9, 1966.

LITE-TRAC

For Electric Power Distribution Fixtures (Int. Cl. 9).
First use Aug. 8, 1966.

SN 254,897. Westinghouse Electric Corporation, Pittsburgh, Pa. Filed Sept. 21, 1966.

FOSTERITE

For Resinous Compositions for Insulating Electrical Apparatus (Int. Cl. 17).
First use on or about Aug. 19, 1944.

SN 255,004. International Telephone and Telegraph Corporation, New York, N.Y. Filed Sept. 23, 1966.

VIDISSECTOR

Owner of Reg. No. 344,793.
For Cathode Ray Tubes (Int. Cl. 9).
First use Jan. 18, 1966.

SN 259,720. Electrix, Inc., Port Chester, N.Y. Filed Nov. 30, 1966.

ELECTRIX

Owner of Reg. Nos. 778,162 and 779,026.
For Electric Table and Desk Lamps (Int. Cl. 11).
First use at least as early as September 1966.

SN 259,919. Hewlett-Packard Company, Palo Alto, Calif. Filed Dec. 2, 1966.

The drawing is lined for the color blue, but color is not claimed as an essential feature of the mark. Owner of Reg. Nos. 540,523, 645,097, and others.
For Electrical Systems, Instruments, Components, and Apparatus—Namely, Amplifiers, Power Supplies, Transducers, Probes and Electrodes, Transformers, Solid State Circuits and Components, Waveguide-to-Coaxial Adapters, Coaxial Connectors, and Cables (Int. Cl. 9).
First use Jan. 31, 1966.

SN 266,178. Karl Steiner, Hammond, Ind. Filed Mar. 7, 1967.

ELECTROLOGIC

For Motorized Variable Input Programmer and Card Reader for Controlling Machine Tools and Other Similar Uses (Int. Cl. 9).
First use Feb. 10, 1967.

SN 271,133. D. H. Baldwin Company, Cincinnati, Ohio. Filed May 10, 1967.

For Electronic Sound Amplifiers (Int. Cl. 9).
First use Dec. 9, 1966.

SN 287,698. GDO Company, Inc., Palisades Park, N.J. Filed Dec. 28, 1967.

For Electronic Garage Door Operators, Radio Remote Controls for Garage Door Operators and Other Remote Control Applications, Radio Control Transmitters, Radio Control Receivers, and Parts Thereof (Int. Cl. 9).
First use Jan. 30, 1967.

Class 22 — Games, Toys, and Sporting Goods

SN 243,458. Klipspringer Investments Proprietary Limited, Braybrook, Victoria, Australia. Filed Apr. 14, 1966.

Priority claimed under Sec. 44(d) on Australian application filed Oct. 15, 1965; Reg. No. A197,983, dated Dec. 5, 1967. The mark comprises longitudinally spaced pairs of relatively closely spaced lines on the goods.
For Strings for Racquets (Int. Cl. 28).

SN 245,588. Harvey W. Hempel, Jr., Milwaukee, Wis. Filed May 13, 1966.

HARVU

For Bonus Shot Situation Indicator for Use in Basketball Games (Int. Cl. 28).
First use Apr. 25, 1966.

SN 251,162. Stafco Corp., Mancelona, Mich. Filed July 27, 1966.

TRAIL-RITE

For Sleds for Sport, Amusement, and Entertainment Purposes (Int. Cl. 28).
First use at least as early as May 15, 1966.

SN 254,700. Robert F. Magness, Michigan City, Ind. Filed Sept. 19, 1966.

YANKEE TRADER

For Game Boards and Game Pieces (Int. Cl. 28).
First use July 6, 1966.

SN 263,516. American Character, Inc., New York, N.Y. Filed Jan. 30, 1967.

MENDY

For Dolls (Int. Cl. 28).
First use Nov. 15, 1966.

SN 265,002. Woodstream Corporation, Lititz, Pa. Filed Feb. 17, 1967.

JAGUAR

For Fishing Tackle and Equipment—Namely, Tackle Boxes, Fishing Reels, and Parts Thereof (Int. Cl. 28).
First use Feb. 9, 1967.

SN 265,004. Woodstream Corporation, Lititz, Pa. Filed Feb. 17, 1967.

CHEETAH

For Fishing Tackle and Equipment—Namely, Tackle Boxes, Fishing Reels, and Parts Thereof (Int. Cl. 28).
First use Feb. 9, 1967.

SN 265,933. T. J. Thomas Co., Inc., Brooklyn, N.Y. Filed Mar. 3, 1967.

The word "Cycle" is disclaimed apart from the mark as shown.
For Electric, Bicycle-Type Exercising Machines (Int. Cl. 28).
First use on or about Feb. 1, 1967.

SN 268,173. Byerly Aircraft Company, Salem, Oreg. Filed Apr. 3, 1967.

MONSTER

For Amusement Park and/or Carnival-Type Amusement Ride (Int. Cl. 28).
First use Apr. 21, 1962.

SN 273,175. Milton Bradley Company, Springfield, Mass. Filed June 6, 1967.

OH NO

For Equipment Sold as a Unit Comprising Delineated Playing Mats for Playing a Parlor Game (Int. Cl. 28).
First use Mar. 1, 1967.

SN 275,912. Buddy L Corporation, East Moline, Ill. Filed July 13, 1967.

auto action

For Toys, Particularly Toys Used as Accessories for or in Relation to Toy Vehicles Such as Replicas in Reduced Size of Service Lifts, Traffic Lights, Toll Booths, and Gasoline Pumps (Int. Cl. 28).
First use Mar. 31, 1967.

SN 287,201. Whitman Publishing Company, Racine, Wis. Filed Dec. 18, 1967.

GOLDCREST

For Playing Cards (Int. Cl. 16).
First use August 1964.

SN 287,256. Mattel, Inc., Hawthorne, Calif. Filed Dec. 20, 1967.

MAN FROM LASER

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Sept. 28, 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 193,830. The Wapakoneta Machine Company, Wapakoneta, Ohio. Filed May 19, 1964.

MULTICUT

For Machine Knives (Int. Cl. 7).
First use November 1931.

SN 239,406. GPE Controls, Inc., Morton Grove, Ill. Filed Feb. 23, 1966.

DYNAGUIDER

Owner of Reg. No. 775,342.
For Web Guide Roll Assemblies for Use With Elongated Webs of Paper, Metal, Plastic, Rubber, Fabrics, and the Like (Int. Cl. 7).
First use June 9, 1965.

SN 246,353. The Pandjiris Weldment Co., St. Louis, Mo. Filed May 23, 1966.

TANKER

For Turning Rolls for Rotating Workpieces for Welding and Machining (Int. Cl. 7).
First use Nov. 19, 1965.

SN 247,514. Layton Manufacturing Co., Salem, Oreg. Filed June 7, 1966.

LAYTON

For Paving Machines (Int. Cl. 7).
First use October 1960.

SN 247,848. United Shoe Machinery Corporation, Boston, Mass. Filed June 10, 1966.

RESPONSYN

For Motor Drive Power Transmission Units Comprising Units Gear Reducers and Actuators (Int. Cl. 7).
First use Aug. 20, 1964.

SN 250,001. Koppers Company, Inc., Pittsburgh, Pa. Filed July 11, 1966.

HOOPER-SWIFT

Owner of Reg. No. 801,767.
For Machinery for Making Paper Containers, Such as Corrugated and Fiberboard Boxes (Int. Cl. 7).
First use July 22, 1960.

SN 250,495. G. H. Lewis Company, Watertown, Wis. Filed July 18, 1966.

ROTO-SEMBLY

For Motorized Material-Handling Unit Having an Endless and Movable Series of Bins (Int. Cl. 7).
First use June 20, 1966.

SN 250,642. The Concrete Surfacing Machinery Company, Cincinnati, Ohio. Filed July 20, 1966.

BERG STEWART

For Concrete Surfacing Machines, and Accessories Therefor—Namely, Surfacing and Work Heads and Cutter Plates, and Parts Thereof (Int. Cl. 7).
First use December 1963; 1917 as to "Berg."

SN 250,795. Whirl-Jet Mfg. Corp., Webster Groves, Mo. Filed July 21, 1966.

Whirl-Jet

For High Pressure Car Wash Equipment (Int. Cl. 7).
First use July 24, 1965.

SN 252,133. Rheem Manufacturing Company, New York, N.Y. Filed Aug. 10, 1966.

TIPPER-MATIC

Owner of Reg. Nos. 665,973, 817,248, and others.
For Machines for Filling and Applying Closure Fasteners to Containers for Meat and Other Products (Int. Cl. 7).
First use Mar. 18, 1966.

SN 252,155. Anderson Electric Corporation, Leeds, Ala. Filed Aug. 11, 1966.

PACE SETTER

For Packaging Machinery for Packaging Articles in Plastic Film Materials (Int. Cl. 7).
First use Mar. 9, 1966.

SN 252,390. Kabushiki Kaisha Nakajima Seisakusho, Matsue-shi, Shimane-ken, Japan. Filed Aug. 15, 1966.

N

Owner of Japanese Reg. Nos. 483,873 and 483,875, dated July 5, 1956.
For Treadle and Electric Sewing Machines (Int. Cl. 7).

SN 252,893. Manly Dee Randle, Dallas, Tex. Filed Aug. 22, 1966.

PORTA-WASH

For Portable and Semi-Portable Car Washing Machines (Int. Cl. 7).
First use Aug. 2, 1964.

SN 252,974. Union Camp Corporation, New York, N.Y. Filed Aug. 23, 1966.

MARKETEER

For Machine for Packaging Articles in Display Packages Made of Paperboard and Plastic Film (Int. Cl. 7).
First use Mar. 8, 1963.

SN 253,514. Fichtel & Sachs Aktiengesellschaft, Schweinfurt, Germany. Filed Aug. 31, 1966.

SACHS MOTORS

Applicant disclaims the word "Motors" apart from the mark as shown. Owner of German Reg. No. 818,711, dated Apr. 25, 1966.
For Internal Combustion Engines and Parts Thereof (Int. Cl. 7).

SN 253,925. Alco Standard Corporation, Philadelphia, Pa., assignee of Tempo Products Company, Solon, Ohio. Filed Sept. 6, 1966.

TEMPO-TROLL

Owner of Reg. Nos. 621,666, 664,885, and others.
For Electrical Outboard Motors (Int. Cl. 7).
First use Aug. 18, 1966.

SN 254,730. Sparcraft, Inc., Jackson, Mich. Filed Sept. 19, 1966.

SPARCRAFT

For Hand Bilge Pumps (Int. Cl. 7).
First use Apr. 12, 1965.

SN 254,750. Westinghouse Air Brake Company, Chicago, Ill. Filed Sept. 19, 1966.

DURA-ROLL

For Belt Conveyor Rollers and Parts Thereof (Int. Cl. 7).
First use July 19, 1966.

SN 254,826. Walker Manufacturing Company, Racine, Wis. Filed Sept. 20, 1966.

For Exhaust Systems and Parts Thereof Such as Mufflers for Internal Combustion Engines (Int. Cl. 12).
First use Oct. 15, 1955.

SN 255,211. International Telephone and Telegraph Corporation, New York, N.Y. Filed Sept. 27, 1966.

PRIME-LINE

For Pumps for Fluids (Int. Cl. 7).
First use May 27, 1966.

SN 255,506. Aktiebolaget C. J. Wennbergs Mekaniska Verkstad, Karlstad, Sweden. Filed Sept. 30, 1966.

TRANSBLOWER

Owner of Swedish Reg. No. 112,890, dated May 7, 1965.
For Machines for Pneumatical Handling of Comminuted Bulk Materials (Int. Cl. 7).

SN 256,069. Clark Equipment Company, Buchanan, Mich. Filed Oct. 10, 1966.

POWRGLIDER

For Air Film Material Handling Machines (Int. Cl. 7).
First use Sept. 8, 1966.

SN 256,198. Clark Equipment Company, Buchanan, Mich. Filed Oct. 11, 1966.

CLARK EQUIPMENT

Applicant disclaims the word "Equipment" apart from the mark. Owner of Reg. Nos. 165,644, 814,501, and others.
For Drive Axles and Drive-Steer Axles (Int. Cl. 7).
First use at least as early as Jan. 1, 1962.

SN 256,605. Sperry Rand Corporation, New York, N.Y. Filed Oct. 17, 1966.

SELEKTRONIC

Owner of Reg. No. 441,201.
For Electric Dry Shavers and Parts Thereof (Int. Cl. 8).
First use Dec. 13, 1965.

SN 258,003. Textile Machine Works, Reading, Pa. Filed Nov. 4, 1966.

TMW

Owner of Reg. Nos. 372,034 and 588,360.
For Knitting Machines; Knitting Machine Needles and Flat Parts; Yarn Package Winders; Bobbin Winders; Yarn Crimping and Bulking Machines; Packaging Machines—Namely, Case Opening Machines, Case Loading Machines, Case Closing and Sealing Machines, Carton Tube Making Machines, Carton Tube Capping Machines, and Marking and/or Dating Apparatus for Cases; Adhesive Applying Attachments for Case Sealing Machines, and Parts for the Above Identified Machines (Int. Cl. 7).
First use Jan. 31, 1966, on knitting machines.

SN 258,007. Valley Forge Conveyors Incorporated, Norristown, Pa. Filed Nov. 4, 1966.

VALLEY FORGE

For Conveyor Equipment—Namely, Belt Conveyors, Wheel and Roller Conveyors, Portable Conveyors, and Sectional Conveyors (Int. Cl. 7).
First use on or about Dec. 31, 1964.

SN 259,416. Flexible Drive & Tool Co. Ltd., Norfolk, England. Filed Nov. 25, 1966.

BULLFROG

Owner of British Reg. No. 833,967, dated May 1, 1962.
For Submersible Pumps (Int. Cl. 7).

SN 259,856. The Schriber Company, Dayton, Ohio. Filed Dec. 1, 1966.

SCHRIBERFLEX

Owner of Reg. No. 810,601.
For Business Forms Printing and Bindery Equipment—Namely, Continuous Forms Fastener Machines (Int. Cl. 7).
First use Aug. 9, 1966.

SN 260,566. Mosley Machinery Co., Inc., Waco, Tex. Filed Dec. 12, 1966.

MONSTER

For Heavy Duty Scrap Metal Compacting and Shearing Apparatus (Int. Cl. 7).
First use on or about Nov. 18, 1966.

SN 264,091. Oxwall Tool Co., Ltd., Flushing, N.Y. Filed Feb. 6, 1967.

For Tools — Namely, Screwdrivers, Pliers, Hammers, Wrenches, Drills, and Kindred Hand Tools (Int. Cl. 8).
First use about Apr. 1, 1960.

SN 267,534. Messinger Bearings, Inc., Philadelphia, Pa. Filed Mar. 24, 1967.

"X"

For Roller Bearings (Int. Cl. 7).
First use January 1940.

SN 269,792. Rollway Bearing Company, Inc., Liverpool, N.Y. Filed Apr. 21, 1967.

DYNA-ROL

For Roller Bearings (Int. Cl. 7).
First use Jan. 30, 1967.

SN 269,793. Rollway Bearing Company, Inc., Liverpool, N.Y. Filed Apr. 21, 1967.

MAX-ROL

For Roller Bearings (Int. Cl. 7).
First use Mar. 7, 1962.

SN 271,273. Oneida Ltd., Oneida, N.Y. Filed May 11, 1967.

HOMESTEAD

For Stainless Steel Flatware (Int. Cl. 8).
First use May 28, 1965.

SN 271,274. Oneida Ltd., Oneida, N.Y. Filed May 11, 1967.

MAYWOOD

For Stainless Steel Flatware (Int. Cl. 8).
First use Nov. 22, 1965.

SN 271,275. Oneida Ltd., Oneida, N.Y. Filed May 11, 1967.

BRIARWOOD

For Stainless Steel Flatware (Int. Cl. 8).
First use Nov. 22, 1965.

SN 271,276. Oneida Ltd., Oneida, N.Y. Filed May 11, 1967.

MONTINA

For Stainless Steel Flatware (Int. Cl. 8).
First use Oct. 4, 1966.

SN 271,281. Oneida Ltd., Oneida, N.Y. Filed May 11, 1967.

LEXINGTON

For Stainless Steel Flatware (Int. Cl. 8).
First use July 1, 1966.

SN 271,625. The International Silver Company, Meriden, Conn. Filed May 16, 1967.

ROYAL BOUQUET

For Stainless Steel Flatware—Namely, Knives, Forks, and Spoons (Int. Cl. 8).
First use Mar. 21, 1967.

SN 271,687. The Borden Company, New York, N.Y. Filed May 17, 1967.

WHIRLAWN

For Seed and Fertilizer Spreader (Int. Cl. 7).
First use Feb. 20, 1967.

SN 273,071. Industrial Grain Products, Limited, Montreal, Quebec, Canada. Filed June 5, 1967.

MULTIVISC

Priority claimed under Sec. 44(d) on Canadian application filed Dec. 7, 1966; Reg. No. 152,347, dated Aug. 4, 1967.
For Apparatus for Treating Starch (Int. Cl. 7).

SN 274,163. Jewel Box Stores Corporation, Greensboro, N.C. Filed June 19, 1967.

Gibraltar

Owner of Reg. Nos. 703,896 and 741,566.
For Hand Tools—Namely, Drive Sockets, Open End Wrenches, Short Box Wrenches, Ratchets, Speeders, Hinge Handles, Punches and Chisels, Ignition Sets, File Sets, Allen Sets, Ignition Files, Slip Joint Pliers, Adjustable Wrenches, Screw Drivers, and Pliers (Int. Cl. 8).
First use Aug. 3, 1964.

Class 26—Measuring and Scientific Appliances

SN 233,178. Dual Gebruder Steidinger, St. Georgen, Black Forest, Germany, by change of name from Gebruder Steidinger, St. Georgen, Black Forest, Germany. Filed Nov. 23, 1965.

skate-O-meter

Priority claimed under Sec. 44(d) on German application filed Sept. 10, 1965; Reg. No. 827,970, dated Dec. 30, 1966.
For Test Instruments for Detection of Any Deviations of the Stylus From Perfect Balance in the Stereo Groove of a Record (Int. Cl. 9).

SN 242,291. Scientific Industries, Inc., Hempstead, N.Y. Filed Mar. 30, 1966.

CHROMATO-GASOMETER

For Gas Extractor and Ejector for Gas Chromatography (Int. Cl. 9).
First use Jan. 31, 1965.

SN 251,937. Machine-O-Matic, Inc., Evanston, Ill. Filed Aug. 8, 1966.

SASI

For Electronic Equipment for Detecting the Amount of Shrinkage or Elongation Which Takes Place in a Moving Web, and for Regulating the Rate of Movement of the Web Accordingly (Int. Cl. 9).
First use on or about June 8, 1966.

SN 253,280. Clay-Adams, Inc., New York, N.Y. Filed Aug. 29, 1966.

SAHLI A/1

Owner of Reg. No. 635,540.
For Pipettes (Int. Cl. 9).
First use at least as early as Apr. 6, 1966.

SN 253,420. Cambridge Instrument Company Limited, London, England. Filed Aug. 30, 1966.

STEREOSCAN

For Electron Microscopes and Parts and Fittings Therefor (Int. Cl. 9).
First use on or about Mar. 31, 1966; in commerce on or about Mar. 31, 1966.

SN 253,890. Leupold & Stevens Instruments, Inc., Portland, Oreg. Filed Sept. 6, 1966.

MEMOMARK

Owner of Reg. No. 737,516.
For Shaft Encoder Measuring Apparatus Having Mechanical Counter and Electrical Readout Device With Memory (Int. Cl. 9).
First use Sept. 5, 1963.

SN 254,366. Asahi Optical Company, Ltd., Tokyo, Japan. Filed Sept. 13, 1966.

NOCTA

For Cameras and Lenses for Infra-Red Photographic Apparatus (Int. Cl. 9).
First use Mar. 1, 1966; in commerce Sept. 7, 1966.

SN 257,677. Itek Corporation, Lexington, Mass., assignee of Wayne-George Corporation, Newton, Mass. Filed Oct. 31, 1966.

COÖRDICON

For Electromechanical and Electronic Instrumentation—Namely, Apparatus for Continuously Digitizing and Displaying X and Y Coordinates in Combination With a Tracking Reticle Positioned by an Operator on a Table Surface, and Optical Analog to Digital Conversion Equipment (Int. Cl. 9).
First use Oct. 4, 1966.

SN 258,227. Gulton Industries, Inc., d.b.a. West Instrument Corporation, Metuchen, N.J. Filed Nov. 8, 1966.

Gardstart

For Electronic Start-Up Controller Which Is Connectible to Machinery and Which Prevents Starting of Such Machinery Until the Operating Requirements Thereof Are in Order (Int. Cl. 9).
First use June 6, 1966.

SN 258,425. Stromberg-Carlson Corporation, Rochester, N.Y. Filed Nov. 10, 1966.

DIGIMATIC

Owner of Reg. No. 707,190.
For Telephone Equipment—Namely, Calling-Number Identifier for Automatically Determining the Telephone Station From Which a Toll Call Is Being Originated, and Automatic Message Accounting System (Int. Cl. 9).
First use Nov. 4, 1966.

SN 260,050. Hewlett-Packard Company, Palo Alto, Calif. Filed Dec. 5, 1966.

The drawing is lined for the color blue, however, color is not claimed as an essential feature of the mark. Owner of Reg. Nos. 540,523, 572,827, and others.
For Systems, Instruments, and Apparatus Used for Analysis, Synthesis, Counting, Measuring, Data Acquisition and Processing, Detection, Inspection, Testing, Display, Recording, or Standards Purposes (for Example, Gas Chromatographs, CHN Analyzers, Osometers, Auto-Viscometers, Microwave Spectrometers, Waveform Distortion Analyzers, Spectrum Analyzers, Frequency Synthesizers, Counters, Ammeters, Ohmmeters, Impedance Meters, Voltmeters, Power Meters, Frequency Meters, SWR Meters, Ratio Meters, Microwave Noise Figure Meters, Frequency Measurement Instrumentation, Nuclear Measurement Instrumentation, Quartz Thermometers, Data Acquisition and Handling Systems, Calculators, Computers and Data Processing Systems, Ultrasonic Translator Detectors, Test Equipment for Locating Faults in Power or Telephone Cables, Signal Sources, Mixers, Modulators, Attenuators, Coaxial and Waveguide Instrumentation, Oscilloscopes, Plotters and Recorders, and Frequency and Time Standards) and Accessories (for Example, Column Materials and Backflush Valves for Use With Chromatographic Columns, Cameras for Use With Oscilloscopes, and Carts for Mobilizing Test Equipment) Used With These Systems, Instruments, and Apparatus (Int. Cl. 9).
First use Mar. 26, 1965.

SN 260,402. Bio-Science Laboratories, Van Nuys, Calif. Filed Dec. 9, 1966.

TLI

For Laboratory Equipment—Namely, Heating Blocks, Stirrers, Mixers, Photometric Analyzers, Chromatography Spotters, Dialysis Cells, and Rotators (Int. Cl. 9).
First use Oct. 16, 1962.

SN 260,781. The Standard Oil Company, Cleveland, Ohio. Filed Dec. 14, 1966.

VISTRON

For Sense Connectors for Use in IBM Computers (Int. Cl. 9).
First use Nov. 15, 1966.

SN 261,438. API Instruments Company, Chesterland, Ohio. Filed Dec. 27, 1966.

LINE SENTRY

Owner of Reg. No. 668,020.
For Frequency and Voltage Responsive Alarm and Control Instruments (Int. Cl. 9).
First use May 31, 1966.

SN 262,403. Data Pathing Incorporated, Sunnyvale, Calif. Filed Jan. 12, 1967.

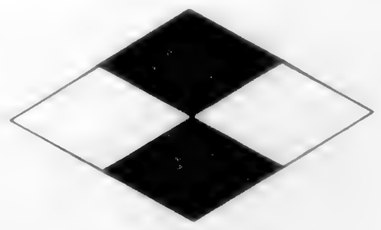
For Computerized Data Collection Systems and Parts Therefor (Int. Cl. 9).
First use Nov. 25, 1966.

SN 262,501. PM & E Electronics, Inc., East Providence, R.I. Filed Jan. 13, 1967.

avidesk

For Self-Instruction Multi-Media Desk With Built in Capacity To Accept Locally Prepared Tapes and Slides (Int. Cl. 9).
First use Oct. 20, 1966.

SN 264,290. Electric Thermometers, Inc., Kearny, N.J. Filed Feb. 9, 1967.



For Electrical Thermometer Apparatus—Namely, Connection Heads for Thermocouples and Resistance Thermometers, Resistance Thermometer Elements, Resistance Thermometer Insets, Resistance Thermometer Sensor Assemblies, Thermocouple Wire, Thermocouples and Assemblies, Thermocouple Extension Lead Wire, and Thermocouple Protection Tubes (Int. Cl. 9).
First use Jan. 4, 1967, on resistance thermometer elements.

SN 265,684. American Chain & Cable Company, Inc., New York, N.Y. Filed Mar. 1, 1967.

HELICOID

Owner of Reg. No. 703,927.
For Liquid and Gas Pressure Gages and Parts Therefor (Int. Cl. 9).
First use Feb. 1, 1967.

SN 266,059. Mettler Instrument Corporation, Hightstown, N.J. Filed Mar. 6, 1967.

Mettler

Owner of Reg. No. 719,974.
For Recording Thermoanalyzer for Thermogravimetric Analysis, Differential Thermal Analysis and Other Thermal-analytical Processes, and Laboratory Instruments for Measuring Changes in the Physical Characteristics of Materials With Change of Temperature (Int. Cl. 9).
First use February 1966.

SN 267,028. Friden, Inc., San Leandro, Calif. Filed Mar. 17, 1967.

CONVERSATIONAL TERMINAL

For Keyboard Printer Communications Sender and Receiver for Time-Sharing Computer Systems (Int. Cl. 9).
First use November 1966.

SN 268,432. Santa Rita Technology, Inc., Menlo Park, Calif. Filed Apr. 5, 1967.

SRT

For Sound Analyzing Systems and Parts—Namely, Drivers, Amplifiers, and Commutators (Int. Cl. 9).
First use July 23, 1964.

SN 270,395. Kürbi & Niggeloh, Radevormwald, Germany. Filed May 1, 1967.

MOTORAMA

For Electrically and Mechanically Driven Panning Mechanisms for Motion Picture Camera (Int. Cl. 9).
First use Jan. 30, 1967; in commerce Jan. 30, 1967.

SN 270,427. Spectral Dynamics Corporation, San Diego, Calif. Filed May 1, 1967.

SIGNATURE RATIO

For Electronic Vibration Analysis Equipment for Analyzing Rotating Machinery (Int. Cl. 9).
First use May 13, 1966.

SN 274,006. Triplett Electrical Instrument Company, Bluffton, Ohio. Filed June 15, 1967.

TVO

For Battery Operated, Solid State Volt-Ohmmeters and Parts Thereof (Int. Cl. 9).
First use Mar. 3, 1967.

SN 275,783. The Rank Organisation Limited, London, England. Filed July 11, 1967.

MITRONIC

For Engineers' Measuring Instruments—Namely, Linear Comparators (Int. Cl. 9).
First use Nov. 1, 1963; in commerce Oct. 4, 1964.

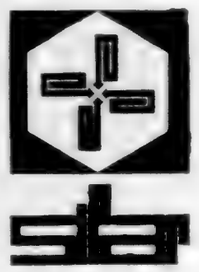
SN 281,946. Raytheon Company, Lexington, Mass. Filed Oct. 6, 1967.

NANOLOK

For Memory Elements for Electronic Information Storage Devices (Int. Cl. 9).
First use November 1965.

Class 27 — Horological Instruments

SN 244,036. Sifar S.A., Neuchatel, Switzerland. Filed Apr. 21, 1966.



Priority claimed under Sec. 44(d) on Swiss Reg. No. 214,364, dated Oct. 21, 1965.
For Watches, Clocks, Chronometers, and Parts Thereof (Int. Cl. 14).

SN 255,550. Societe Anonyme des Etablissments Léon Hatot, Paris, France. Filed Sept. 30, 1966.

ZETA

Owner of French Reg. No. 708,104, dated May 13, 1966.
For Watches and Clocks (Int. Cl. 14).

SN 277,681. Manufacture des Montres Universal Perret Freres S.A., Geneva, Switzerland. Filed Aug. 7, 1967.

UNISONIC

Owner of Reg. No. 842,060
For Watches and Parts Thereof (Int. Cl. 14).
First use June 7, 1967; in commerce June 7, 1967.

Class 28 — Jewelry and Precious-Metal Ware

SN 271,011. Buccellati Silver, Ltd., New York, N.Y. Filed May 9, 1967.

PARMA

For Sterling Silver Flatware (Int. Cl. 8).
First use Mar. 11, 1967.

Class 29 — Brooms, Brushes, and Dusters

SN 272,405. Pro-Stim Products, Inc., Akron, Ohio. Filed May 25, 1967.

PRECISION HI-LO

For Toothbrushes (Int. Cl. 21).
First use July 27, 1956.

Class 30 — Crockery, Earthenware, and Porcelain

SN 253,717. Arlen China Company, New York, N.Y. Filed Sept. 2, 1966.

No claim is made to the words "China," "Fine-China," and "Japan" apart from the mark. Owner of Reg. No. 662,050.
For China Dinnerware (Int. Cl. 21).
First use Aug. 9, 1966.

Class 32 — Furniture and Upholstery

SN 265,350. Steelcase, Inc., Grand Rapids, Mich. Filed Feb. 23, 1967.

BROADSIDES

For Filing Cabinets (Int. Cl. 20).
First use Sept. 10, 1966.

SN 272,112. Stow/Davis Furniture Company, Grand Rapids, Mich. Filed May 22, 1967.

SD

For Furniture—Namely, Desks, Chairs, Settees, Sofas, Tables, Credenzas, Cabinets, and Bookcases (Int. Cl. 20).
First use in or about 1917.

SN 276,848. Metal Box & Cabinet Corporation, Chicago, Ill. Filed July 26, 1967.

MBCentury

For Mechanics' Tool Chests, Cabinets, and Trays Therefor (Int. Cl. 20).
First use Apr. 28, 1967.

SN 277,307. Southern Cross Industries, Inc., Atlanta, Ga. Filed Aug. 1, 1967.

NIGHT WATCH

For Mattresses (Int. Cl. 20).
First use July 15, 1967.

SN 278,425. Sears, Roebuck and Co., Chicago, Ill. Filed Aug. 16, 1967.

COUNTRY IV

For Dining Room Tables, Buffets, China Cabinets, Serving Tables, Sofas, End Tables, Lamp Tables, Cocktail Tables, Credenzas, Desks, Chairs, Cabinets, Beds, Mirrors, Dressers, Chests, and Night Stands (Int. Cl. 20).
First use on or about June 16, 1966.

Class 33 — Glassware

SN 257,264. Federal Paper Board Company, Inc., Columbus, Ohio. Filed Oct. 26, 1966.

Applicant disclaims the words "Sheer Rim" apart from the mark as shown.
For Glass Tumblers (Int. Cl. 21).
First use Sept. 26, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 254,998. H. Frost & Company Limited, Walsall, England. Filed Sept. 23, 1966.

VISTARAMA

Owner of British Reg. No. 883,426, dated Aug. 24, 1965.
For Heating Apparatus for Radiant and Convected Heat, Especially for Installation in a Wall and Background Heating (Int. Cl. 11).

SN 256,302. Navan Incorporated, El Segundo, Calif. Filed Oct. 12, 1966.

ORBIT ARC

Applicant disclaims the term "Arc" separate and apart from the mark as shown.
For Automatic Arc-Welding Apparatus and Parts Thereof (Int. Cl. 9).
First use July 23, 1964.

SN 256,303. Navan Incorporated, El Segundo, Calif. Filed Oct. 12, 1966.

Applicant disclaims the term "Arc" separate and apart from the mark as shown.
For Automatic Arc-Welding Apparatus and Parts Thereof (Int. Cl. 9).
First use Mar. 23, 1965.

SN 261,411. Titan Sales Corporation, Kansas City, Mo. Filed Dec. 23, 1966.

TITAN

For Portable Electric Space Heaters (Int. Cl. 11).
First use in or about 1946.

SN 279,706. Sola Basic Industries, Inc., Milwaukee, Wis. Filed Sept. 6, 1967.

COMPACT

For Crucible or Pot-Type Furnaces for Casting of Metals (Int. Cl. 11).
First use Sept. 19, 1961.

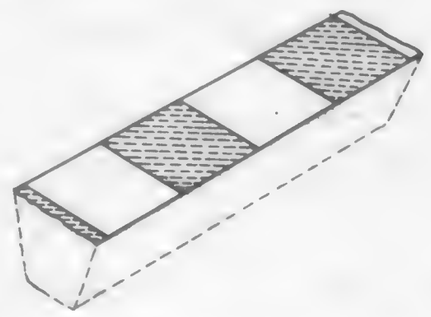
Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 237,353. Istag AG, Suhr, Aargau, Switzerland. Filed Jan. 26, 1966.

KLINGERFLEX

Owner of U.S. Reg. Nos. 747,296, 781,402, and others.
For Gaskets in the Form of Sheets, Rings, and Shaped Parts, Packings and Other Stuffing Materials for Engineering Purposes (Int. Cl. 17).
First use July 10, 1965; in commerce July 10, 1965.

SN 248,441. Dayco Corporation, Dayton, Ohio. Filed June 20, 1966.



The mark consists of a series of silver or white stripes extending transversely along the outer surface only of the belt, said stripes having a width approximately equal to the width of the belt and alternating with similarly proportioned stripes of the background color of the belt. The silver or white stripes are lined for silver on the drawing.
For Power Transmission Belts (Int. Cl. 7).
First use on or about May 2, 1966.

SN 253,370. United States Rubber Company, New York, N.Y. Filed Aug. 29, 1966.

FLEETMASTER TRIPLE TREAD

Applicant disclaims the term "Triple Tread" apart from the mark as shown, but does not waive its common law rights. Owner of Reg. Nos. 599,687 and 745,475.
For Pneumatic Tires (Int. Cl. 12).
First use June 2, 1966.

SN 258,361. Coors Porcelain Company, Golden, Colo. Filed Nov. 10, 1966.

For Vehicle Tire Studs (Int. Cl. 12).
First use Sept. 13, 1966.

SN 267,380. Garlock Inc., Palmyra, N.Y. Filed Mar. 23, 1967.

GARFITE

For Machinery Packing, Made Wholly or in Part From Fibrous Material (Int. Cl. 17).
First use Oct. 25, 1965.

SN 267,639. Maremont Corporation, Chicago, Ill. Filed Mar. 27, 1967.

SS
SEVERE SERVICE

Applicant disclaims the words "Severe Service" apart from the mark as shown, subject to the applicant's reservation of rights thereto.
For Metallic Brake Blocks for Vehicles (Int. Cl. 12).
First use at least as early as Dec. 9, 1966.

Class 36 — Musical Instruments and Supplies

SN 255,344. Paisano Productions, Los Angeles, Calif. Filed Sept. 28, 1966.

LISTENER'S DIGEST

For Tape Recorder Cartridges (Int. Cl. 9).
First use July 29, 1966.

SN 259,082. Mario Jacob Bobadilla, d.b.a. Bob Mario, North Hollywood, Calif. Filed Nov. 21, 1966.

c/c

For Musical Instrument Mouthpieces for Clarinets and Saxophones (Int. Cl. 15).
First use Mar. 15, 1961.

SN 261,381. Maurice Lipsky Music Co., Inc., New York, N.Y. Filed Dec. 23, 1966.

CALIFORNIAN

For Musical Instruments—Namely, Guitars, Saxophones, Clarinets, Trumpets, Trombones, Mandolins, Ukuleles, Banjos, Drums, Accordions, and Accessories Thereto (Int. Cl. 15).
First use on or about July 1, 1964.

SN 282,631. Sounds Unlimited Recording Company, Inc., Lubbock, Tex. Filed Oct. 16, 1967.

DUST BOWL
RECORDS

Applicant disclaims the word "Records" apart from the mark as shown.
For Phonograph Records (Int. Cl. 9).
First use Aug. 28, 1967.

Class 37 — Paper and Stationery

SN 257,449. The American Paper Products Company, Youngstown, Ohio. Filed Oct. 28, 1966.

APPCO

The drawing is lined for the colors red and blue.
For Packaging Materials—Namely, Envelopes (Int. Cl. 16).
First use Oct. 7, 1966.

SN 260,392. American Hospital Supply Corporation, Evanston, Ill. Filed Dec. 9, 1966.

TOMAC

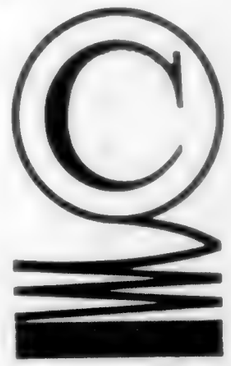
Owner of Reg. Nos. 326,450, 732,775, and 836,601.
For Paper Products—Namely, Valuables Envelopes, Bath Mats, Kerchief Tissues, Birth Certificate Forms, Medicine Cards, and Examination Table Paper (Int. Cl. 16).
First use on or before July 1, 1966.

SN 270,004. Professional Tape Co., Inc., Riverside, Ill. Filed Apr. 25, 1967.

HI-TEMP

For Self-Sticking Identifying Tape and Self-Sticking Sterilization-Indicating Tape (Int. Cl. 16).
First use in or about December 1958.

SN 278,179. Churchill Business Forms Company, Newtown, Conn. Filed June 6, 1967.



For Continuous Data Processing Forms (Int. Cl. 16).
First use Dec. 15, 1966.

SN 273,221. Zip-Mark Corporation, Bordentown, N.J. Filed June 6, 1967.

ZIPAMATIC

For Ball Pens, and Felt-Tipped Markers (Int. Cl. 16).
First use Feb. 7, 1967.

SN 273,424. Silver Bear, Inc., Atlanta, Ga. Filed June 8, 1967.

NUTSHELL

For Bound Composition Books (Int. Cl. 16).
First use May 28, 1967.

SN 273,625. Engravers Paper Company, Louisville, Ky. Filed June 12, 1967.

MARENGO

For Bond Paper and Envelopes (Int. Cl. 16).
First use 1925.

Class 38 — Prints and Publications

SN 254,891. Riley Electric Log, Inc., Oklahoma City, Okla. Filed Sept. 21, 1966.

Riley's

For Reprinted Well Logs (Int. Cl. 16).
First use on or about Nov. 20, 1945.

SN 255,228. Professional Communications, Inc., Chicago, Ill. Filed Sept. 27, 1966.

pm

For Periodical Publication—Namely a Magazine (Int. Cl. 16).
First use Sept. 1, 1966.

SN 256,092. Harper & Row, Publishers, Incorporated, New York, N.Y. Filed Oct. 10, 1966.

Owner of Reg. Nos. 638,798, 642,660, and 709,368.
For Books, Literary Magazines, Library and School Periodical Bulletins, Catalogs, Bookstore Notices, Book Review Summaries, Newsletters, and Posters (Int. Cl. 16).
First use about 1817.

SN 259,495. Whale's Tale, Inc., Cleveland, Ohio. Filed Nov. 25, 1966.

WHALE'S TALE

For Pamphlet Published Periodically Describing Merchandise for Sale (Int. Cl. 16).
First use Oct. 22, 1966.

SN 260,533. James Dines & Co., Inc., New York, N.Y. Filed Dec. 12, 1966.

For Investment Advice Letter (Int. Cl. 16).
First use Oct. 19, 1962.

SN 260,783. The Stevens-Davis Company, Chicago, Ill. Filed Dec. 14, 1966.

STEVE DAVIS

The name "Steve Davis" is fictional.
For Executive Newsletter (Int. Cl. 16).
First use Dec. 6, 1966.

SN 260,855. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Dec. 15, 1966.

NIBBLES

For Engagement Calendars (Int. Cl. 16).
First use June 1, 1966.

SN 261,111. The Stevens-Davis Company, Chicago, Ill. Filed Dec. 19, 1966.

people
ARE IMPORTANT!

For Booklets and Posters, Issued From Time to Time, for Improving Employer-Employee Relations (Int. Cl. 16).
First use on or about Oct. 5, 1961.

SN 261,112. The Stevens-Davis Company, Chicago, Ill. Filed Dec. 19, 1966.

SD

For Newsletters Devoted to Sales Training, Sales Management, and to Improving Employer-Employee Relations (Int. Cl. 16).
First use at least as early as May 1961.

SN 264,613. Terra Chemicals International, Inc., Sioux City, Iowa. Filed Feb. 13, 1967.

Prescription for
Extra
Profit

For Booklet Relating to Agricultural Matters, Published From Time to Time (Int. Cl. 16).
First use during December 1966.

SN 265,018. Ulf Hansell, St. Paul, Minn. Filed Feb. 20, 1967.

PSP

For Booklets Containing Punch-Out Parking Cards (Int. Cl. 16).
First use Nov. 16, 1966.

SN 265,133. Zip Code Publishing Company, Inc., Milwaukee, Wis. Filed Feb. 20, 1967.

MEMO MAID

For Home and Office Reference Book, Which Supplies Information in Regard to Zip Codes, Postal Rates, Time Zones, and Similar Information; and, in Addition, Provides a Form for an Address Book and Greeting Card Check List (Int. Cl. 16).
First use Mar. 17, 1966.

Class 39 — Clothing

SN 231,478. J. C. Penney Company, New York, N.Y. Filed Oct. 23, 1965.

Jim
WELLS

The name "Jim Wells" is fictitious. Owner of Reg. Nos. 829,127, 829,801, and 840,522.
For Boys' Hosiery, Underwear, Jeans, Overalls, Shoes, and Headwear (Int. Cl. 25).
First use May 19, 1964, on jeans.

SN 235,504. Gamble-Skogmo, Inc., Minneapolis, Minn. Filed Dec. 29, 1965.

Beauti-Knit

The word "Knit" is disclaimed apart from the mark as shown.
For Women's Hosiery (Int. Cl. 25).
First use April 1965.

SN 256,832. Elder Manufacturing Company, St. Louis, Mo. Filed Oct. 20, 1966.

T.S.
Britches

The word "Britches" is disclaimed apart from the mark as shown.
For Men's and Boys' Slacks (Int. Cl. 25).
First use Oct. 11, 1966.

SN 261,220. The Kendall Company, Walpole, Mass. Filed Dec. 21, 1966.

Without waiving its common-law rights and for purposes of this registration only, applicant makes no claim herein to the pictorial representation of a pair of stockings.
For Hosiery (Int. Cl. 25).
First use Sept. 21, 1966.

SN 261,297. Misty Harbor, Ltd., New York, N.Y. Filed Dec. 22, 1966.

WHEN THE 'INS' GO OUT

For Raincoats (Int. Cl. 25).
First use on or about Sept. 27, 1966.

SN 264,209. Sarah Haig, Bronx, N.Y. Filed Feb. 8, 1967.

HAIG "LEERS"

For Heel Socks and Combination Foot Wear and Heel Socks (Int. Cl. 25).
First use Jan. 10, 1967.

SN 264,411. Hardy Amies Limited, London, England. Filed Feb. 10, 1967.

HARDY AMIES

"Hardy Amies" is the name of a living individual whose consent is of record. Owner of British Reg. Nos. B872,615, dated Dec. 20, 1964 and 884,360, dated Sept. 16, 1965.
For Suits; Dresses; Topcoats, Overcoats, Car Coats, Raincoats, Jackets; Blouses, Shirts, Vests; Capes; Boleros; Trousers, Slacks, Skirts, Pants; Dressing Gowns, Housecoats; Jumpers, Cardigans; Skirts; Stockings; Foundation Garments; Neckwear—Namely, Scarves, Stoles, Ties, Jabots; Gloves; Knitwear—Namely, Sweaters, Pullovers, Casual Jackets, Socks; Headwear; Sleepwear; Footwear; and Underwear, All of the Above Goods Are Intended for the Use of Adults and Children of Both Sexes (Int. Cl. 25).

SN 264,412. Hardy Amies Limited, London, England. Filed Feb. 10, 1967.

Hardy Amies

"Hardy Amies" is a living individual whose consent is of record. Owner of British Reg. No. 871,995, dated Nov. 18, 1964.
For Suits; Dresses; Topcoats, Overcoats, Car Coats, Raincoats, Jackets; Blouses, Shirts, Vests; Capes; Boleros; Trousers, Slacks, Skirts, Pants; Dressing Gowns, Housecoats; Jumpers, Cardigans; Skirts; Stockings; Foundation Garments; Neckwear—Namely, Scarves, Stoles, Ties, Jabots; Gloves; Knitwear—Namely, Sweaters, Pullovers, Casual Jackets, Socks; Headwear; Sleepwear; Footwear; and Underwear, All of the Above Goods Are Intended for the Use of Adults and Children of Both Sexes (Int. Cl. 25).

SN 265,647. Naturana-Miederfabriken Carl Dolker KG., Gomaringen Uber Reutlingen, Germany. Filed Feb. 28, 1967.

NATURANA

Owner of German Reg. No. 444,970, dated Mar. 19, 1932.
For Hosiery, Underwear, Foundation Garments, Suspenders, Brassieres, and Bathing Suits (Int. Cl. 25).

SN 265,719. Jackie Stuart, Inc., New York, N.Y. Filed Mar. 1, 1967.

PENGUIN FASHIONS

Applicant disclaims the word "Fashions" apart from the mark as shown.
For Women's Clothing—Namely, Raincoats, Rainsuits, Rainhats, and Other Items Commonly Termed Rainwear (Int. Cl. 25).
First use January 1967.

SN 266,343. Mamiye Brothers Inc., New York, N.Y. Filed Mar. 9, 1967.

SEA WIND

For Shirts, Pants, Jackets, and Shorts (Int. Cl. 25).
First use Jan. 10, 1966.

SN 266,993. Arkwright Incorporated, New York, N.Y. Filed Mar. 17, 1967.

LADY WINSLOW

Owner of Reg. No. 580,269.
For Women's and Misses' Wearing Apparel—Namely, Dresses (Int. Cl. 25).
First use Jan. 3, 1967.

SN 267,018. Crown Handkerchiefs, Inc., New York, N.Y. Filed Mar. 17, 1967.

For Handkerchiefs and Ties (Int. Cl. 25).
First use March 1964.

SN 267,657. Mary Epps Perkins, d.b.a. Saltys Caps & Apparel, Fort Worth, Tex. Filed Mar. 27, 1967.

SALTYS

For Infants' Caps, Jackets, Sweaters, and Sleepwear (Int. Cl. 25).
First use August 1963.

SN 269,080. Knapp Brothers Shoe Manufacturing Corporation, Brockton, Mass. Filed S.R. Apr. 13, 1967; Am. P.R. Dec. 19, 1967.

The words "Cradle Insole" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 582,932 and 785,262.
For Insole for Shoes (Int. Cl. 25).
First use Dec. 1, 1965.

SN 269,120. Spartans Industries, Inc., New York, N.Y. Filed Apr. 13, 1967.

THE
HOPPY SHOP

Applicant disclaims the word "Shop" apart from the mark as shown.
For Women's Sportswear—Namely, Dresses, Slacks, Shirts, Blouses, and Jackets (Int. Cl. 25).
First use Sept. 1, 1965.

SN 269,159. Armored Hosiery Corp., New York, N.Y. Filed Apr. 14, 1967.

No claim is made to the representation of the map of the United States apart from the mark as shown.
For Hosiery (Int. Cl. 25).
First use Mar. 16, 1963.

SN 269,224. Sportwear Hosiery Mills, Inc., Etowah, Tenn. Filed Apr. 14, 1967.

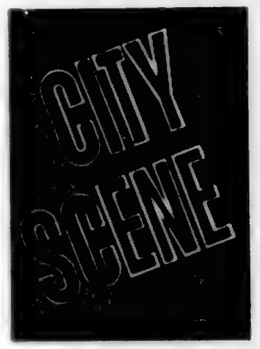
IT KNIT

The word "Knit" is disclaimed apart from the mark as shown.
For Hosiery (Int. Cl. 25).
First use Apr. 3, 1967.

SN 269,898. Interco Incorporated, St. Louis, Mo. Filed Apr. 24, 1967.

The word "Shoes" is disclaimed apart from the mark as shown. Owner of Reg. No. 64,222.
For Leather Shoes (Int. Cl. 25).
First use at least as early as 1915; Sept. 1, 1906, as to "Red Goose."

SN 270,269. Pollak Bros. Inc., Fort Wayne, Ind. Filed Apr. 28, 1967.



For Ladies' Dresses (Int. Cl. 25).
First use Mar. 28, 1967.

SN 271,899. Almcee Wholesale Corporation, New York, N.Y. Filed May 19, 1967.

COUNTRY CORLISS

Owner of Reg. No. 662,869.
For Women's and Misses' Dresses (Int. Cl. 25).
First use Feb. 8, 1967.

SN 272,041. Foont-Freedenfeld Corp., d.b.a. Blair House Fashions, N.Y. Filed May 22, 1967.

BLAIR HOUSE

For Ladies' Coats and Suits (Int. Cl. 25).
First use on or about Apr. 22, 1960.

SN 275,376. M. Hyman & Son Inc., Chicago, Ill. Filed July 5, 1967.

Di Ciano

For Suits, Sport Coats, Topcoats, Overcoats, and Trousers (Int. Cl. 25).
First use 1945.

SN 282,314. Blue Bell, Inc., Greensboro, N.C. Filed Oct. 12, 1967.

BLUE BELL

Owner of Reg. Nos. 429,760, 835,993, and others.
For Boots (Int. Cl. 25).
First use Sept. 25, 1967.

SN 282,316. Blue Bell, Inc., Greensboro, N.C. Filed Oct. 12, 1967.

CORRAL

Owner of Reg. Nos. 555,446 and 585,797.
For Boots (Int. Cl. 25).
First use Oct. 4, 1967.

SN 284,275. Howman-Winter, Inc., Lake Forest, Ill. Filed Nov. 7, 1967.

DECK SAV'RS

For Sole and Heel Protector To Be Attached to Shoes (Int. Cl. 25).
First use May 15, 1967.

SN 284,875. Kelton Hats, New York, N.Y. Filed Nov. 15, 1967.

Charo
ORIGINAL

The word "Original" is disclaimed apart from the mark as shown.
For Ladies' Hats (Int. Cl. 25).
First use Nov. 8, 1967.

SN 287,486. Melville Shoe Corporation, New York, N.Y. Filed Dec. 26, 1967.

THE WAY IN

For Women's and Misses' Shoes (Int. Cl. 25).
First use Dec. 12, 1967.

SN 287,488. Melville Shoe Corporation, New York, N.Y. Filed Dec. 26, 1967.

THE CHARLIE BOOT

Without waiving common-law rights, applicant claims no registration rights in the word "Boot" apart from the mark as shown.
For Women's and Misses' Shoes (Int. Cl. 25).
First use Dec. 12, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 264,323. Italhair, Inc., New York, N.Y. Filed Feb. 9, 1967.

ITALHAIR

For Hair Pieces and Wigs (Int. Cl. 26).
First use early part of August 1966.

SN 271,361. Fulton & Ketchum, Pittsburgh, Pa. Filed May 12, 1967.

SOPHISTI-KITS

For Needlepoint Kits (Int. Cl. 26).
First use June 16, 1966.

SN 271,638. Piv-It Products Inc., San Jose, Calif. Filed May 16, 1967.

PIV-IT

For Hair Rollers (Int. Cl. 26).
First use Oct. 11, 1966.

SN 271,876. Yardley of London, Inc., Totowa, N.J. Filed May 18, 1967.

LACEYS

For Eyelashes (Int. Cl. 26).
First use May 11, 1967.

SN 271,879. Yardley of London, Inc., Totowa, N.J. Filed May 18, 1967.

SINCERES

For Eyelashes (Int. Cl. 26).
First use May 11, 1967.

SN 272,035. Fred Eskenasy, d.b.a. Rubeda Imports, Ltd., San Jose, Calif. Filed May 22, 1967.

RUBEDA

For Artificial Eye Lashes (Int. Cl. 26).
First use Jan. 1, 1967.

SN 273,064. Gloria Wig Co. Inc., Long Island City, N.Y. Filed June 5, 1967.

GLOREL

For Wigs, Wiglets, and Hair Pieces (Int. Cl. 26).
First use Apr. 28, 1967.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 274,415. Crompton Company, New York, N.Y. Filed June 21, 1967.

GLO-VEL

For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers, and Blends Thereof (Int. Cl. 24).
First use May 12, 1967.

SN 275,693. Sanford Finishing Corporation, Sanford, N.C. Filed July 10, 1967.

Fashion-therm

For Textile Fabrics Having a Foam Backing for Use in Making Draperies and the Like (Int. Cl. 24).
First use on or about May 30, 1967.

Class 43 — Thread and Yarn

SN 262,791. Illinois Yarn Company, Rochelle, Ill. Filed Jan. 18, 1967.

rāv-on

For Synthetic Hand-Knitting Yarn (Int. Cl. 23).
First use Dec. 26, 1966.

Class 44 — Dental, Medical, and Surgical Appliances

SN 259,241. Globe Safety Products, Inc., Dayton, Ohio. Filed Nov. 22, 1966.

RESUSIVENTOR

For Portable Breathing Apparatus Such as Resuscitators, Ventilators, and Inhalators (Int. Cl. 10).
First use on or about Nov. 8, 1965.

SN 261,492. A. J. Hosmer Corp., Campbell, Calif. Filed Dec. 27, 1966.

Applicant disclaims the micrometer and test tube representations apart from the mark as shown.
For Prosthetic Devices—Namely, Component Parts in Artificial Arms and Legs (Int. Cl. 10).
First use 1954.

SN 271,849. The Songrand Corporation, Kansas City, Mo. Filed May 18, 1967.

ROLLAXER

For Vibrating Massagers (Int. Cl. 10).
First use on or about May 5, 1967.

SN 273,271. J. H. Emerson Company, Cambridge, Mass. Filed June 7, 1967.

BIRTHEEZ

Owner of Reg. No. 791,589.
For Apparatus for Providing Negative Pressure Over the Abdomen of Pregnant Women Used in Obstetrics (Int. Cl. 10).
First use Jan. 13, 1961.

SN 275,450. Robert J. McIvor, d.b.a. Robert and Williams Company, Oakland, Calif. Filed July 6, 1967.

McIVOR

For Surgical Device—Namely, a Mouth Gag (Int. Cl. 10).
First use Jan. 2, 1948.

SN 282,752. Parke, Davis & Company, Detroit, Mich. Filed Oct. 18, 1967.

PARWIPES

For Cellulose Tissues for Medical Use (Int. Cl. 5).
First use on or before Oct. 6, 1967.

SN 282,952. Boulevard Electronics, Inc., Chicago, Ill. Filed Oct. 20, 1967.

HOMESPA

For Portable Electric Steam Sauna Bath Appliance (Operates on Both Steam and Dry Heat Principles) (Int. Cl. 11).
First use July 21, 1967.

SN 283,752. Major-Prodotti Dentari-Societa in Nome Collettivo di Renaldo Giovanni & Figli, Turin, Italy. Filed Oct. 31, 1967.

DYMON-HUE

Priority claimed under Sec. 44(d) on Italian application filed June 30, 1967; Reg. No. 213,646, dated Aug. 4, 1967.
For Artificial Teeth (Int. Cl. 10).
First use Sept. 21, 1967; in commerce Sept. 21, 1967.

SN 287,856. Joseph M. Magrath, d.b.a. The Great Plains Co., McCook, Nebr. Filed Jan. 2, 1968.

VETASPIRATOR

For Aspiration-Respiration Apparatus for Animals (Int. Cl. 10).
First use in or about November 1966.

Class 45 — Soft Drinks and Carbonated Waters

SN 247,752. Santiago Daurella de Rull, Barcelona, Spain. Filed June 7, 1966.

SANDARU

Owner of Spanish Reg. No. 319,778, dated July 29, 1957.
For Carbonated Soft Drinks and Fruit Drinks Containing Water (Int. Cl. 32).

SN 256,962. Omar Bakeries, Inc., Columbus, Ohio. Filed Oct. 21, 1966.

OMAR

For Soft Drink Beverages, Carbonated and Non-Carbonated (Int. Cl. 32).
First use May 12, 1966.

SN 261,330. The Southland Corporation, Dallas, Tex. Filed Dec. 22, 1966.

STICKY-ICKY

For Fruit Flavored, Semi-Frozen Soft Drinks (Int. Cl. 32).
First use at least as early as Dec. 16, 1966.

Class 46 — Foods and Ingredients of Foods

SN 221,297. The Quaker Oats Company, Chicago, Ill. Filed June 16, 1965.

QUAKER

Monster Munch

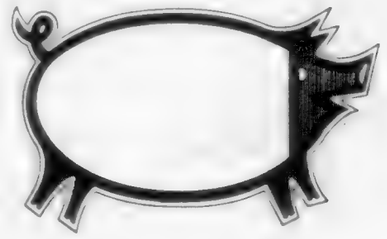
Without waiver of any common law rights in any feature of its mark, applicant disclaims exclusive right to use of the word "Munch" apart from the mark as shown. Owner of Reg. Nos. 26,252, 768,464, and others.
For Breakfast Cereal (Int. Cl. 30).
First use May 27, 1965; at least as early as 1867 as to "Quaker."

SN 241,431. Clarnico Limited, London, England. Filed Mar. 21, 1966.

CLARNICO

Owner of British Reg. No. 884,347, dated Sept. 16, 1965; and U.S. Reg. No. 549,414.
For Eating Chocolate, Chocolates, Candy, and Other Confectionery—Namely, Preserved and Crystallized Fruits and Biscuits (Int. Cl. 30).

SN 250,161. Kern Valley Packing Co., Bakersfield, Calif. Filed July 13, 1966.



The drawing is lined for the color red.
For Sliced Bacon (Int. Cl. 29).
First use May 16, 1957.

SN 251,267. Annie Laurie Confectioners, Inc., d.b.a. Annie Laurie Confections, Fresno, Calif. Filed July 29, 1966.

ANNIE LAURIE

The name "Annie Laurie" is fanciful and is not the name of any particular living individual.
For Ice Cream (Int. Cl. 29).
First use Dec. 5, 1956.

SN 256,726. The Denticator Company, Inc., San Francisco, Calif. Filed Oct. 19, 1966.

DENTICATOR

For Sugarless Candy (Int. Cl. 30).
First use Mar. 10, 1966.

SN 258,369. Excelsior Food Products, Inc., Rye, N.Y. Filed Nov. 10, 1966.

EXCELSIOR

Owner of Reg. No. 634,649.
For Beefsteaks, Beef Burgers, Beef Minute Steaks, Sliced Beef, Roast Beef, Beefsteak Dinners, Beef Stew, Veal Cutlets, Veal Steaks, Turkey, and Pastrami, Both Frozen and Fresh (Int. Cl. 29).
First use Sept. 1, 1955.

SN 260,578. The Pillsbury Company, Minneapolis, Minn. Filed Dec. 12, 1966.

For Refrigerated Dough Products—Namely, Dough for Making Brownies, Cookies, and Fruit Turnovers (Int. Cl. 30).
First use at least as early as Mar. 28, 1966.

SN 261,373. Herman Brothers Seed Merchants, Inc., Detroit, Mich. Filed Dec. 23, 1966.

LEON'S

For Bird and Hamster Feed (Int. Cl. 31).
First use June 1, 1961.

SN 262,183. Lysell Gesellschaft mit beschrankter Haftung, Hamburg-Stellingen, Germany. Filed Jan. 9, 1967.

LYSELL

Owner of German Reg. No. 647,508, dated Aug. 18, 1952.
For Canned Fish and Canned Fish-Based Hors d'Oeuvres (Int. Cl. 29).

SN 265,797. Clover Club Foods Company, Kaysville, Utah. Filed Mar. 2, 1967.

GADGETS

For Puffed Snack Products—Namely, Puffed Snacks Made From Wheat (Int. Cl. 30).
First use Feb. 2, 1967.

SN 266,572. Pacific Alaska Fisheries, Inc., Seattle, Wash. Filed Mar. 13, 1967.

DEMING'S

Owner of Reg. No. 306,394.
For Canned and Frozen Seafoods (Int. Cl. 29).
First use in or about August 1932.

SN 268,513. R. Michael Morrissey, d.b.a. Morrissey Food Sales and Mfg. Co., Bethesda, Md. Filed Apr. 6, 1967.

ROYAL FARE

For Frozen Processed Potatoes (Int. Cl. 29).
First use Apr. 12, 1966.

SN 269,806. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Apr. 21, 1967.

CRAZY EGGS

The word "Eggs" is disclaimed apart from the mark as shown, without disclaiming any common law rights therein.
For Chewing Gum (Int. Cl. 30).
First use Mar. 6, 1967.

SN 271,063. Naas Foods Inc., Portland, Ind. Filed May 9, 1967.

For Cooking Sauces Comprising Tomatoes, Onions, Mushrooms, and Condiments (Int. Cl. 30).
First use September 1965.

SN 274,253. Sunkist Growers, Inc., Los Angeles, Calif. Filed June 19, 1967.

HI-POLY

For Citrus Pectin (Int. Cl. 29).
First use Jan. 30, 1967.

SN 274,508. F & F Laboratories, Inc., Chicago, Ill. Filed June 22, 1967.

ARTIC SNOW

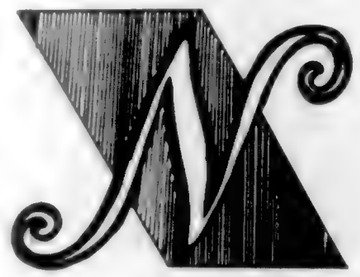
For Candy Bars (Int. Cl. 30).
First use about May 1958.

SN 275,186. Union Carbide Corporation, New York, N.Y. Filed June 30, 1967.

SENTRY

For Food Additive—Namely, Sodium Carboxymethyl Cellulose, for Use as a Food Thickener (Int. Cl. 1).
First use on or about Jan. 28, 1966.

SN 275,351. Nunes Bros. of California, Inc., Salinas, Calif. Filed July 5, 1967.



The drawing is lined for red.
For Fresh Lettuce (Int. Cl. 31).
First use Apr. 1, 1966.

SN 275,397. Tabor City Foods, Inc., Tabor City, N.C. Filed June 30, 1967.

YAMKINS

For Canned Sweet Potatoes (Int. Cl. 29).
First use June 8, 1967.

SN 275,470. Louis Rich Foods, Inc., West Liberty, Iowa. Filed July 6, 1967.

rich's

Owner of Reg. Nos. 656,556, 804,008, and others.
For Refrigerated Ready-To-Eat Turkey (Int. Cl. 29).
First use Jan. 1, 1968.

SN 276,653. East Point Seafood Company, Seattle, Wash. Filed July 24, 1967.

EAST POINT

For Salmon, Oyster, Shrimp, and Crab in the Canned, Frozen, and Fresh States (Int. Cl. 29).
First use 1946.

SN 276,896. C. J. Vignolo, d.b.a. Vignolo Farms, Shafter, Calif. Filed July 26, 1967.

NIFTY FIFTY

For Potatoes in Their Natural State (Int. Cl. 31).
First use May 25, 1967.

SN 277,116. Philip Morris Incorporated, d.b.a. Flavor Tree Foods Co., New York, N.Y. Filed July 31, 1967.

MONEY BAGS

For Candy (Int. Cl. 30).
First use July 28, 1967.

SN 283,604. Morton International, Inc., Chicago, Ill. Filed Oct. 30, 1967.

SOL STAR

Owner of Reg. No. 534,869.
For Salt (Int. Cl. 30).
First use on or about Nov. 13, 1964.

SN 284,970. National Pellet Corporatino, Bel Air, Md. Filed Nov. 16, 1967.

NATIONAL crunch

For Livestock Feed (Int. Cl. 31).
First use Feb. 1, 1967.

SN 285,370. Castle & Cooke, Inc., d.b.a. Dole Company, Honolulu, Hawaii. Filed Nov. 22, 1967.

Dole

Owner of Reg. Nos. 508,689, 641,848, and 649,040.
For Fresh Fruits (Int. Cl. 31).
First use Oct. 23, 1967.

SN 286,466. Kellogg Company, Battle Creek, Mich. Filed Dec. 8, 1967.

PIG TAILS

For Vegetable and Cereal Derived Snack Food Products (Int. Cl. 30).
First use Nov. 29, 1967.

SN 286,469. Kellogg Company, Battle Creek, Mich. Filed Dec. 8, 1967.

PRO-BOWL

For Cereal-Derived Food Product To Be Used as a Breakfast Food, Snack Food, or Confection (Int. Cl. 30).
First use Nov. 29, 1967.

SN 286,745. The Quaker Oats Company, Chicago, Ill. Filed Dec. 12, 1967.

MR. STRONG

For Cookies (Int. Cl. 30).
First use Oct. 18, 1967.

SN 286,970. Kellogg Company, Battle Creek, Mich. Filed Dec. 15, 1967.

For Cereal-Derived Food Product To Be Used as a Breakfast Food, Snack Food, and Confection (Int. Cl. 30).
First use Nov. 15, 1967.

SN 286,975. The Quaker Oats Company, Chicago, Ill. Filed Dec. 15, 1967.

GOURMET

Owner of Reg. No. 836,372.
For Cat Food (Int. Cl. 31).
First use at least as early as Jan. 11, 1966.

SN 287,338. Safeway Stores, Incorporated, Oakland, Calif. Filed Dec. 21, 1967.

Owner of Reg. Nos. 685,246 and 722,393.
For Coffee (Int. Cl. 30).
First use March 1957.

SN 287,491. Philip Morris Incorporated, d.b.a. Flavor Tree Foods Co., New York, N.Y. Filed Dec. 26, 1967.

FTF

For Candy (Int. Cl. 30).
First use Dec. 8, 1967.

SN 287,492. Philip Morris Incorporated, d.b.a. Flavor Tree Foods Co., New York, N.Y. Filed Dec. 26, 1967

DEMITASSE

For Candy (Int. Cl. 30).
First use Dec. 8, 1967.

SN 287,696. Dynamic Management Company, d.b.a. Buckhorn Ranch and Buckhorn Trout Hatchery, Antioch, Calif. Filed Dec. 28, 1967.

For Fresh and Frozen Fish (Int. Cl. 29).
First use Nov. 4, 1967.

SN 287,786. Monterey Fish Company, Monterey, Calif. Filed Dec. 29, 1967.

SEA WAVE

For Frozen Squid and Frozen Fish (Int. Cl. 29).
First use in 1952.

Class 47 — Wines

SN 257,395. Herbert Michaelis Kallmann, d.b.a. H. Michaelis Kallmann, Bingen (Rhine), Germany. Filed Oct. 27, 1966.

MAXIMILIAN

For Wines (Int. Cl. 33).
First use Oct. 1, 1966; in commerce Oct. 1, 1966.

Class 48 — Malt Beverages and Liquors

SN 255,477. Stern-Brauerei Carl Funke A.G., Essen, Germany. Filed Sept. 29, 1966.

STERN-BRÄU

The English translation of "Stern-Brau" is "star-brew." Owner of German Reg. No. 733,517, dated Dec. 3, 1959.
For Beer (Int. Cl. 32).

SN 271,492. Avelino Maldonado, d.b.a. La Criolla Food Products Co., Chicago, Ill. Filed May 15, 1967.

LA CRIOLLA

The Spanish words "La Criolla" mean "a native of any Latin American country." Owner of Reg. No. 742,445.
For Malt Beverage—Namely, Non-Alcoholic Beverage Made From Malt, Corn Flakes, Sugar, and Hops (Int. Cl. 32).
First use Mar. 16, 1967.

Class 49 — Distilled Alcoholic Liquors

SN 247,846. Tennessee Walking Horse Company, Tullahoma, Tenn, assignee of Tennessee Dickel Distilling Co., d.b.a. Geo. A. Dickel & Co., Tullahoma, Tenn. Filed June 10, 1966.

TENNESSEE WALKER

Applicant disclaims the exclusive right to the word "Tennessee" without waiving any of its rights at common law or otherwise. Owner of Reg. No. 827,283.
For Whisky (Int. Cl. 33).
First use Apr. 22, 1966.

SN 268,140. The American Distilling Company, d.b.a. The American Distilling Co., Inc., New York, N.Y. Filed Apr. 3, 1967.

PENNY PACKER

"Penny Packer" is not the name of a particular living individual.
For Whiskey (Int. Cl. 33).
First use Jan. 11, 1967.

SN 284,041. Ronrico Corporation, Santurce, Puerto Rico. Filed Nov. 2, 1967.

RONRICO GOLD LABEL

Reserving all common law rights, applicant disclaims the words "Gold Label" and the label colored gold, apart from the mark as shown. Owner of Reg. Nos. 327,538, 813,131, and others.
For Alcoholic Beverages—Namely, Rum and Rum-Containing Liqueur (Int. Cl. 33).
First use at least as early as 1946.

SN 284,042. Ronrico Corporation, Santurce, Puerto Rico. Filed Nov. 2, 1967.

RONRICO WHITE LABEL

Reserving all common law rights, applicant disclaims the words "White Label" and the label colored white, apart from the mark as shown. Owner of Reg. Nos. 327,538, 813,131, and others.
For Alcoholic Beverages—Namely, Rum and Rum-Containing Liqueur (Int. Cl. 33).
First use at least as early as 1941.

Class 50 — Merchandise Not Otherwise Classified

SN 256,632. Alart Associates Inc., New York, N.Y. Filed Oct. 18, 1966.

For Pierced Earring Tree Used as a Stand To Hold Pierced Earrings (Int. Cl. 20).
First use May 2, 1966.

SN 265,688. The Huxbaum Company, Canton, Ohio. Filed Mar. 1, 1967.

MR. WELCOMAT

Applicant, without waiver of common-law rights, disclaims the word "Welcomat" apart from the mark as shown.
For Floor Mats Comprising Carpeting Bonded to a Rubber Base (Int. Cl. 27).
First use Jan. 27, 1967.

SN 273,480. Callaway Mills Company, La Grange, Ga. Filed June 9, 1967.

FLOORCARE

For Floor Mats (Int. Cl. 27).
First use Aug. 5, 1966.

Class 51 — Cosmetics and Toilet Preparations

SN 236,047. John H. Breck, Inc., Springfield, Mass. Filed Jan 10, 1966.

COLOR SUDS

For Permanent Hair Coloring Preparation (Int. Cl. 3).
First use Dec. 28, 1965.

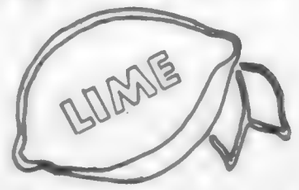
SN 236,050. John H. Breck, Inc., Springfield, Mass. Filed Jan. 10, 1966.

SUDS 'N COLOR

For Permanent Hair Coloring Preparation (Int. Cl. 3).
First use Dec. 28, 1965.

SN 252,116. Mem Company, Inc., Northvale, N.J. Filed Aug. 10, 1966.

English Leather



Applicant disclaims the word "Lime," and the depiction thereof, apart from the mark as shown. Owner of Reg. No. 672,943.
For Lotion Used as After Shave Lotion, or Eau de Cologne, or Toilet Water, or After Bath Rub (Int. Cl. 3).
First use Aug. 1, 1966.

SN 261,467. EZ Beauty Products Company, Houston, Tex. Filed Dec. 27, 1966.

EZ

For Hair Removal Cosmetic for Removing Hair From the Human Body, Neutralizer-Cleanser for Use on Human Skin, and Estrogen Hormone Oil for Use on Human Skin (Int. Cl. 3).
First use May 1, 1966.

SN 262,575. Federated Department Stores, Inc., d.b.a. Bloomingdale's, New York, N.Y. Filed Jan. 16, 1967.

Young World

For Bubble Bath, Nail Polish, Toilet Water, and Sachet Powder (Int. Cl. 3).
First use Oct. 11, 1945.

SN 270,227. Caron Corporation, New York, N.Y. Filed Apr. 28, 1967.

TABAC BLOND

Owner of Reg. No. 172,532.
For Perfume, Toilet Water, and Cologne (Int. Cl. 3).
First use June 1, 1919.

SN 271,037. Endicott Johnson Corporation, Endicott, N.Y. Filed May 9, 1967.

ENDWELL

For Protective Hand Cream (Int. Cl. 3).
First use Apr. 3, 1967.

SN 271,729. Seafoamé Corporation, McLean, Va. Filed May 17, 1967.

DI-ABOLISH

For Skin Preparation for Use as a Dye and Stain Remover and Cuticle Softener (Int. Cl. 3).
First use on or about May 2, 1967.

SN 276,853. Noxell Corporation, Baltimore, Md. Filed July 26, 1967.

COUNTRY FRESH

For Cleansing Cream (Int. Cl. 3).
First use June 2, 1967.

Class 52 — Detergents and Soaps

SN 259,646. Daubert Chemical Company, Oak Brook, Ill. Filed Nov. 29, 1966.

PRO

Owner of Reg. No. 620,107.
For Detergents, Cleaners, and Strippers—Namely, Waterless Hand Cleaner, Spray Washing Compounds, Caustic Strippers and Cleaners, Car Cleaners, Floor Cleaners, Emulsion Cleaners, Solvent Based Strippers, General and All Purpose Cleaners, Steam Cleaners, Acid-Containing Cleaners and Brighteners, Wax Removers, Glass Cleaners, Dry Rug Cleaner, Dishwashing Powder, Toilet Bowl Cleaner, Blanket and Roller Wash, Metal Cleaners, Two-Part Strippers, Rinse Aid, Spot Remover, and Degreasers (Int. Cl. 3).
First use Aug. 6, 1953.

SN 260,916. American Hospital Supply Corporation, Evanston, Ill. Filed Dec. 16, 1966.

TOMAC

Owner of Reg. Nos. 326,450, 732,775, and 836,601.
For Surgical Soaps; Hair Shampoos, General Purpose Soaps; Concentrated Powder Detergent for Laboratory and Hospital Use; and Enema Soap (Int. Cl. 3).
First use on or before Oct. 1, 1963.

SN 269,566. The Richardson Company, Melrose Park, Ill. Filed Apr. 19, 1967.

The drawing is lined for the color red. Owner of Reg. Nos. 765,724 and 765,725.
For Detergents and Cleaning Compositions for Industrial and Commercial Use (Int. Cl. 3).
First use in or before August 1963.

SN 269,569. The Richardson Company, Melrose Park, Ill. Filed Apr. 19, 1967.

Owner of Reg. Nos. 765,724 and 765,725.
For Detergents and Cleaning Compositions for Industrial and Commercial Use (Int. Cl. 3).
First use in or before August 1963.

SN 270,047. Consolidated Foods Corporation, d.b.a. Oxford Chemicals, Atlanta, Ga. Filed Apr. 26, 1967.

SANFAX XL-222

Owner of Reg. Nos. 626,687, 675,365, and 675,366.
For Chemical Cleaner for Sewer Lines (Int. Cl. 3).
First use on or about July 1, 1966.

SN 270,834. Wrap-On Company, Inc., Chicago, Ill. Filed May 5, 1967.

PLUMB OUT

For Solvents for Cleaning Drain Pipes and Plumbing Fixtures (Int. Cl. 3).
First use at least as early as July 15, 1964.

SN 270,881. Birma Products Corporation, Sayreville, N.J. Filed May 8, 1967.

CINDY

For Chemical Compositions Used To Remove Oxidation and/or Rust From a Variety of Different Surfaces (Int. Cl. 3).
First use Mar. 1, 1967.

SN 270,999. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed May 8, 1967.

ADEPT

For Scale Removing Product Especially Adapted for Removing Scale From Heat Exchangers, Piping, Process Equipment, Screens, Boilers, and the Like (Int. Cl. 3).
First use Apr. 19, 1967.

SN 271,026. C. P. Baker & Company, Philadelphia, Pa. Filed May 9, 1967.

MOD

For Liquid Detergent for Dishes (Int. Cl. 3).
First use May 1, 1967.

SN 271,036. Endicott Johnson Corporation, Endicott, N.Y. Filed May 9, 1967.

ENDWELL

For Waterless Hand Cleaner (Int. Cl. 3).
First use Apr. 3, 1967.

SN 271,869. Yardley of London, Inc., Totowa, N.J. Filed May 18, 1967.

CITY LIGHTS

For Hair Shampoo (Int. Cl. 3).
First use May 11, 1967.

SN 275,655. W. R. Grace & Co., New York, N.Y. Filed July 10, 1967.

ACRYLIFT

For Liquid Paint Stripper (Int. Cl. 3).
First use June 13, 1967.

SERVICE MARKS

Class 100 — Miscellaneous

SN 190,829. Ponderosa Motor Inns, Inc., Big Spring, Tex. Filed Apr. 10, 1964.

PONDEROSA

For Motel Services, Specifically, Providing Room Accommodations, Including Food and Beverage Service Incident Thereto (Int. Cl. 42).
First use July 9, 1962.

SN 203,202. The Ranch House Restaurants, Inc. #1, Fort Lauderdale, Fla. Filed Oct. 2, 1964.

RANCH HOUSE

For Restaurant Services (Int. Cl. 42).
First use Feb. 13, 1958.

SN 210,366. The Rustler, Inc., Glen Burnie, Md. Filed Jan. 21, 1965.

THE RUSTLER

For Restaurant Services (Int. Cl. 42).
First use Dec. 17, 1964.

SN 248,108. The Bishop and Babcock Corporation, Toledo, Ohio. Filed June 15, 1966.

PRESTOLIZED

Owner of Reg. Nos. 762,170, 798,466, and 798,467.
For Engineering Services in the Field of Industrial Fastening (Int. Cl. 42).
First use in or about January 1949.

SN 249,707. D. H. Overmyer Leasing Company, New York, N.Y. Filed July 7, 1966.

The drawing is lined for green, but color is not claimed as a feature of the mark.
For Arranging for the Acquisition and the Lease of Goods to the Order and/or Specifications of Others (Int. Cl. 42).
First use June 7, 1965.

SN 251,460. Parents Without Partners, Inc., New York, N.Y. Filed Aug. 1, 1966.

For Association Services to Member Chapters and to Members Thereof Directed to the Problems of Single Parents and Their Children, Including Research, Programming, Organizing, and Liaison (Int. Cl. 42).
First use in or about November 1965.

SN 253,242. Pole Control, Inc., Minneapolis, Minn. Filed Aug. 26, 1966.

For Services of Surveys of Utility Installations (Int. Cl. 42).
First use Sept. 1, 1962.

SN 256,251. Watch Dog Service, Inc., Paoli, Pa. Filed Oct. 11, 1966.

The mark includes a fanciful presentation of letters forming the word "Dog."
For Performing Periodic Security Checks on Unoccupied Residences and on Those in Which Elderly People Reside; and Chauffeuring Services (Int. Cl. 42).
First use Aug. 15, 1966.

SN 258,226. S. & H. Grossinger, Inc., Grossinger, N.Y. Filed Nov. 8, 1966.

GROSSINGER'S HAS EVERYTHING

Owner of Reg. No. 708,803.
For Hotel Services (Int. Cl. 42).
First use at least as early as 1944.

SN 262,186. National Association of Mutual Savings Banks, New York, N.Y. Filed Jan. 9, 1967.

Owner of Reg. No. 710,707.
For Trade Association Services—Namely, the Promotion of the Interests of Member Mutual Savings Banks, the Fostering of Thrift, Coordination of Industry-Wide Advertising Programs, Liaison Work With Federal Agencies and the Congress, and the Collection and Dissemination of Information Affecting Members (Int. Cl. 42).
First use Jan. 1, 1967.

SN 279,737. Hilton Hotels Corporation, Chicago, Ill. Filed Sept. 6, 1967.

Owner of Reg. No. 832,666.
For Hotel, Motel, and Restaurant Services (Int. Cl. 42).
First use about Nov. 15, 1965.

SN 284,424. Dolly Madison Industries, Inc., Philadelphia, Pa. Filed Nov. 9, 1967.

DOLLY MADISON HOUSE

Applicant disclaims the word "House" apart from the mark as shown. The name "Dolly Madison" identifies an historical individual. Owner of Reg. Nos. 281,725, 657,517, and 791,936.
For Service of Retail Restaurant and Carry-Out Food Services (Int. Cl. 42).
First use Oct. 2, 1967.

Class 101 — Advertising and Business

SN 245,276. Kepner Tregoe and Associates, Inc., Princeton, N.J. Filed May 10, 1966.

KTA

For Management Research, Consultation, and Development Services (Int. Cl. 35).
First use in or about June 1958.

SN 250,684. Premiumwares Limited, Rexdale, Ontario, Canada. Filed July 20, 1966.

PAYSO

Owner of Canadian Reg. No. 104,440, dated Sept. 21, 1956.
For Promoting the Sale of Goods and Services of Others by Means of Gift Tokens (Int. Cl. 35).

SN 251,623. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Aug. 3, 1966.

GOODYEAR

For Promoting of Goods and Services of Others by Means of Aerial Advertising (Int. Cl. 35).
First use Jan. 1, 1959.

SN 251,711. Cummings & Co., Inc., Nashville, Tenn. Filed Aug. 4, 1966.

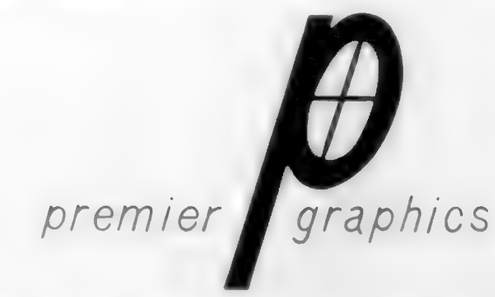
No claim is made to the words "Outdoor Advertising" and "Electric Signs," apart from the mark as shown. The drawing is lined for blue and red.
For Outdoor Advertising Services (Int. Cl. 35).
First use Dec. 30, 1955.

SN 251,932. Lady Baltimore Office Services, Inc., Baltimore, Md. Filed Aug. 8, 1966.

Lady

For Employment Agency Services—Namely, Furnishing Office Help (Int. Cl. 35).
First use May 11, 1961.

SN 251,949. Premier Letter Service, Inc., Chicago, Ill. Filed Aug. 8, 1966.

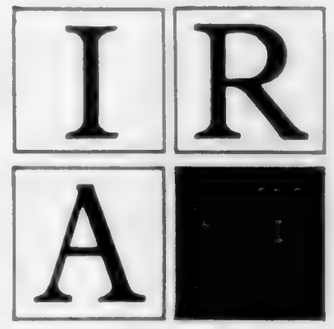


The word "Graphics" is disclaimed apart from the mark as shown.
For Lithography, Multigraphing, Mimeographing, Copy Preparation, and Direct Mail Advertising (Int. Cl. 35).
First use Jan. 1, 1965.

SN 253,653. Johnson-March Corp., d.b.a. Triple E Company, Philadelphia, Pa. Filed Sept. 1, 1966.

Applicant disclaims the words "Kitty Contest" apart from the mark as shown. The drawing is lined for red and blue.
For Promoting the Sale of Goods and Services of Others Through the Medium of Periodic Contests Relating to the Appearance and Behavior of Cats (Int. Cl. 35).
First use Dec. 4, 1965.

SN 254,654. William Hart Adler Inc., Skokie, Ill. Filed Sept. 19, 1966.



For Collection and Interpretation of Marketing Statistics and Information (Int. Cl. 35).
First use Oct. 15, 1965.

SN 257,483. Hallmark Cards, Incorporated, Kans City, Mo. Filed Oct. 28, 1966.

SOCIAL EXPRESSION SHOP

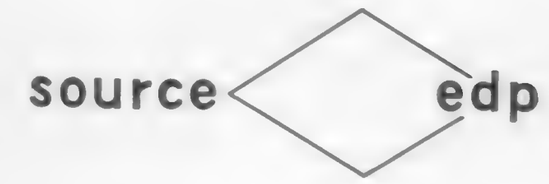
The word "Shop" is disclaimed apart from the mark as shown.
For Gift and Card Shop Services (Int. Cl. 35).
First use June 15, 1966.

SN 258,559. Source EDP, Inc., Chicago, Ill. Filed Nov. 14, 1966.

SOURCE EDP

For Providing Career Guidance and Placement Services for Data Processing Personnel (Int. Cl. 35).
First use Sept. 1, 1966.

SN 258,600. Source EDP, Inc., Chicago, Ill. Filed Nov. 14, 1966.



For Providing Career Guidance and Placement Services for Data Processing Personnel (Int. Cl. 35).
First use Sept. 1, 1966.

SN 265,264. Brown's Temporary Personnel of America, Inc., Los Angeles, Calif. Filed Feb. 23, 1967.

YOUR GIRL FROM

Brown's

The wording "Your Girl From" is disclaimed apart from the mark as shown. The drawing is lined for shading only and not for the purpose of indicating color.
For Furnishing Temporary Personnel to the Users Thereof and Providing and Furnishing Management Services Relating Thereto (Int. Cl. 35).
First use January 1967.

SN 265,265. Brown's Temporary Personnel of America, Inc., Los Angeles, Calif. Filed Feb. 23, 1967.

Brown's

The drawing is lined for shading only and not for the purpose of indicating color.
For Furnishing Temporary Personnel to the Users Thereof and Providing and Furnishing Management Services Relating Thereto (Int. Cl. 35).
First use May 1946.

SN 265,266. Brown's Temporary Personnel of America, Inc., Los Angeles, Calif. Filed Feb. 23, 1967.

The expression "First in the Field Since Forty Seven" is disclaimed apart from the mark as shown.

For Furnishing Temporary Personnel to the Users Thereof and Providing and Furnishing Management Services Relating Thereto (Int. Cl. 35).

First use January 1967.

SN 268,325. The Oklahoma Publishing Company, Oklahoma City, Okla. Filed Apr. 4, 1967.

For Printing Packaging Materials for Others (Int. Cl. 35).

First use Feb. 24, 1967.

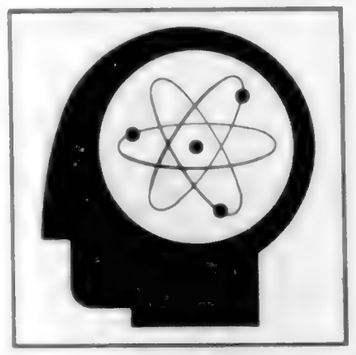
SN 268,326. The Oklahoma Publishing Company, Oklahoma City, Okla. Filed Apr. 4, 1967.

Without waiving any common law rights therein, applicant disclaims the words "National Packaging Company" apart from the mark in its entirety.

For Printing Packaging Materials for Others (Int. Cl. 35).

First use Feb. 24, 1967.

SN 268,383. Computer Services Corporation, Des Moines, Iowa. Filed Apr. 5, 1967.



For Computer Services—Namely, Consultation in the Use of Computers, Business and Scientific Problem Programming, Systems and Project Management (Int. Cl. 35).

First use June 15, 1965.

SN 268,588. Execupower, Inc., Chicago, Ill. Filed Apr. 7, 1967.

EXECUPOWER

For Providing Temporary Executive and Management Personnel (Int. Cl. 35).

First use Jan. 23, 1967.

SN 270,940. National Family Opinion, Inc., Toledo, Ohio. Filed May 8, 1967.

TRAC

For Market Research Service (Int. Cl. 35).

First use Dec. 5, 1966.

SN 283,393. McGraw-Hill, Inc., New York, N.Y. Filed Oct. 26, 1967.

NICEM

For Research and Computation of Information Relating to the Supplying of Information by Means of Computer and Audio-Visual Materials (Int. Cl. 35).

First use Feb. 2, 1967.

Class 102 — Insurance and Financial

SN 194,837. Frank S. Sottile, West Hartford, Conn. Filed June 3, 1964.

YOUR FINANCIAL SECURITY IS OUR BUSINESS

Applicant disclaims the words "Financial Security" apart from the composite mark.

For Insurance Planning Services—Namely, Estate Planning, and the Sale, Underwriting, and Servicing of Insurance (Int. Cl. 36).

First use on or before July 1, 1958; on or before Aug. 1, 1955, as to "Your Financial Security Is My Business."

SN 258,293. Dearborn Federal Credit Union, Dearborn, Mich. Filed Nov. 9, 1966.

PORTA CREDIT

The word "Credit" is disclaimed apart from the mark as shown.

For Personal Loan Services (Int. Cl. 36).

First use Mar. 15, 1966.

SN 259,897. Bankers Union Life Insurance Company, Denver, Colo. Filed Dec. 2, 1966.

BANKERS UNION LIFE INSURANCE COMPANY

The applicant disclaims the words "Life Insurance Company" apart from the mark as shown without any disclaimer of its common-law rights in said words.

For Underwriting Life Insurance (Int. Cl. 36).

First use as early as 1930.

SN 267,593. American Heritage Bank and Trust Co., Colorado Springs, Colo. Filed Mar. 27, 1967.

Applicant disclaims the words "Bank," "Service," "Strength," and "Progress" apart from the mark as shown.

For Banking and Trust Services (Int. Cl. 36).

First use Feb. 1, 1967.

SN 274,981. Northwestern National Insurance Company of Milwaukee, Milwaukee, Wis. Filed June 28, 1967.

For Underwriting Services for All Types of Insurance Including Property Casualty, Fidelity, Surety, Accident, Health, and Life (Int. Cl. 36).

First use on or about Feb. 12, 1963.

SN 274,982. Northwestern National Insurance Company of Milwaukee, Milwaukee, Wis. Filed June 28, 1967.

NN

For Underwriting Services for All Types of Insurance Including Property Casualty, Fidelity, Surety, Accident, Health, and Life (Int. Cl. 36).

First use on or about Feb. 12, 1963.

Class 103 — Construction and Repair

SN 248,022. Chemical Exhaust Fire Protection Co., Los Angeles, Calif. Filed June 14, 1966.

Applicant claims use for the area comprising California south of the northrn boundaries of San Luis Obispo, Kern and San Bernardino Counties, and Clark County, Nevada.

For Cleaning and Treating Grease Ducts and Air Conditioning Systems, Installing Air Filters, Servicing and Maintaining Kitchen Grease Flues, Ranges and Stoves and Ventillating Systems and the Motors Attached Thereto (Int. Cl. 37).

First use during 1957.

Subj. to Con. Use Proc. with SN 248,003.

SN 261,268. The Stebbins Engineering and Manufacturing Company, Watertown, N.Y. Filed Dec. 22, 1966.

STEBBINS

For Installing and Maintaining Liquid Storage Tanks and Linings for Same (Int. Cl. 37).

First use 1933.

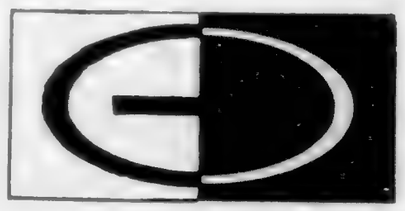
SN 267,591. Allpest Chemical Company, Inc., Louisville, Ky. Filed Mar. 27, 1967.

No claim is made to the word "Services" apart from the mark as shown. Owner of Reg. No. 693,630.

For Pest Control Services (Int. Cl. 37).

First use on or about Dec. 1, 1955.

SN 267,627. Gordon-Davis Linen Supply Company, Philadelphia, Pa. Filed Mar. 27, 1967.



The mark consists of the letters "GD" as a fanciful logotype design.

For Furnishing Clean Linen Service on a Periodic Basis (Int. Cl. 37).

First use Jan. 1, 1955.

SN 268,046. Edward Hyman Company, Culver City, Calif. Filed Mar. 31, 1967.

INSTA-SERVICE
BY EDWARD HYMAN COMPANY

"Edward Hyman" is the name of a particular living individual, whose consent is of record.

For Furnishing and/or Preparing Work Clothes and Uniforms With Company Names and Emblems Specially Sewn or Embroidered Thereon and Cuffing Trousers To Order for Industrial and Institutional Users (Int. Cl. 37).

First use Apr. 8, 1965.

SN 268,691. Household Pest Control, Chicago, Ill. Filed Apr. 10, 1967.

HPC

For Service of Pest Control (Int. Cl. 37).

First use Mar. 24, 1967.

Class 105 — Transportation and Storage

SN 251,905. Fernand Dumaine, d.b.a. F. Dumaine, Marseille, France. Filed Aug. 8, 1966.

OTO

Owner of French Reg. No. 700,666, dated Aug. 5, 1965.

For Hiring Service for Land Vehicles and Water and Air Craft and Other Means of Transportation of All Kinds for Persons and Goods (Int. Cl. 39).

SN 252,746. Navajo Freight Lines, Inc., Denver, Colo. Filed Aug. 19, 1966.

The drawing is lined for blue. Applicant disclaims the slogan "Coast-to-Coast Over the Navajo Trail" apart from the mark as shown. Owner of Reg. No. 545,370.

For Transportation of Freight by Truck and Forwarding of Freight by Air (Int. Cl. 39).

First use on or about Mar. 1, 1948.

SN 261,512. John J. Parker & Associates, Inc., d.b.a. John Parker & Associates, Inc., and 4 Seasons Tours, Seattle, Wash. Filed Dec. 27, 1966.

4 SEASONS TOURS

The word "Tours" is disclaimed apart from the mark as shown.

For Travel Services—Namely, Organization of Planned Tours Including Arranging Reservations for Travel and Hotel and Motel, and Resort Accommodations (Int. Cl. 39).

First use June 15, 1964.

SN 265,479. Arista Student Travel Association, Inc., New York, N.Y. Filed Feb. 27, 1967.

ARISTA

For Travel Agency Services Specializing in Student Tours (Int. Cl. 39).

First use Apr. 15, 1958.

SN 266,716. AITS, Inc., Chestnut Hill, Mass., by change of name from American International Travel Service, Inc., Chestnut Hill, Mass. Filed Mar. 15, 1967.

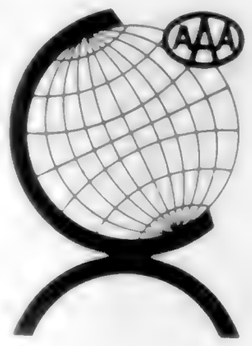
ORIENTAL CARNIVAL

The word "Oriental" is disclaimed apart from the mark as shown.

For Arranging and Conducting Tours (Int. Cl. 39).

First use at least as early as July 1966.

SN 287,117. The American Automobile Association (Incorporated), Washington, D.C. Filed Dec. 18, 1967.



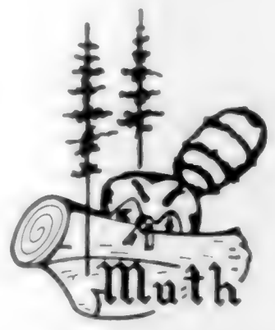
Owner of Reg. Nos. 547,321, 726,818, and others.

For General Travel Agency Services (Int. Cl. 39).

First use Nov. 1, 1966.

Class 106 — Material Treatment

SN 254,705. K. W. Muth Company, Sheboygan, Wis. Filed Sept. 19, 1966.



For Fabrication of Components for Automotive, Radio, and Furniture Items to the Order of Others (Int. Cl. 40).

First use December 1952.

SN 267,467. Kim Color Corporation, d.b.a. Tremendous Color, Hialeah, Fla., assignee of Monkey Color, Inc., Hialeah, Fla. Filed Mar. 13, 1967.

THE WHOLE WORLD KNOWS
TREMENDOUS
PIX

For Color Photograph Developing Services (Int. Cl. 40).

First use December 1966.

Class 107 — Education and Entertainment

SN 250,272. Holland Tulip Time Festival, Inc., Holland, Mich. Filed July 14, 1966.

TULIP TIME

For Service of Staging a Festival Featuring Traditional Dutch Entertainment, Flower Shows, and Parades (Int. Cl. 41).

First use May 1929.

SN 251,242. Sig Sakowicz, Chicago, Ill. Filed July 28, 1966.

SIG SAKOWICZ SHOW

Applicant disclaims the word "Show" apart from the mark as shown.

For Entertainment Services—Namely, Title of Interview, Variety, and Panel-Type Radio and Television Programs (Int. Cl. 41).

First use in or about July 1946.

SN 256,838. Barbara Hodgdon, Washington, D.C. Filed Oct. 20, 1966.

CAROUSEL CLASSROOM

For Television Broadcast Program for Children, Combining Teaching and Entertainment Services (Int. Cl. 41).

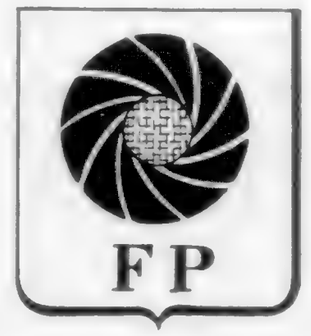
First use April 1966.

SN 259,758. Avelino Rodriguez Palenzuela, New York, N.Y. Filed Nov. 30, 1966.

For Providing Instruction in Data Processing, Computer Techniques, and Secretarial Skills as Well as in Providing a Personnel Placement Service for Students of the School Who Desire Employment (Int. Cl. 41).

First use Feb. 28, 1965.

SN 264,811. Famous Photographers School, Inc., Westport, Conn. Filed Feb. 16, 1967.



The drawing is lined for the color yellow, but no claim is made to color.

For Correspondence Courses in Photography (Int. Cl. 41).

First use Jan. 24, 1967.

SN 267,971. New Orleans Saints, New Orleans, La. Filed Mar. 30, 1967.

For Furnishing Entertainment Services in the Nature of Professional Football Games (Int. Cl. 41).

First use Mar. 5, 1967.

SN 270,255. New Orleans Saints, New Orleans, La. Filed Apr. 28, 1967.

For Furnishing Entertainment Services in the Nature of Professional Football Games (Int. Cl. 41).

First use Mar. 8, 1967.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

845,665. SAFFOLA 161. Pacific Vegetable Oil Corporation. SN 242,643. Pub. 12–26–67. Filed 4–4–66.

845,666. PRO. Pro-Phy-Lac-Tic Brush Company. SN 262,000. Pub. 12–26–67. Filed 1–5–67.

845,667. 1900. Hercules Incorporated. SN 262,263. Pub. 12–26–67. Filed 1–10–67.

845,668. FROM THE AMBER FAMILY OF FROMM. Fromm Bros., Inc. SN 263,371. Pub. 12–26–67. Filed 1–26–67.

845,669. GAF. General Aniline & Film Corporation. SN 264,818. Pub. 12–26–67. Filed 2–16–67.

845,670. PITTEX. Pittsburgh Plate Glass Company. SN 276,982. Pub. 12–26–67. Filed 7–28–67.

Class 2 — Receptacles

845,671. PRO. Pro-Phy-Lac-Tic Brush Company. SN 250,995. Pub. 12–26–67. Filed 7–25–66.

845,672. KRANCOR. Inland Container Corporation. SN 264,668. Pub. 12–26–67. Filed 2–14–67.

845,673. NUTTER. Nutter Engineering Company. MULTIPLE CLASS (Classes 2, 13, 100, and 101). SN 266,273. Pub. 12–26–67. Filed 3–9–67.

845,674. UNCLE BILL'S. C. W. Heppenstall, d.b.a. Ever-Flo Products. SN 267,282. Pub. 12–26–67. Filed 2–7–67.

845,675. SERVE. W. R. Grace & Co. SN 270,057. Pub. 12–26–67. Filed 4–26–67.

845,676. SEA & SKI. Sea & Ski Corporation. SN 270,161. Pub. 12–26–67. Filed 4–27–67.

845,677. EAST HOUSE AND E DESIGN. East House Enterprises, Inc. CONSOLIDATED CERTIFICATE. SN 271,778, pub. 12–12–67, filed 5–18–67. Cl. 2; SN 271,779, pub. 12–12–67, filed 5–18–67. Cl. 7; SN 271,777, pub. 12–12–67, filed 5–18–67. Cl. 37.

845,678. MAGIC-SPRAY. Gordon J. Benes, d.b.a. Lakeland Engineering Co. SN 272,568. Pub. 12–26–67. Filed 5–29–67.

845,679. BURD FLETCHER AND DESIGN. Burd & Fletcher Company. SN 272,803. Pub. 12–26–67. Filed 6–1–67.

845,680. GRIP-ZIP. CTP Industries Inc. SN 273,031. Pub. 12–26–67. Filed 6–5–67.

845,681. SUPERVAC. Vac Pac, Inc. SN 273,219. Pub. 12–26–67. Filed 6–6–67.

845,682. VIEW-GARD. Packaging Corporation of America. SN 281,753. Pub. 12–26–67. Filed 10–4–67.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

845,683. DUDS BY DOD ASTRO-INSULATED FOR WARMTH. Dogs of Distinction, Inc. SN 279,512. Pub. 12–26–67. Filed 9–1–67.

Class 4 — Abrasives and Polishing Materials

845,684. SCOUR FLOWER. General Cable Corporation. SN 239,613. Pub. 12–26–67. Filed 2–25–66.

845,685. RE-GUARD. S. C. Johnson & Son, Inc. SN 262,241. Pub. 12–26–67. Filed 1–10–67.

845,686. RE-GARD. S. C. Johnson & Son, Inc. SN 262,242. Pub. 12–26–67. Filed 1–10–67.

845,687. POL. S. Jackson & Son, Inc. SN 267,634. Pub. 12–26–67. Filed 3–27–67.

Class 5 — Adhesives

845,688. GAF. General Aniline & Film Corporation. SN 264,820. Pub. 12–26–67. Filed 2–16–67.

Class 6 — Chemicals and Chemical Compositions

845,689. SUMITOMO. Sumitomo Chemical Co., Ltd. SN 234,312. Pub. 12–26–67. Filed 12–9–65.

845,690. TEMPRO. Miles Laboratories, Inc. SN 250,167. Pub. 12–26–67. Filed 7–13–66.

845,691. CLEAR DIP. John O. Butler Company. SN 252,929. Pub. 12–26–67. Filed 8–23–66.

845,692. CAL-TINT. Tenneco Chemicals, Inc. SN 254,408. Pub. 12–26–67. Filed 9–13–66.

845,693. RUBICON. Rubicon Chemicals Inc. SN 260,587. Pub. 12–26–67. Filed 12–12–66.

845,694. ALOXANE. Ugine Kuhlmann. SN 267,865. Pub. 12–26–67. Filed 3–29–67.

845,695. CRINOLANE. Ugine Kuhlmann. SN 267,867. Pub. 12–26–67. Filed 3–29–67.

845,696. ELISIANE. Ugine Kuhlmann. SN 267,868. Pub. 12–26–67. Filed 3–29–67.

845,697. INTRACETYLE. Ugine Kuhlmann. SN 267,871. Pub. 12–26–67. Filed 3–29–67.

845,698. NEOREDOX. Ugine Kuhlmann. SN 267,872. Pub. 12–26–67. Filed 3–29–67.

845,699. NYLOQUINONE. Ugine Kuhlmann. SN 267,873. Pub. 12–26–67. Filed 3–29–67.

845,700. DU-NEMA. N. V. Philips-Duphar. SN 269,337. Pub. 12–26–67. Filed 4–17–67.

845,701. POLYCOMPLEX. Guardian Chemical Corporation. SN 269,374. Pub. 12–26–67. Filed 4–17–67.

845,702. DAL CLAY. International Rectifier Corporation. SN 270,682. Pub. 12–26–67. Filed 5–4–67.

845,703. COVOL. Corn Products Company. SN 270,902. Pub. 12–26–67. Filed 5–8–67.

845,704. PERMAMUL. The American Oil Company. SN 271,335. Pub. 12–26–67. Filed 5–12–67.

845,705. TIRE-LIFE. Big Three Industrial Gas & Equipment Co. SN 279,616. Pub. 12–26–67. Filed 9–5–67.

845,706. PANOMATIC. Morton International, Inc. SN 282,516. Pub. 12–26–67. Filed 10–16–67.

845,707. RAGGEDY ANN'S. Faultless Starch Company. SN 282,563. Pub. 12–26–67. Filed 10–16–67.

845,708. CHE-TEL. Chas. Pfizer & Co., Inc. SN 282,719. Pub. 12–26–67. Filed 10–17–67.

Class 7 — Cordage

845,677. CONSOLIDATED CERTIFICATE. See Class 2.

845,709. SPUN-TEX. Brownell & Company Incorporated. SN 273,739. Pub. 12–26–67. Filed 6–13–67.

845,710. NYCOR. Brownell & Company Incorporated. SN 273,740. Pub. 12–26–67. Filed 6–13–67.

845,711. GREAT WESTERN. Tubbs Cordage Company. SN 278,139. Pub. 12–26–67. Filed 8–11–67.

845,712. TUBBS-GW. Tubbs Cordage Company. SN 278,140. Pub. 12–26–67. Filed 8–11–67.

845,713. BLUE DIAMOND. George L. Soreghen, d.b.a. Diamond Whip Co. SN 278,615. Pub. 12–26–67. Filed 8–18–67.

845,714. KURALON. Kurashiki Rayon Co., Ltd. SN 278,804. Pub. 12–26–67. Filed 8–22–67.

Class 8 — Smokers' Articles, Not Including Tobacco Products

845,715. VU-LIGHTER AND DESIGN. Scripto, Inc. SN 263,486. Pub. 12–26–67. Filed 1–27–67.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

845,716. ALFA-SPEED. Dynamit Nobel Aktiengesellschaft. SN 254,379. Pub. 12–26–67. Filed 9–13–66.

Class 10 — Fertilizers

845,717. GARDENER'S AND DESIGN. Organic Compost Corporation. SN 257,304. Pub. 12–26–67. Filed 10–26–66.

Class 12 — Construction Materials

845,718. CLO CEL. Birma Products Corporation. SN 247,889. Pub. 10–24–67. Filed 6–13–66.

845,719. MM. Memphis Moldings, Inc. SN 252,741. Pub. 12–26–67. Filed 8–19–66.

845,720. BITULIZER. Empire Petroleum Company. SN 254,593. Pub. 12–26–67. Filed 9–16–66.

845,721. PENELINE. Empire Petroleum Company. SN 254,594. Pub. 12–26–67. Filed 9–16–66.

845,722. PENECIDE. Empire Petroleum Company. SN 254,595. Pub. 12–26–67. Filed 9–16–66.

845,723. UNI-FLITE AND DESIGN. Morgan Company. SN 262,497. Pub. 12–26–67. Filed 1–13–67.

845,724. PARR PAINT AND SEALANTS AND DESIGN. Parr Paint and Sealants Inc. SN 264,956. Pub. 12–26–67. Filed 2–17–67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

845,673. (See Class 2 for this trademark.)

845,725. BATH-PAK. Continental Oil Company. SN 250,739. Pub. 12–26–67. Filed 7–21–66.

845,726. BETHEA. Bethea Company, Inc. SN 256,426. Pub. 12–26–67. Filed 10–14–66.

845,727. WM AND DESIGN. Talsco Industries. SN 261,894. Pub. 12–26–67. Filed 1–3–67.

845,728. A AND DESIGN. Allenair Corp. SN 264,490. Pub. 12–26–67. Filed 2–13–67.

845,729. FT AND DESIGN. D and G Plastics Co. SN 265,233. Pub. 12–26–67. Filed 2–21–67.

845,730. "SHEARCLAMP." Permco Corporation. SN 265,328. Pub. 12–26–67. Filed 2–23–67.

845,731. X-TRU-COAT. Republic Steel Corporation. SN 268,994. Pub. 12–26–67. Filed 4–12–67.

845,732. QUINTPOINT. Eaton Yale & Towne Inc. SN 269,524. Pub. 12–26–67. Filed 4–19–67.

845,733. HYDRO-TITE. Slant/Fin Corporation. SN 269,576. Pub. 12–26–67. Filed 4–19–67.

845,734. TOP-LOC. American Standard Inc., by change of name from American Radiator & Standard Sanitary Corporation. SN 269,733. Pub. 12–26–67. Filed 4–21–67.

845,735. MULTI-DRIVE. Joseph A. Iaia, d.b.a. The Aero-Stat Co. SN 269,894. Pub. 12–26–67. Filed 4–24–67.

845,736. VISTA VINYL. Harte & Company, Inc. MULTIPLE CLASS (Classes 13 and 42). SN 278,635. Pub. 12–26–67. Filed 8–21–67.

Class 14 — Metals and Metal Castings and Forgings

845,737. GAF. General Aniline & Film Corporation. SN 264,819. Pub. 12–26–67. Filed 2–16–67.

845,738. CLIMELT-MOLY-MESH. American Metal Climax, Inc. SN 265,594. Pub. 12–26–67. Filed 2–28–67.

845,739. CUNIP. Handy & Harman. SN 266,152. Pub. 12–26–67. Filed 3–7–67.

845,740. MAGNETOFLEXURAL. W. M. Chace Company. SN 266,816. Pub. 12–26–67. Filed 3–15–67.

845,741. SPINNALOX. Engelhard Industries, Inc. SN 267,136. Pub. 12–26–67. Filed 3–20–67.

Class 15 — Oils and Greases

845,742. KEN-START. Witco Chemical Company, Inc. SN 250,796. Pub. 12–26–67. Filed 7–21–66.

845,743. CONOCO C AND DESIGN. Continental Oil Company. SN 270,232. Pub. 12–26–67. Filed 4–28–67.

845,744. SPRAY-GEL. Crouch Supply Co., Inc. SN 272,811. Pub. 12–26–67. Filed 6–1–67.

845,745. QUAKER STATE Q AND DESIGN. Quaker State Oil Refining Corporation. SN 273,106. Pub. 12–26–67. Filed 6–5–67.

Class 16 — Protective and Decorative Coatings

845,746. SPECTO-TRED. Rite-Way Coatings Co. SN 250,690. Pub. 12–26–67. Filed 7–20–66.

845,747. ALOCOAT. Wilson, Walton International Incorporated. SN 252,919. Pub. 12–26–67. Filed 8–22–66.

845,748. R-M AND DESIGN. Interchemical Corporation. SN 253,883. Pub. 12–26–67. Filed 9–6–66.

845,749. PCA. The Permalux Company. SN 260,762. Pub. 12–26–67. Filed 12–14–66.

845,750. BPS AND DESIGN. Textron Industries, Inc. SN 265,749. Pub. 12–26–67. Filed 3–1–67.

845,751. ALUMIGRIP. U.S. Paint Lacquer and Chemical Company. SN 269,129. Pub. 12–26–67. Filed 4–13–67.

845,752. INTERCHEM FINISHES AND DESIGN. Interchemical Corporation. SN 270,884. Pub. 12–26–67. Filed 5–1–67.

845,753. CAT-A-LAST. Finch Paint & Chemical Co. SN 271,611. Pub. 12–26–67. Filed 5–16–67.

845,754. RPG. Fact-O-Bake of Jacksonville, Inc. SN 277,856. Pub. 12–26–67. Filed 8–9–67.

Class 17—Tobacco Products

845,755. CONSORT. Carreras Limited. SN 264,143. Pub. 12-26-67. Filed 2-7-67.

845,756. ATC. The American Tobacco Company. SN 266,717. Pub. 12-26-67. Filed 3-15-67.

845,757. BULL (DESIGN). The American Tobacco Company. SN 269,277. Pub. 12-26-67. Filed 4-17-67.

845,758. PROJECT 7. Liggett & Myers Tobacco Company. SN 276,671. Pub. 12-26-67. Filed 7-24-67.

845,759. APACHE. The American Tobacco Company. SN 276,799. Pub. 12-26-67. Filed 7-26-67.

845,760. MERMAID. The American Tobacco Company. SN 276,800. Pub. 12-26-67. Filed 7-26-67.

845,761. L&M AND DESIGN. Liggett & Myers Tobacco Company. SN 277,365. Pub. 12-26-67. Filed 8-2-67.

Class 18—Medicines and Pharmaceutical Preparations

845,762. ANIMAL CARICATURES. Atomic Basic Chemicals Corporation. SN 235,253. Pub. 12-26-67. Filed 12-27-65.

845,763. PEPTAVLON. Imperial Chemical Industries Limited. SN 252,479. Pub. 12-26-67. Filed 8-16-66.

845,764. SULFOGEN. Dermik Laboratories, Inc. SN 255,969. Pub. 12-26-67. Filed 10-7-66.

845,765. TINTOGEN. Dermik Laboratories, Inc. SN 255,970. Pub. 12-26-67. Filed 10-7-66.

845,766. MYELOBROMOL. Chinoin Gyogyszer es Vegyeszeti Termekek Gyara R.T. SN 258,492. Pub. 12-26-67. Filed 11-14-66.

845,767. LANNETT. The Lannett Company, Inc. SN 263,467. Pub. 12-26-67. Filed 1-27-67.

845,768. EXTOL. Foremost-McKesson, Inc., by merger and change of name from McKesson & Robbins, Incorporated, d.b.a. McKesson Laboratories. SN 263,474. Pub. 12-26-67. Filed 1-27-67.

845,769. VERSAMAX. Bristol-Myers Company. SN 264,191. Pub. 12-26-67. Filed 2-8-67.

845,770. GAF. General Aniline & Film Corporation. SN 264,817. Pub. 12-26-67. Filed 2-16-67.

845,771. BAR-3. Eli Lilly and Company. SN 267,135. Pub. 12-26-67. Filed 3-20-67.

845,772. EMTRYSIDINA. Societe des Usines Chimiques Rhone-Poulenc. SN 267,290. Pub. 12-26-67. Filed 3-14-67.

845,773. KINGPEN. Bristol-Myers Company. SN 267,396. Pub. 12-26-67. Filed 3-23-67.

845,774. BROADCIDE. Bristol-Myers Company. SN 267,397. Pub. 12-26-67. Filed 3-23-67.

845,775. POLYCILLIN-N. Bristol-Myers Company. SN 267,399. Pub. 12-26-67. Filed 3-23-67.

845,776. GENERICARE. Purepac Corporation. SN 267,496. Pub. 12-26-67. Filed 3-24-67.

845,777. PREDULOSE. Professional Pharmacal Co., Inc. SN 267,766. Pub. 12-26-67. Filed 3-28-67.

845,778. SENTROL. Block Drug Company, Inc. SN 267,797. Pub. 12-26-67. Filed 3-29-67.

845,779. ROBITUSSIN-PE. A. H. Robins Company, Incorporated. SN 267,851. Pub. 12-26-67. Filed 3-29-67.

845,780. DESIGN OF A COCOANUT TREE. Kun Hook Yuen, d.b.a. Kun Wing Fook Medicine Company. SN 271,561. Pub. 12-26-67. Filed 5-15-67.

845,781. MEAD-CYCLINE. Mead Johnson & Company. SN 275,728. Pub. 12-26-67. Filed 7-11-67.

845,782. GYNOJECT. Mead Johnson & Company. SN 281,661. Pub. 12-26-67. Filed 10-3-67.

845,783. GYNOREST. Mead Johnson & Company. SN 281,662. Pub. 12-26-67. Filed 10-3-67.

845,784. GYNOSTAT. Mead Johnson & Company. SN 281,663. Pub. 12-26-67. Filed 10-3-67.

845,785. TRIANTHEN. Diamond Laboratories, Inc. SN 282,234. Pub. 12-26-67. Filed 10-11-67.

845,786. RVD. Diamond Laboratories, Inc. SN 282,238. Pub. 12-26-67. Filed 10-11-67.

845,787. EXTRA-SUL. Diamond Laboratories, Inc. SN 282,239. Pub. 12-26-67. Filed 10-11-67.

Class 19—Vehicles

845,788. KH AND DESIGN. Kelsey-Hayes Company. SN 248,814. Pub. 12-26-67. Filed 6-23-66.

845,789. WAYFARER. Douglas Ben Ian Proctor. SN 259,578. Pub. 12-26-67. Filed 11-23-66.

845,790. EQUI-FOIL. Michigan Wheel Company. SN 260,061. Pub. 12-26-67. Filed 12-5-66.

845,791. DYNA-FOIL. Michigan Wheel Company. SN 260,062. Pub. 12-26-67. Filed 12-5-66.

845,792. ISABELLA. Fabrica Nacional de Automoviles, S.A. SN 261,577. Pub. 12-26-67. Filed 12-28-66.

845,793. CLYBILT. Clyde Uhe, d.b.a. Clyde Body Co. SN 282,661. Pub. 12-26-67. Filed 10-17-67.

Class 21—Electrical Apparatus, Machines, and Supplies

845,794. L & F AND DESIGN. Lucas & Franczek, Inc. SN 251,143. Pub. 12-26-67. Filed 7-27-66.

845,795. COLORNET. Yaou Denki Kabushiki Kaisha. SN 251,489. Pub. 12-26-67. Filed 8-1-66.

845,796. LIFETYME. Luis Arellano, Jr., d.b.a. AED. SN 251,594. Pub. 12-26-67. Filed 8-3-66.

845,797. AP OFFSETTER AND DESIGN. The Associated Press. SN 253,413. Pub. 12-26-67. Filed 8-30-66.

845,798. MISCELLANEOUS DESIGN. The Seagrave Corporation. SN 255,358. Pub. 12-26-67. Filed 9-28-66.

845,799. ALCAD AND DESIGN. Alkaline Batteries Corporation. SN 257,342. Pub. 12-26-67. Filed 10-27-66.

845,800. STATE PRIDE. Belk Stores Services, Inc. SN 259,395. Pub. 12-26-67. Filed 11-25-66.

845,801. ALERTMASTER. H. Bruce Williams. SN 259,617. Pub. 12-26-67. Filed 11-28-66.

845,802. ACRILAMP AND DESIGN. Acrilamp Lighting Corp., d.b.a. Like Magic Products. SN 259,629. Pub. 12-26-67. Filed 11-29-66.

845,803. THROW-LITE. Nicholl Brothers, Inc. SN 262,057. Pub. 12-26-67. Filed 1-6-67.

845,804. INVIS-A-MOUNT. Metra Electronics Corporation. SN 262,954. Pub. 12-26-67. Filed 1-20-67.

845,805. JETSTREAM. Tandy Corporation, assignee of Radio Shack Corporation. SN 263,199. Pub. 12-26-67. Filed 1-24-67.

845,806. PATROLMAN. Tandy Corporation, assignee of Radio Shack Corporation. SN 263,200. Pub. 12-26-67. Filed 1-24-67.

845,807. MARK IV. General Battery and Ceramic Corp. SN 263,906. Pub. 12-26-67. Filed 2-3-67.

845,808. EXTEND-O-LET. Fedtro, Inc. SN 269,177. Pub. 12-26-67. Filed 4-14-67.

845,809. LI'L CRAFTY. Sears, Roebuck and Co. SN 269,357. Pub. 12-26-67. Filed 4-17-67.

845,810. AEROSTAT. The Simco Company, Inc. SN 269,574. Pub. 12-26-67. Filed 4-19-67.

845,811. THE MAD CLAD COOLIES. London Products, Inc. SN 269,904. Pub. 12-26-67. Filed 4-24-67.

845,812. SCANBE. Scanbe Manufacturing Corporation. SN 269,929. Pub. 12-26-67. Filed 4-24-67.

845,813. ANT DYNA AND DESIGN. Aquadynamics, Inc. SN 270,338. Pub. 12-26-67. Filed 5-1-67.

845,814. THERMOTRACE. Electrothermal Engineering Limited. SN 270,770. Pub. 12-26-67. Filed 5-5-67.

845,815. 888. Mars Signal Light Company. SN 270,797. Pub. 12-26-67. Filed 5-5-67.

845,816. TMA AND DESIGN. Television Manufacturers of America Co. SN 273,831. Pub. 12-26-67. Filed 6-14-67.

845,817. CHECKPOINT. Metal Edge Industries. SN 273,970. Pub. 12-26-67. Filed 6-15-67.

845,818. TMA TELEVISION MANUFACTURERS OF AMERICA CO. AND DESIGN. Television Manufacturers of America Co. SN 274,686. Pub. 12-26-67. Filed 6-26-67.

845,819. THERMAGOTRONS. Mining & Chemical Products Limited. SN 276,062. Pub. 12-26-67. Filed 7-17-67.

845,820. ALLIED. Allied Radio Corporation (Delaware corporation), by assignment and change of name from Allied Radio Corporation (Illinois corporation). MULTIPLE CLASS (Classes 21 and 36). SN 278,445. Pub. 12-26-67. Filed 8-17-67.

845,821. 3M. Minnesota Mining and Manufacturing Company. SN 278,558. Pub. 12-26-67. Filed 8-18-67.

Class 22—Games, Toys, and Sporting Goods

845,822. MISCELLANEOUS DESIGN. Old Pal, Inc. SN 232,020. Pub. 12-26-67. Filed 11-2-65.

845,823. WILLIE. Romper Room, Inc. SN 247,062. Pub. 12-26-67. Filed 6-1-66.

845,824. GREEN ARROW. Brandell Products Corporation. SN 247,673. Pub. 12-26-67. Filed 6-9-66.

845,825. MISS MOD AND DESIGN. Mr. Mod Shop, Inc. SN 249,042. Pub. 12-26-67. Filed 6-27-66.

845,826. SHADY LADY. Effingham Tackle Company. SN 249,419. Pub. 12-26-67. Filed 7-1-66.

845,827. R.S.V.P. Production & Marketing Company. SN 263,941. Pub. 12-26-67. Filed 2-3-67.

845,828. SHORTY-PAC. Homer D. Paulson. SN 264,957. Pub. 12-26-67. Filed 2-17-67.

845,829. CRAZY CRUSHAROO. Crush International Inc. SN 265,179. Pub. 12-26-67. Filed 2-21-67.

845,830. TF-8. Head Ski Co., Inc. SN 265,304. Pub. 12-26-67. Filed 2-23-67.

845,831. TINY-TETHERED. Atech Enterprises, Inc. SN 267,308. Pub. 12-26-67. Filed 3-22-67.

845,832. PASSMASTER. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 267,704. Pub. 12-26-67. Filed 3-27-67.

845,833. CAPT. MADDOX. Louis Marx & Co., Inc. SN 267,957. Pub. 12-26-67. Filed 3-30-67.

845,834. PAKRON. Pflueger Corporation. SN 268,063. Pub. 12-26-67. Filed 3-31-67.

845,835. MEDALIST AND DESIGN. Pflueger Corporation. SN 268,067. Pub. 12-26-67. Filed 3-31-67.

845,836. "RUSTY." Alexander Doll Company, Inc., d.b.a. Madame Alexander. SN 269,043. Pub. 12-26-67. Filed 4-13-67.

845,837. SOFTINA. Goldberger Doll Mfg. Co., Inc. SN 269,791. Pub. 12-26-67. Filed 4-24-67.

845,838. ZOK. Hassenfeld Bros. Inc. SN 269,890. Pub. 12-26-67. Filed 4-24-67.

845,839. PRISMATIC. Douglas M. Collins, d.b.a. Collins Ski Products Co., and Collins & Nosworthy. SN 270,117. Pub. 12-26-67. Filed 4-27-67.

845,840. DUTCHMAN AND DESIGN. The General Tire & Rubber Company. SN 270,377. Pub. 12-26-67. Filed 5-1-67.

845,841. JOLTZ AND DESIGN. CO-5 Company, Inc. SN 271,443. Pub. 12-26-67. Filed 5-15-67.

845,842. PANCHO. Louis Marx & Co., Inc. SN 271,453. Pub. 12-26-67. Filed 5-15-67.

845,843. BLIMPS. Pressman Toy Corporation. SN 276,467. Pub. 12-26-67. Filed 7-20-67.

845,844. GIGGLES. Cameo Doll Products Co., Inc. SN 276,735. Pub. 12-26-67. Filed 7-25-67.

845,845. RED-DOG AND DESIGN. Apparel Corporation of America. SN 276,801. Pub. 12-26-67. Filed 7-26-67.

845,846. DESIGN OF A TIGER HEAD. Columbia Industries, Inc. SN 277,441. Pub. 12-26-67. Filed 8-3-67.

845,847. TITELINE. Columbia Industries, Inc. SN 277,442. Pub. 12-26-67. Filed 8-3-67.

845,848. PIN-GRABBER. The Toney Penna Company. SN 280,137. Pub. 12-26-67. Filed 9-12-67.

845,849. COWBOY IN AFRICA. Mattel, Inc. SN 281,939. Pub. 12-26-67. Filed 10-6-67.

845,850. PICADOOS. Mattel, Inc. SN 281,942. Pub. 12-26-67. Filed 10-6-67.

845,851. TRULY SCRUMPTIOUS. Mattel, Inc. SN 282,244. Pub. 12-26-67. Filed 10-11-67.

845,852. SQUIRTLES. Mattel, Inc. SN 282,245. Pub. 12-26-67. Filed 10-11-67.

845,853. CARACTACUS POTTS. Mattel, Inc. SN 282,246. Pub. 12-26-67. Filed 10-1-67.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

845,854. BOLTMASTER AND DESIGN. Peltzer & Ehlers Kommandit Gesellschaft. SN 96,353. Pub. 1-31-61. Filed 5-3-60.

845,855. PAR-VAC. Peters and Russell Inc. SN 235,585. Pub. 12-26-67. Filed 12-30-65.

845,856. SOIL MOVER. The Soil Mover Manufacturing Corporation. SN 246,615. Pub. 12-26-67. Filed 5-25-66.

845,857. GEMINI AND DESIGN. Morse Industries, Inc. SN 250,101. Pub. 12-26-67. Filed 7-12-66.

845,858. HAVERBERG. Haverberg Auto Laundry Equipment Co., Inc. SN 250,375. Pub. 12-26-67. Filed 7-15-66.

845,859. CABLE CAR AND MAN (DESIGN). Clementina Ltd. SN 250,561. Pub. 12-26-67. Filed 7-19-66.

845,860. FLT. Centrala Importowo-Eksportowa "Impexmetal." SN 251,702. Pub. 12-26-67. Filed 8-4-66.

845,861. STIR-ATOR. David Manufacturing Co. SN 251,764. Pub. 12-26-67. Filed 8-4-66.

845,862. PIC-KWIK. Needle Industries Limited. SN 255,743. Pub. 12-26-67. Filed 7-26-66.

845,863. HY-ROVER. Hydraulic Machinery Company. SN 258,307. Pub. 12-26-67. Filed 11-9-66.

845,864. AERO VAC AND DESIGN. Power Cleaning Supply Co. SN 261,875. Pub. 12-26-67. Filed 1-3-67.

845,865. TOUCH TRANSFER. Thomson Industries, Inc. SN 262,720. Pub. 12-26-67. Filed 1-17-67.

845,866. LIFELONG. Fuller Tool Company, Inc. SN 263,758. Pub. 12-26-67. Filed 2-1-67.

845,867. GRUEL-OMATIC. Midwest Gruel-Omatic Company. SN 263,934. Pub. 12-26-67. Filed 2-3-67.

845,868. UNILOY. Hoover Ball and Bearing Company. SN 264,214. Pub. 12-26-67. Filed 2-8-67.

845,869. SNIPER. Athey Products Corporation. SN 264,500. Pub. 12-26-67. Filed 2-13-67.

845,870. COLLEGIATE. Cole Steel Equipment Co., Inc. SN 265,999. Pub. 12-26-67. Filed 3-6-67.

845,871. COLLEGIAN. Cole Steel Equipment Co., Inc. SN 266,000. Pub. 12-26-67. Filed 3-6-67.

845,872. NEEDLE-TIP. Southern Saw Service, Inc. SN 266,366. Pub. 12-26-67. Filed 3-9-67.

845,873. ISOPAC. Dresser Industries, Inc. SN 266,545. Pub. 12-26-67. Filed 3-14-67.

845,874. OMNIMIL. Sundstrand Corporation. SN 266,701. Pub. 12-26-67. Filed 3-14-67.

845,875. SALAMANDER. Pioneer Centrifuging Company. SN 269,787. Pub. 12–26–67. Filed 4–21–67.

845,876. AME AND DESIGN. Addison Machine Engineering, Inc. SN 278,176. Pub. 12–26–67. Filed 8–14–67.

845,877. HVT. Merriman, Inc. SN 281,528. Pub. 12–26–67. Filed 10–2–67.

Class 24 — Laundry Appliances and Machines

845,878. GENERAL COLD AND DESIGN. General Cold Corporation. MULTIPLE CLASS (Classes 24 and 34). SN 259,878. Pub. 12–26–67. Filed 12–2–66.

Class 26 — Measuring and Scientific Appliances

845,879. AUTO/STROBONAR. Honeywell Inc. SN 243,560. Pub. 11–7–67. Filed 4–15–66.

845,880. SPEEDO. Stewart-Warner Corporation. SN 246,384. Pub. 12–26–67. Filed 5–23–66.

845,881. ACCUTHERM. Bulova Watch Company, Inc. SN 248,408. Pub. 12–26–67. Filed 7–1–66.

845,882. FLUI-DRAM. Robert A. Stough, d.b.a. Robert A. Stough & Company. SN 253,921. Pub. 12–26–67. Filed 9–6–66.

845,883. LABROC. Astrosystems International Inc. SN 256,913. Pub. 12–26–67. Filed 10–21–66.

845,884. ELECTRA-ZOOM. Joseph B. Walker, d.b.a. Radio Optical Research Co. SN 262,648. Pub. 12–26–67. Filed 1–16–67.

845,885. DATACOMP. Clary Corporation. SN 264,029. Pub. 12–26–67. Filed 2–6–67.

845,886. WATCHMAN. Kontes Glass Company. SN 266,336. Pub. 12–26–67. Filed 3–9–67.

845,887. MAYES AND DESIGN. Mayes Brothers Tool Manufacturing Company. SN 266,435. Pub. 12–26–67. Filed 3–10–67.

845,888. V.I.P. BY H.O.V. The House of Vision, Inc. SN 266,885. Pub. 12–26–67. Filed 3–16–67.

845,889. EXPOZAC. Hallmark Cards, Incorporated. SN 267,248. Pub. 12–26–67. Filed 3–21–67.

845,890. ADJUST-A-BOB. Reginald T. Peacock. SN 268,059. Pub. 12–26–67. Filed 3–31–67.

845,891. ATLAS. Atlas Supply Company. SN 268,283. Pub. 12–26–67. Filed 4–4–67.

845,892. GAFAX. General Aniline & Film Corporation. SN 269,180. Pub. 12–26–67. Filed 4–14–67.

845,893. GAFAX. General Aniline & Film Corporation. SN 270,240. Pub. 12–26–67. Filed 4–28–67.

845,894. DENTA-GRAF. Charles J. Glasser. SN 271,145. Pub. 12–26–67. Filed 5–10–67.

845,895. CODETRONIC. Litton Business Systems, Inc., by merger and change of name from Royal Typewriter Company, Inc. SN 271,521. Pub. 12–26–67. Filed 5–15–67.

845,896. STINGL BAR. Trans-Meridian International, Inc. SN 274,839. Pub. 12–26–67. Filed 6–27–67.

845,897. ANDAC. Macarr, Inc. SN 282,515. Pub. 12–26–67. Filed 10–16–67.

Class 27 — Horological Instruments

845,898. SPACETRONIC. Edward Trauner, Inc. SN 272,319. Pub. 12–26–67. Filed 5–24–67.

Class 28 — Jewelry and Precious-Metal Ware

845,899. RM (DESIGN). Abe Hoffenberg, d.b.a. Ro-Mel Manufacturing Jewelers. SN 263,573. Pub. 12–26–67. Filed 1–30–67.

845,900. TWO TIMERS. J. L. Newhouse & Son, Inc. SN 273,204. Pub. 12–26–67. Filed 6–6–67.

Class 29 — Brooms, Brushes, and Dusters

845,901. HUSKY AND DESIGN. Rubberset Company. SN 236,653. Pub. 12–26–67. Filed 1–17–66.

845,902. UNIBODY AND DESIGN OF U AND ELEPHANT. Joseph Lieberman and Sons, Inc. SN 250,906. Pub. 12–26–67. Filed 7–25–66.

845,903. VINYLA. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 268,051. Pub. 12–26–67. Filed 3–31–67.

Class 30 — Crockery, Earthenware, and Porcelain

845,904. ROYAL CASTLE. Haruta & Co., Inc. SN 267,150. Pub. 12–26–67. Filed 3–20–67.

Class 32 — Furniture and Upholstery

845,905. THE BOONE TRAIL COLLECTION ETC. AND DESIGN. Maxwell Royal Chair Company. SN 262,651. Pub. 12–26–67. Filed 12–29–66.

845,906. SUSPENDEX. Robinson Metals Co., Inc. SN 271,180. Pub. 12–26–67. Filed 5–10–67.

845,907. MAGIC WAND. Levolor Lorentzen, Inc. SN 271,376. Pub. 12–26–67. Filed 5–12–67.

845,908. SLEEP-A-JUST. Dayco Corporation. SN 271,926. Pub. 12–26–67. Filed 5–19–67.

Class 33 — Glassware

845,909. GALLERY. Pittsburgh Plate Glass Company. SN 257,979. Pub. 12–26–67. Filed 11–4–66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

845,878. (See Class 24 for this trademark.)

845,910. MAPP. The Dow Chemical Company. SN 262,775. Pub. 12–26–67. Filed 1–18–67.

845,911. LONCOTIN. London Chemical Company, Inc. SN 279,148. Pub. 12–26–67. Filed 8–28–67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

845,912. MONO THANE. The Monarch Rubber Company. SN 266,061. Pub. 12–26–67. Filed 3–6–67.

Class 36 — Musical Instruments and Supplies

845,820. (See Class 21 for this trademark.)

845,913. DRILLTAPES. International Teaching Tapes, Inc. SN 282,163. Pub. 12–26–67. Filed 10–10–67.

845,914. PICCADILLY. Jerden Music, Inc. SN 282,330. Pub. 12–26–67. Filed 10–12–67.

Class 37 — Paper and Stationery

845,677. CONSOLIDATED CERTIFICATE. See Class 2.

845,915. QUICKY INKER. Chadbourn Finance Company, d.b.a. Time Saving Specialties. SN 264,197. Pub. 12–26–67. Filed 2–8–67.

845,916. ZIP-CHECK. Pittsburgh National Bank. SN 265,918. Pub. 12–26–67. Filed 3–3–67.

845,917. BRITE-STIK. Allen Hollander Co., Inc. (Delaware corporation), assignee of Allen Hollander Co., Inc. (New York corporation). SN 266,040. Pub. 12–19–67. Filed 3–6–67.

845,918. REEL-IDENT. Allen Hollander Co., Inc. (Delaware corporation), assignee of Allen Hollander Co., Inc. (New York corporation). SN 266,041. Pub. 12–19–67. Filed 3–6–67.

845,919. FASCINATION. West Virginia Pulp and Paper Company. SN 268,543. Pub. 12–26–67. Filed 4–6–67.

845,920. CRESTLINE. Hallmark Cards, Incorporated. SN 268,731. Pub. 12–26–67. Filed 4–10–67.

845,921. REGAL. Hallmark Cards, Incorporated. SN 268,732. Pub. 12–26–67. Filed 4–10–67.

845,922. CROWNLINE. Hallmark Cards, Incorporated. SN 268,733. Pub. 12–26–67. Filed 4–10–67.

845,923. COMMANDER. Simpson Lee Paper Company. SN 269,222. Pub. 12–26–67. Filed 4–14–67.

Class 38 — Prints and Publications

845,924. DSH ABSTRACTS. Deafness Speech and Hearing Publications, Inc. SN 250,251. Pub. 12–26–67. Filed 7–14–66.

845,925. THE SOCIAL PICTORIAL. Edward C. Dawson. SN 251,520. Pub. 12–26–67. Filed 8–2–66.

845,926. AMWAY. Amway Corporation. SN 258,030. Pub. 12–26–67. Filed 11–7–66.

845,927. ICE CREAM REVIEW ETC. AND DESIGN. The Miller Publishing Company. SN 260,945. Pub. 12–26–67. Filed 12–16–66.

845,928. COMMAND POST NEWS. Hassenfeld Bros. Inc. SN 262,167. Pub. 12–26–67. Filed 1–9–67.

845,929. TEKNIQUE. Illinois Tool Works Inc. SN 262,264. Pub. 12–26–67. Filed 1–10–67.

845,930. TOLAS. Tompkins' Label Service. SN 262,450. Pub. 12–26–67. Filed 1–12–67.

845,931. THE SUNDAY TIMES. The Sunday School Times Foundation. SN 263,626. Pub. 12–26–67. Filed 1–30–67.

845,932. CARRIAGE TRADE. William T. Ryan, d.b.a. William T. Ryan Publishing Company. SN 264,448. Pub. 12–26–67. Filed 2–10–67.

845,933. PUPPET LOVE. Norcross, Inc. SN 266,570. Pub. 12–26–67. Filed 3–13–67.

845,934. COINWORD. General Features Corporation. SN 266,653. Pub. 12–26–67. Filed 3–14–67.

845,935. HOME OFFICE SHIELD. The National Life and Accident Insurance Company. SN 267,057. Pub. 12–26–67. Filed 3–17–67.

845,936. THE SHIELD NEWS. The National Life and Accident Insurance Company. SN 267,345. Pub. 12–26–67. Filed 3–17–67.

845,937. BEAUTY TALK. Beauty Forecast Publications, Inc. SN 270,221. Pub. 12–26–67. Filed 4–28–67.

845,938. PIZZ-A-GOLD. Spot-O-Gold Corporation. SN 281,947. Pub. 12–26–67. Filed 10–6–67.

Class 39 — Clothing

845,939. STYLEWISE. Steinmetz Bros., Inc. SN 240,356. Pub. 12–26–67. Filed 3–7–66.

845,940. CHAP-MAN. Imperial Reading Corporation. SN 249,724. Pub. 12–26–67. Filed 7–7–66.

845,941. TOKAIDO. Honda Associates Inc. SN 254,283. Pub. 12–26–67. Filed 9–12–66.

845,942. FUNWEAR. Funwear, Inc. SN 254,782. Pub. 12–26–67. Filed 9–20–66.

845,943. WHITNEY & BLAIN. Karoll's. SN 258,553. Pub. 12–26–67. Filed 11–14–66.

845,944. M AND DESIGN. Midwest Outerwear Mfg. Co. SN 260,063. Pub. 12–26–67. Filed 12–5–66.

845,945. ABBIE GOWNS. Abbie C. Rutherford. SN 261,681. Pub. 12–26–67. Filed 12–29–66.

845,946. LORENTISS. Mr. Bernard Szwagier. SN 261,684. Pub. 12–26–67. Filed 12–29–66.

845,947. CRADLE STEP. The Juvenile Shoe Corporation of America. SN 266,233. Pub. 12–26–67. Filed 3–8–67.

845,948. BAKER'S DOZEN. Ashear Bros., Inc. SN 266,401. Pub. 12–26–67. Filed 3–10–67.

845,949. LISANNE. Lisanne, Inc. SN 266,670. Pub. 12–26–67. Filed 3–14–67.

845,950. SNO-HOPPERS. Melville Shoe Corporation. SN 267,167. Pub. 12–26–67. Filed 3–20–67.

845,951. WILLOWETTE. Burlington Industries, Inc. SN 267,806. Pub. 12–26–67. Filed 3–29–67.

845,952. SCOT-CLEAN. McGregor-Doniger Inc. SN 267,840. Pub. 12–26–67. Filed 3–29–67.

845,953. POLAR ROC. Harry & Dan Grossman Furs, Inc. SN 268,595. Pub. 12–26–67. Filed 4–7–67.

845,954. CANTERFIELD. Curlee Clothing Company. SN 269,746. Pub. 12–26–67. Filed 4–21–67.

845,955. ROOMY RICHARD. M. Fine & Sons Manufacturing Company, Inc. SN 270,777. Pub. 12–26–67. Filed 5–5–67.

845,956. WINCHESTER. Olin Mathieson Chemical Corporation. SN 273,723. Pub. 12–26–67. Filed 6–13–67.

845,957. POSTER. Poster Dresses Ltd. SN 275,810. Pub. 12–26–67. Filed 7–12–67.

Class 40 — Fancy Goods, Furnishings, and Notions

845,958. CANDI. Fashion Tress, Inc. SN 282,160. Pub. 12–26–67. Filed 10–10–67.

845,959. PRETTYGIRL. Fashion Tress, Inc. SN 282,329. Pub. 12–26–67. Filed 10–12–67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

845,736. (See Class 13 for this trademark.)

Class 44 — Dental, Medical, and Surgical Appliances

845,960. REGAL D ETC. AND DESIGN. Regal Dental Corporation. SN 257,984. Pub. 12–26–67. Filed 11–4–66.

845,961. SAUNDEX. Saunda, Inc., by change of name from Health Products, Inc. MULTIPLE CLASS (Classes 44 and 51). SN 263,572. Pub. 12-26-67. Filed 1-30-67.

845,962. AIR GLIDE AND DESIGN. Ritter Pfaudler Corporation. SN 268,105. Pub. 12-26-67. Filed 3-31-67.

845,963. ELECATH. Electro-Catheter Corporation. SN 268,480. Pub. 12-26-67. Filed 4-6-67.

Class 46 — Foods and Ingredients of Foods

845,964. CAFE SALVADOR. Cafe Salvador, Inc. SN 215,939. Pub. 12-26-67. Filed 4-7-65.

845,965. FRENCH SOUR. Lake Shore Products, Inc. SN 225,781. Pub. 12-26-67. Filed 8-16-65.

845,966. MARIA'S CIN CIN FOODS TO "BRAG" ABOUT AND DESIGN. Maria Bragalini, d.b.a. Maria's Cin Cin. SN 248,208. Pub. 12-26-67. Filed 6-16-66.

845,967. SALADA. Salada Foods Ltd. SN 252,134. Pub. 12-26-67. Filed 8-10-66.

845,968. DOG CHOW. Ralston Purina Company. SN 254,064. Pub. 12-26-67. Filed 9-8-66.

845,969. DANDY. Foremost-McKesson, Inc., assignee of Foremost Dairies, Inc. SN 255,794. Pub. 12-26-67. Filed 10-5-66.

845,970. MICKEY AND DESIGN. American Bakeries Company. SN 261,135. Pub. 12-26-67. Filed 12-20-66.

845,971. MISCELLANEOUS DESIGN. Armour and Company. SN 262,843. Pub. 12-26-67. Filed 1-19-67.

845,972. FISH NIP. T.F.H. Publications, Inc. SN 265,122. Pub. 12-26-67. Filed 2-20-67.

845,973. HONEY DEW PLUMP. Ralston Purina Company. SN 268,073. Pub. 12-26-67. Filed 3-31-67.

845,974. VK. Vasek and Kovar Potato Company. SN 268,926. Pub. 12-26-67. Filed 4-12-67.

845,975. MAUNA KEA. Orrell's Food Products, Inc. SN 269,205. Pub. 12-26-67. Filed 4-14-67.

845,976. FLAVIA FARMS. Filigree Foods, Inc. SN 269,409. Pub. 12-26-67. Filed 4-18-67.

845,977. SANTOPHYLL. Monsanto Company. SN 270,261. Pub. 12-26-67. Filed 4-28-67.

845,978. BLANKET. Austin Packing and Storage Company. SN 270,339. Pub. 12-26-67. Filed 5-1-67.

845,979. TOMAHAWK. Austin Packing and Storage Company. SN 270,340. Pub. 12-26-67. Filed 5-1-67.

845,980. APOTENE. Hoffmann-La Roche Inc. SN 270,490. Pub. 12-26-67. Filed 5-2-67.

845,981. CAPTAIN ASTRO. Continental Baking Company. SN 272,589. Pub. 12-26-67. Filed 5-29-67.

845,982. CAPTAIN ASTRO AND DESIGN. Continental Baking Company. SN 273,946. Pub. 12-26-67. Filed 6-15-67.

845,983. MISCELLANEOUS DESIGN. Oscar Mayer & Co., Inc. SN 274,817. Pub. 12-26-67. Filed 6-26-67.

845,984. FUNNELS. General Mills, Inc. SN 277,863. Pub. 12-26-67. Filed 8-9-67.

845,985. NOODLES PARMAZZINI. General Mills, Inc. SN 278,065. Pub. 12-26-67. Filed 8-11-67.

845,986. RICE CAPRICCIO. General Mills, Inc. SN 278,066. Pub. 12-26-67. Filed 8-11-67.

845,987. EL REY AND DESIGN. J. Mario Tamayo and Brothers, d.b.a. Tamayo Bros. SN 280,368. Pub. 12-26-67. Filed 9-15-67.

845,988. HIGH CHIEF AND DESIGN. King Kullen Grocery Co., Inc. SN 280,675. Pub. 12-26-67. Filed 9-19-67.

845,989. WHEN I SAY COFFEE, I MEAN FOLGER'S. The Folger Coffee Company. SN 282,653. Pub. 12-26-67. Filed 10-17-67.

845,990. BOUNTY. Campbell Soup Company. SN 283,061. Pub. 12-26-67. Filed 10-23-67.

Class 47 — Wines

845,991. LADY SCINTILLA. L. M. Opici Inc. SN 236,507. Pub. 12-26-67. Filed 1-14-66.

845,992. SOUL AND DESIGN. Western Grape Products. SN 264,701. Pub. 12-26-67. Filed 2-14-67.

845,993. AQUILA ROSSA. John Aquino Sons, Inc. SN 268,349. Pub. 12-26-67. Filed 4-5-67.

845,994. OLD MISSION. Schenley Industries, Inc. SN 268,532. Pub. 12-26-67. Filed 4-6-67.

Class 49 — Distilled Alcoholic Liquors

845,995. RAMADA INN. Ramada Inns, Inc. SN 253,168. Pub. 12-26-67. Filed 8-25-66.

845,996. SCHENLY. Schenley Industries, Inc. SN 267,981. Pub. 12-26-67. Filed 3-30-67.

845,997. CLARION. Canadian Schenley Distilleries, Ltd. SN 268,473. Pub. 12-26-67. Filed 4-6-67.

845,998. BULLWHACKER. Joseph E. Seagram & Sons, Inc. SN 280,916. Pub. 12-26-67. Filed 9-22-67.

845,999. CONCORDE. The Huntington Creek Corporation. SN 281,342. Pub. 12-26-67. Filed 9-28-67.

846,000. PENTHOUSE. Joseph E. Seagram & Sons, Inc. SN 281,347. Pub. 12-26-67. Filed 9-28-67.

Class 50 — Merchandise Not Otherwise Classified

846,001. ZIP-UP. Zip-Up Lighting Tower Co., Inc. SN 263,419. Pub. 12-26-67. Filed 1-26-67.

846,002. COMMANDER. Afco Rubber Corporation. SN 263,433. Pub. 12-26-67. Filed 1-27-67.

846,003. COPY-CATS THIRTEEN. Wolf & Vine, Inc. SN 263,970. Pub. 12-26-67. Filed 2-3-67.

846,004. UNIFRAME. Esco, Inc. SN 270,853. Pub. 12-26-67. Filed 5-8-67.

Class 51 — Cosmetics and Toilet Preparations

845,961. (See Class 44 for this trademark.)

846,005. SUNNY SLICKER. Yardley of London, Inc. SN 220,247. Pub. 12-26-67. Filed 6-2-65.

846,006. CONFIDENCE. E. R. Squibb & Sons, Inc., assignee of Olin Mathieson Chemical Corporation. SN 231,967. Pub. 12-26-67. Filed 11-2-65.

846,007. COLORCARE. The Realistic Company. SN 232,860. Pub. 10-25-66. Filed 11-17-65.

846,008. SUSPENSE. Beauty Counselors, Inc. SN 253,618. Pub. 12-26-67. Filed 9-1-66.

846,009. MIDNIGHT SUN. Clairol Incorporated. SN 258,062. Pub. 12-26-67. Filed 11-7-66.

846,010. ZSDEA. Hoyl Laboratories, Inc. SN 266,421. Pub. 12-26-67. Filed 3-10-67.

846,011. AQUASHEEN FORMULA. Odile de Paris, Ltd. SN 266,445. Pub. 12-26-67. Filed 3-10-67.

846,012. GOOD 'N CLEAN. Johnson & Johnson. SN 266,629. Pub. 12-26-67. Filed 3-14-67.

846,013. WILD WOODS. Eversharp, Inc. SN 277,593. Pub. 12-26-67. Filed 8-7-67.

846,014. WILD WOODS BY SCHICK. Eversharp, Inc. SN 277,594. Pub. 12-26-67. Filed 8-7-67.

846,015. EXTREME. Redken Laboratories, Inc. SN 282,249. Pub. 12-26-67. Filed 10-11-67.

Class 52 — Detergents and Soaps

846,016. REAL-E-QUIK. Embassy Chemicals Corp. SN 254,869. Pub. 12-26-67. Filed 9-21-66.

846,017. DENS-CHEM. Densco, Incorporated. SN 256,929. Pub. 12-26-67. Filed 10-21-66.

846,018. FOILZOIL. Sea-Air Chemical Corporation. SN 259,766. Pub. 12-26-67. Filed 11-30-66.

846,019. SUPER METONE GEL. Sea-Air Chemical Corporation. SN 259,768. Pub. 12-26-67. Filed 11-30-66.

846,020. GAF AND DESIGN. General Aniline & Film Corporation. SN 263,905. Pub. 12-26-67. Filed 2-3-67.

846,021. LIVING GODDESS. Colgate-Palmolive Company. SN 267,614. Pub. 12-26-67. Filed 3-27-67.

846,022. SHOWERMATE. W. H. Feronce Company. SN 268,040. Pub. 12-26-67. Filed 3-31-67.

846,023. NUIT DE NOEL. Caron Corporation. SN 268,571. Pub. 12-26-67. Filed 4-7-67.

846,024. GREASE-EATER. Union Carbide Corporation. SN 268,632. Pub. 12-26-67. Filed 4-7-67.

Service Marks

Class 100 — Miscellaneous

845,673. (See Class 2 for this trademark.)

846,025. SIGNATRON. Signatron, Inc. SN 226,477. Pub. 12-26-67. Filed 8-25-65.

846,026. MAN DRESSED IN WHITE SUIT (DESIGN). Kentucky Fried Chicken Corporation. SN 249,773. Pub. 12-26-67. Filed 7-7-66.

846,027. FANCIFUL FIGURE OF A MAN HAVING A CONTAINER-LIKE BODY (DESIGN). The Ohio Corrugating Company. SN 251,454. Pub. 12-26-67. Filed 8-1-66.

846,028. MISS RAMADA. Ramada Inns, Inc. SN 252,279. Pub. 12-26-67. Filed 8-12-66.

846,029. MODERN AIRE. Modern Aire Company. MULTIPLE CLASS (Classes 100 and 103). SN 257,641. Pub. 12-26-67. Filed 10-31-66.

846,030. MISCELLANEOUS DESIGN. Veterans of Foreign Wars National Home. SN 258,621. Pub. 12-26-67. Filed 11-14-66.

846,031. OLD-FARM. George P. Smith. SN 262,448. Pub. 12-26-67. Filed 1-12-67.

846,032. ACI. Automated Concepts, Inc. SN 262,916. Pub. 12-26-67. Filed 1-20-67.

Class 101 — Advertising and Business

845,673. (See Class 2 for this trademark.)

846,033. AMERICAN SERVICES. American Girl Service, Inc. SN 251,779. Pub. 12-26-67. Filed 8-5-66.

846,034. STAR AND KEY (DESIGN). City Products Corporation. SN 252,350. Pub. 12-26-67. Filed 8-15-66.

846,035. PHONE-AID. Special Telephone Service, Inc. SN 253,347. Pub. 12-26-67. Filed 8-29-66.

846,036. PHONE-AMERICA. Special Telephone Service, Inc. SN 253,349. Pub. 12-26-67. Filed 8-29-66.

846,037. GUNSIGHT (DESIGN). Oppenheimer Industries, Inc. MULTIPLE CLASS (Classes 101 and 102). SN 259,366. Pub. 12-26-67. Filed 11-25-66.

846,038. STAMPAREE. Bradfute Corporation. SN 260,722. Pub. 12-26-67. Filed 12-14-66.

846,039. MISCELLANEOUS DESIGN. Shendo Corporation. SN 277,480. Pub. 12-26-67. Filed 8-3-67.

Class 102 — Insurance and Financial

846,037. (See Class 101 for this trademark.)

846,040. A BASIC VALUE FUND. Pioneer Fund, Inc. SN 218,311. Pub. 12-26-67. Filed 5-7-65.

846,041. MAESTRO FIGURE (DESIGN). Bankamerica Service Corporation, assignee of Bank of America National Trust and Savings Association. SN 260,133. Pub. 12-26-67. Filed 12-6-66.

846,042. FIRST FUND OF VIRGINIA AND DESIGN. First Fund of Virginia, Inc. SN 262,695. Pub. 12-26-67. Filed 1-17-67.

Class 103 — Construction and Repair

846,029. (See Class 100 for this trademark.)

846,043. ALMA TREND PROGRAM. Alma Desk Company. SN 261,962. Pub. 12-26-67. Filed 1-5-67.

Class 105 — Transportation and Storage

846,044. DS. Norman V. Katz, d.b.a. Delivery Service Company. SN 253,080. Pub. 12-26-67. Filed 8-25-66.

Class 107 — Education and Entertainment

846,045. OPERATION COMEBACK. California Reading Clinics. SN 263,743. Pub. 12-26-67. Filed 2-1-67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1 — Raw or Partly Prepared Materials

846,046. Fredonia Seed Company, Fredonia, N.Y. SN 257,847. Filed P.R. 11-3-66; Am. S.R. 12-27-67.

FUN WITH FANTASTIC SEEDS

For Vegetable and Flower Seeds of Novelty Varities (Int. Cl. 31).
First use Sept. 1[illegible], 1966.

Class 2 — Receptacles

846,047. A & E Plastik Pak Co., Inc., Los Angeles, Calif. SN 233,296. Filed P.R. 11-26-65; Am. S.R. 1-11-68.

MEAT-N-VU

For Transparent Meat Trays (Int. Cl. 20).
First use Nov. 1, 1965.

Class 6 — Chemicals and Chemical Compositions

846,048. Airkem, Inc., Carlstadt, N.J. SN 264,784. Filed P.R. 2–16–67; Am. S.R. 12–26–67.

KAGE KARE

For Liquid Odor Counteractant Composition for Diluted Application to Environmental Surfaces and Litter for Confined Animals To Eliminate or Substantially Reduce the Malodors of Animal Excreta (Int. Cl. 5).
First use Dec. 15, 1966.

846,049. Uni-Tech Chemical Manufacturing Company, Sun Valley, Calif. SN 272,668. Filed P.R. 5–31–67; Am. S.R. 12–13–67.

HEMACHROME-FE

For Human Hemoglobin Laboratory Reagent Used in Diagnostic Testing as a Standard and Control (Int. Cl. 1).
First use on or before July 1, 1966.

Class 15 — Oils and Greases

846,050. Southwest Grease & Oil Co. (Kansas City), Inc., Kansas City, Mo. SN 245,026. Filed P.R. 5–5–66; Am. S.R. 1–10–68.

FLO-GREASE

For Lubricating Greases (Int. Cl. 4).
First use on or before Apr. 10, 1945.

846,051. Radiator Specialty Company, Charlotte, N.C. SN 262,288. Filed P.R. 1–10–67; Am. S.R. 12–8–67.

BEARIN'SEAL

The drawing is lined for the color red.
For Lubricant Additive for Preventing Oil Leaks (Int. Cl. 1).
First use Nov. 16, 1966.

Class 16 — Protective and Decorative Coatings

846,052. Eutectic Welding Alloys Corporation, Flushing, N.Y. SN 252,654. Filed P.R. 8–18–66; Am. S.R. 8–22–67.

PLASTALLOY

For Coating Products—Namely, Plastic Powder and Paints (Int. Cl. 2).
First use May 18, 1966.

846,053. Excel Chemical Corporation, Milwaukee, Wis. SN 265,504. Filed P.R. 2–27–67; Am. S.R. 12–26–67.

POSITIVE PROTECTIVE COATING

For Liquid Silicone Water Repellents for Masonry, Brick, Wood, Metal, and the Like (Int. Cl. 2).
First use Mar. 8, 1966.

Class 21 — Electrical Apparatus, Machines, and Supplies

846,054. Fedtro, Inc., Rockville Centre, N.Y. SN 261,481. Filed P.R. 12–27–66; Am. S.R. 12–27–67.

TV
COLOR CLEAR

For Electro-Magnetic Television Color Purifiers (Int. Cl. 9).
First use Dec. 14, 1966.

Class 22 — Games, Toys, and Sporting Goods

846,055. Potomac Engineering Corporation, Chicago, Ill. SN 250,862. Filed P.R. 7–22–66; Am. S.R. 12–4–67.

LOCK & LEARN

For Educational Devices or Toys To Train Children in the Manipulation of Various Door Fasteners (Int. Cl. 28).
First use July 11, 1966.

846,056. Tudor Metal Products Corporation, Brooklyn, N.Y. SN 261,119. Filed P.R. 12–19–66; Am. S.R. 12–20–67.

SUPER BOWL

For Equipment (or Apparatus) Sold as a Unit for Playing a Football-Type Board Game (Int. Cl. 28).
First use Dec. 6, 1966.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

846,057. International Paper Company, New York, N.Y. SN 260,862. Filed P.R. 12–15–66; Am. S.R. 12–7–67.

BUNDLE/PAKER

For Packaging Machinery (Int. Cl. 7).
First use Nov. 17, 1966.

Class 27 — Horological Instruments

846,058. Ulysse Nardin, Societe Anonyme, Manufacture de Montres et de Chronometres, Le Locle, Switzerland. SN 263,714. Filed P.R. 1–31–67; Am. S.R. 12–29–67.

NARDIN

Owner of Swiss Reg. No. 194,449, dated Oct. 20, 1962; and U.S. Reg. Nos. 429,250 and 829,076.
For Horological Products—Namely, Clocks, Watches and Parts Thereof (Int. Cl. 14).

Class 34 — Heating, Lighting, and Ventilating Apparatus

846,059. Klenz-Aire, Inc., Louisville, Ky. SN 264,835. Filed P.R. 2–16–67; Am. S.R. 1–3–68.

KLENZ-AIRE

For Secondary Incinerator Units (Int. Cl. 11).
First use Sept. 15, 1964.

Class 37 — Paper and Stationery

846,060. Phillips Petroleum Company, Bartlesville, Okla. SN 249,874. Filed P.R. 7–8–66; Am. S.R. 12–18–67.

SEAL 'N FREEZE

For Plastic Coated Locker Paper (Int. Cl. 16).
First use Apr. 1, 1966.

Class 38 — Prints and Publications

846,061. Lester Mann, Ambler, Pa. SN 243,328. Filed P.R. 4–13–66; Am. S.R. 11–22–67.

THE JOURNAL OF SPECIAL EDUCATION

For Quarterly Professional Magazine Directed Generally to Educators of Retarded Children (Int. Cl. 16).
First use Mar. 29, 1966.

846,062. Foto Features, Inc., Woodland, Calif. SN 257,952. Filed P.R. 11–4–66; Am. S.R. 12–19–67.

QUICKIE
5 Minute
Spanish Lessons

For Instructional Booklet Published From Time to Time (Int. Cl. 16).
First use Sept. 29, 1966.

846,063. The Bureau of National Affairs, Inc., Washington, D.C. SN 270,753. Filed 5–5–67.

FEDERAL CONTRACTS REPORT

For Periodically Published News Reports (Int. Cl. 16).
First use Feb. 24, 1964.

Class 39 — Clothing

846,064. I. C. Isaacs & Company, Inc., Baltimore, Md. SN 243,669. Filed P.R. 4–18–66; Am. S.R. 1–12–68.

LADY ISAACS

The name "Lady Isaacs" is fanciful and does not refer to any individual.
For Ladies' Slacks and Shorts (Int. Cl. 25).
First use Mar. 21, 1966.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

846,065. Fashion Decorators, Inc., New York, N.Y. SN 261,348. Filed P.R. 12–23–66; Am. S.R. 1–11–68.

FINEPLEAT

For Window Coverings—Namely, Curtains and Draperies (Int. Cl. 24).
First use Dec. 9, 1966.

Class 45 — Soft Drinks and Carbonated Waters

846,066. Columbine Beverage Co., d.b.a. Applebrau, Denver, Colo. SN 261,463. Filed 12–27–66.

APPLE BRAU

For Apple-Flavored Soft Drink and Syrup for Making the Same (Int. Cl. 32).
First use July 1, 1965.

Class 46 — Foods and Ingredients of Foods

846,067. Golden Grain Macaroni Co., San Leandro, Calif. SN 259,692. Filed P.R. 11–30–66; Am. S.R. 12–18–67.

STAYS-REDDI

For Spaghetti, Macaroni, and Noodles (Int. Cl. 30).
First use Oct. 25, 1966.

846,068. Pierce Pre-Cooked Foods, Inc., Moorefield, W. Va. SN 261,196. Filed P.R. 1–24–67; Am. S.R. 1–4–68.

SUPER-CHIK

For Fully Cooked and Breaded Chicken Parts (Int. Cl. 29).
First use Nov. 23, 1966.

846,069. Goya Foods Inc., Brooklyn, N.Y. SN 264,929. Filed P.R. 2–17–67; Am. S.R. 1–9–68.

SABOR

For Spices (Int. Cl. 30).
First use Jan. 3, 1967.

846,070. Welch's Nut & Candy Co., Chicago, Ill. SN 266,271. Filed P.R. 3–8–67; Am. S.R. 10–30–67.

HAWAII CRUNCH

For Food Snack Consisting of Sugar, Peanuts, Corn Syrup, Coconut, Popped Corn, Butter, Salt, Vegetable Oil, and Lecithin (Int. Cl. 30).
First use Oct. 31, 1965.

846,071. Welch's Nut & Candy Co., Chicago, Ill. SN 266,272. Filed P.R. 3–8–67; Am. S.R. 10–30–67.

VIRGINIA CRUNCH

For Food Snack Consisting of Peanuts, Sugar, Corn Syrup, Butter, Vegetable Oil, Salt, Bicarbonate of Soda, and Lecithin (Int. Cl. 30).
First use Nov. 1, 1965.

846,072. Maplecrest Sausage Company, Inc., Rochester, N.Y. SN 266,770. Filed P.R. 3–15–67; Am. S.R. 1–18–68.

POP OPEN

For Frankfurters (Int. Cl. 29).
First use April 1964.

846,073. Good Humor Corporation, Englewood Cliffs, N.J. SN 268,490. Filed P.R. 4–6–67; Am. S.R. 9–27–67.

DUBL-DECKER

For Quiescently Frozen Confections—Namely, Frozen Confections on a Stick (Int. Cl. 30).
First use Sept. 22, 1966.

846,074. Regina Grape Products Co., Etiwanda, Calif. SN 271,989. Filed P.R. 5–22–67; Am. S.R. 12–14–67.

CHAMPAGNE STOCK

For Wine Vinegar (Int. Cl. 30).
First use at least as early as November 1957.

Class 47 — Wines

846,075. Fernando A. de Terry S.A., Puerto de Santa Maria (Cadiz), Spain. SN 270,762. Filed 5–5–67.

The drawing is lined for gold. Owner of U.S. Reg. Nos. 753,824, 838,128, and others; and Spanish Reg. No. 463,053, dated May 20, 1965.
For Wine (Int. Cl. 33).

Class 51 — Cosmetics and Toilet Preparations

846,076. Avon Products, Inc., New York, N.Y. SN 259,076. Filed P.R. 11–21–66; Am. S.R. 1–17–68.

DOUBLE COAT

For Nail Polish Preservers (Int. Cl. 3).
First use Feb. 29, 1946.

846,077. Johnson & Johnson, New Brunswick, N.J. SN 266,634. Filed P.R. 3–14–67; Am. S.R. 1–9–68.

FEMININE HANDS

For Hand Lotion (Int. Cl. 3).
First use Nov. 23, 1966.

Service Mark

Class 105 — Transportation and Storage

846,078. American Transportation Enterprises, Inc., Wilmington, Del. SN 268,350. Filed 4–5–67.

SEE THE U.S. WITH US

For Bus Transportation of Passengers and Their Baggage (Int. Cl. 39).
First use Jan. 20, 1966.

TRADEMARK REGISTRATIONS RENEWED

31,147. HYDROX. Cl. 45 (Int. Cl. 32). 1–18–1898.
66,976. GREEN BAND (DESIGN). Cl. 37 (Int. Cl. 16). 1–7–08.
67,090. "JUPITER." Cl. 37 (Int. Cl. 16). 1–14–08.
67,096. CLINICAL EXCERPTS. Cl. 38 (Int. Cl. 16). 1–14–08.
67,272. PURITY AND DESIGN. Cl. 46 (Int. Cl. 29). 1–28–08.
67,416. DANDERINE. Cl. 51 (Int. Cl. 3). 2–4–08.
67,702. "CREWEL" ETC. AND DESIGN. Cl. 40 (Int. Cl. 26). 2–18–08.
235,583. "FOOT-LITE." Cl. 39 (Int. Cl. 25). 11–22–27.
236,614. PINAKRYPTOL. Cl. 6 (Int. Cl. 2). 12–20–27.
236,676. "THE FEARLESS." Cl. 23 (Int. Cl. 7). 12–20–27.
237,545. ATLAS. Cl. 16 (Int. Cl. 2). 1–10–28.
237,653. OTC. Cl. 23 (Int. Cls. 7 and 8). 1–17–28.
237,935. "COMET" LINED TO INDICATE RED. Cl. 23 (Int. Cl. 8). 1–24–28.
238,211. REPRESENTATION OF A COMET. Cl. 23 (Int. Cl. 8). 1–31–28.
238,264. TIN-APA. Cl. 46 (Int. Cl. 29). 1–31–28.
238,457. "DRAGON" AND PICTORIAL DESIGN. Cl. 6 (Int. Cl. 5). 2–7–28.
238,607. SILVER SEAL. Cl. 46 (Int. Cl. 31). 2–14–28.
238,608. PURE GOLD. Cl. 46 (Int. Cl. 31). 2–14–28.
238,838. KWIK. Cl. 13 (Int. Cl. 26). 2–14–28.
239,043. WHEATON. Cl. 13 (Int. Cls. 6 and 11). 2–21–28.
239,245. ARWELL. Cl. 6 (Int. Cl. 5). 2–28–28.

239,311. SNICKERS. Cl. 46 (Int. Cl. 30). 2–28–28.
239,869. "SILVER SEAL" ETC. AND DESIGN. Cl. 46 (Int. Cl. 31). 3–13–28.
240,220. BEARIUM. Cl. 14 (Int. Cl. 6). 3–20–28.
241,054. "BEARIUM" AND DESIGN. Cl. 14 (Int. Cl. 6). 4–17–28.
241,116. ARISTOCRAT. Cl. 46 (Int. Cl. 39). 4–17–28.
242,611. "SHOKSORB." Cl. 37 (Int. Cl. 16). 5–29–28.
433,388. SCA AND DESIGN. Cl. 12 (Int. Cl. 19). 10–14–47.
433,443. CHIFFON. Cl. 51 (Int. Cl. 3). 10–14–47.
433,725. SIX-TWELVE. Cl. 6 (Int. Cl. 5). 10–28–47.
433,938. BEST & CO. Cl. 41 (Int. Cl. 18). 11–4–47.
434,193. SILVERTROL. Cl. 23 (Int. Cl. 7). 11–11–47.
434,919. CRITERION. Cl. 26 (Int. Cl. 9). 12–9–47.
435,199. BEUTA-FILM. Cl. 42 (Int. Cl. 17). 12–16–47.
435,400. LET'S CORE-LAB-OHATE. Cl. 38 (Int. Cl. 16). 12–23–47.
435,553. 1-2-3 TABLETS. Cl. 18 (Int. Cl. 5). 12–30–47.
435,654. SOPHIE SAKS FIFTH AVENUE. Cl. 39 (Int. Cl. 25). 1–6–48.
435,769. SUDSHINE. Cl. 52 (Int. Cl. 3). 1–6–48.
435,833. SPEEDEX JUNIOR. Cl. 26 (Int. Cl. 9). 1–13–48.
435,857. CONCEPTULATOR. Cl. 26 (Int. Cl. 16). 1–13–48.
435,864. HONEY. Cl. 26 (Int. Cl. 9). 1–13–48.
435,898. FABULON. Cl. 16 (Int. Cl. 2). 1–13–48.
435,918. CARBROSTEEL. Cl. 36 (Int. Cl. 9). 1–13–48.
435,994. DESYPHED. Cl. 18 (Int. Cl. 5). 1–20–48.
436,072. GENIE. Cl. 23 (Int. Cl. 8). 1–20–48.
436,164. TRANSIT-KLEEN. Cl. 4 (Int. Cl. 3). 1–27–48.
436,495. DEALA. Cl. 39 (Int. Cl. 25). 2–10–48.
436,608. HYDROMITE. Cl. 12 (Int. Cl. 19). 2–17–48.
436,751. CARBOSE. Cl. 6 (Int. Cl. 1). 2–17–48.
436,999. EACH GRAIN SALUTES YOU AND DESIGN. Cl. 46 (Int. Cl. 30). 3–2–48.
437,176. UNCLE BEN'S. Cl. 46 (Int. Cl. 30). 3–9–48.
437,251. SOPHIE. Cl. 3 (Int. Cl. 18). 3–9–48.
437,592. NUTRAGEST. Cl. 18 (Int. Cl. 5). 3–30–48.
437,690. SOPHIE. Cl. 39 (Int. Cl. 25). 3–30–48.
437,895. LINDE. Cl. 34 (Int. Cl. 9). 4–6–48.
438,222. PLEE-ZING. Cl. 6 (Int. Cls. 3 and 5). 4–13–48.
438,968. BISSINGER'S. Cl. 46 (Int. Cl. 30). 5–25–48.
439,008. MAGIC-FLO. Cl. 13 (Int. Cl. 7). 6–1–48.
439,085. ROTOFECT. Cl. 37 (Int. Cl. 16). 6–1–48.
439,159. LAWSONIT. Cl. 39 (Int. Cl. 25). 6–8–48.
439,172. DOESONA. Cl. 42 (Int. Cl. 24). 6–8–48.
439,518. FASHONA. Cl. 42 (Int. Cl. 24). 7–6–48.
500,419. HETRAZAN. Cl. 18 (Int. Cl. 5). 5–18–48.
500,468. DATE PALM AND DESIGN. Cl. 46 (Int. Cl. 31). 6–1–48.
500,545. CARICIDE. Cl. 18 (Int. Cl. 5). 6–1–48.
500,570. MARTHA MANNING. Cl. 39 (Int. Cl. 25). 6–1–48.
500,571. CAROLE KING. Cl. 39 (Int. Cl. 25). 6–1–48.
500,572. DORIS DODSON. Cl. 39 (Int. Cl. 25). 6–1–48.
500,574. ARTANE. Cl. 18. (Int. Cl. 5). 6–1–48.
500,927. REPRESENTATION OF A HAND. Cl. 43 (Int. Cl. 23). 7–6–48.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Jan. 23, 1962

726,622. PGS AND DESIGN. Cl. 6.
726,628. MOON GLOW. Cl. 6.
726,629. BARRIER. Cl. 6.
726,630. FINISH. Cl. 6.
726,632. GRO-ALL STOPP AND DESIGN. Cl. 6.
726,635. REPRESENTATION OF A HUMAN HEAD. Cl. 8.
726,636. SMOKER'S CADDY. Cl. 8.
726,643. E-Z-LOK. Cl. 13.
726,645. LIHLITE. Cl. 14.
726,646. MOTOR MOLY. Cl. 15.
726,648. RUBBA-MARK. Cl. 16.
726,649. CHROMSAVER AND DESIGN. Cl. 16.
726,651. CAPITONIC AND DESIGN. Cl. 18.
726,653. HI-G MIST. Cl. 18.
726,655. HYPNAZOL. Cl. 18.
726,656. MEGOBAR. Cl. 18.
726,657. BONE TONE. Cl. 18.
726,662. TRIPHYSAN. Cl. 18.
726,663. HALINONE. Cl. 18.
726,668. DIMERCET. Cl. 18.
726,670. ENZY-LAX. Cl. 18.
726,671. VORTEL. Cl. 18.
726,678. MENSERENE. Cl. 18.
726,683. REPRESENTATION OF A HUMAN MALE HEAD. Cl. 22.
726,684. REPRESENTATION OF MAN. Cl. 22.
726,685. SUP-MATIC. Cl. 22.
726,686. KEEP YOUR BALANCE AND DESIGN. Cl. 22.
726,687. WAZOO. Cl. 22.
726,691. CHEWEY BOB. Cl. 22.
726,694. SNAP-OUT. Cl. 23.
726,698. FAIRLANE. Cl. 23.
726,700. MIL-A-TIL. Cl. 23.
726,701. BTF. Cl. 23.
726,702. BEDCO. Cl. 23.
726,704. Y-COR. Cl. 26.
726,706. GAMMAPROBE. Cl. 26.
726,710. LINCE. Cl. 26.
726,712. VISTAMATIC AND DESIGN. Cl. 26.
726,713. SALDOQUICK. Cl. 26.
726,714. MULTIQUICK. Cl. 26.
726,715. SHIFT-O-MATIC. Cl. 26.
726,726. RACINE ROYALE AND DESIGN. Cl. 27.
726,728. REPRESENTATION OF A HUMAN MALE HEAD. Cl. 30.
726,729. "PASHA-PILLOW." Cl. 32.
726,733. TRI ANGLE. Cl. 37.
726,737. RING-O-RAMA. Cl. 37.
726,738. PHOTO-TINTS. Cl. 37.
726,746. BARACA-PHILATHEA. Cl. 38.
726,747. BARACA PHILATHEA ETC. AND DESIGN. Cl. 38.
726,751. MISCELLANEOUS DESIGN. Cl. 38.
726,752. JTC SITE-A-CAR SYSTEM. Cl. 38.
726,755. MELBROKE. Cl. 39.
726,765. CHARLEY WEAVER AND REPRESENTATION OF MAN'S HEAD. Cl. 46.
726,766. CHARLIE WEAVER'S FOR "MY PEOPLE" AND MAN'S PORTRAIT. Cl. 46.
726,767. CHARLEY WEAVER'S MT. IDY CANDIES AND HUMAN PORTRAIT. Cl. 46.
726,785. FRIENDLY. Cl. 46.
726,787. SUNNYBRAE. Cl. 46.
726,790. PEETZA PETE. Cl. 50.
726,791. BE-BE-KEW. Cl. 50.
726,792. KATRINA. Cl. 50.
726,793. ALBERT STAEHLE. Cl. 50.
726,795. ELEGANT TOUCH. Cl. 51.
726,797. MR. TILFORD. Cl. 51.
726,807. PREMIER AND DESIGN. Cl. 100.
726,812. SAMUEL E. BOGLEY INC. AND DESIGN. Cl. 101.
726,813. INTERVENCO. Cl. 101.
726,814. THE COMPETITIVE EDGE. Cl. 101.
726,817. REPRESENTATION OF A BEAVER AND DESIGN. Cl. 105.
726,821. BLACK SHEEP CLUB AND DESIGN. Cl. 107.
726,824. SLEEV-LOCK. Cl. 13.
726,826. REID. Cl. 18.
726,829. PUT A SMILE IN YOUR LUNCH. Cl. 37.
726,831. NEWS & TRENDS. Cl. 38.
726,832. NONMETALLIC MINERALS PROCESSING. Cl. 38.
726,841. THE START YOUR OWN BUSINESS EXPOSITION. Cl. 101.

Section 18

710,124. FERTI-LAWN. Cl. 10. 1–24–61.

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MARCH 12, 1968

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Hassenfeld Bros., Inc., Pawtucket, R.I. 845,838, pub. 12–26–67. Cl. 22.
Hassenfeld Bros. Inc., Pawtucket, R.I. 845,928, pub. 12–26–67. Cl. 38.
Haverberg Auto Laundry Equipment Co., Inc., Chicago, Ill. 845,858, pub. 12–26–67. Cl. 23.
Head Ski Co., Inc., Timonium, Md. 845,830, pub. 12–26–67. Cl. 22.
Health Products, Inc. : *See*—
Saunda, Inc.
Heppenstall, C. W., d.b.a. Ever-Flo Products, Delray Beach, Fla. 845,674, pub. 12–26–67. Cl. 2.
Hercules Inc., Wilmington Del. 845,667, pub. 12–26–67. Cl. 1.
Hi-G, Inc., Long Island City, N.Y. 726,653, canc. Cl. 18.
Hoffenberg, Abe, d.b.a. Ro-Mel Mfg. Jewelers, Los Angeles, Calif. 845,899, pub. 12–26–67. Cl. 28.
Hoffmann-La Roche Inc., Nutley, N.J. 845,980, pub. 12–26–67. Cl. 46.
Hollander, Allen, Co., Inc., from Allen Hollander Co., Inc., Bronx, N.Y. 845,917–18, pub. 12–19–67. Cl. 37.
Home Industries Schools : *See*—
Empisal (Proprietary) Ltd.
Honda Associates Inc., New York, N.Y. 845,941, pub. 12–26–67. Cl. 39.
Honeywell Inc., Minneapolis, Minn. 845,879, pub. 11–7–67. Cl. 26.
Hoover Ball & Bearing Co., Saline, Mich. 845,868, pub. 12–26–67. Cl. 23.
Horton, Sidney, New York, to Dexter Bishop Co., Inc., Bronx, N.Y. 241,116, ren. 3–12–68. Cl. 46.
House of Vision, Inc., The, Chicago, Ill. 845,888, pub. 12–26–67. Cl. 26.
Hoyl Laboratories, Inc., Dallas, Tex. 846,010, pub. 12–26–67. Cl. 51.
Huntington Creek Corp., The, New York, N.Y. 845,999, pub. 12–26–67. Cl. 49.
Hydraulic Machinery Co., Butler, Wis. 845,863, pub. 12–26–67. Cl. 23.
Iaia, Joseph A., d.b.a. Aero-Stat Co., The, Los Angeles, Calif. 845,735, pub. 12–26–67. Cl. 13.
Illinois Tool Works Inc., Chicago, Ill. 845,929, pub. 12–26–67. Cl. 38.
Imperial Chemical Industries Ltd., Millbank, London, England. 845,763, pub. 12–26–67. Cl. 18.
Imperial Reading Corp., New York, N.Y. 845,940, pub. 12–26–67. Cl. 39.
Indian Head Inc. : *See*—
Linen Thread Co., Inc.
Inland Container Corp., Indianapolis, Ind. 845,672, pub. 12–26–67. Cl. 2.
Interchemical Corp., New York, N.Y. 845,748, pub. 12–26–67. Cl. 16.
Interchemical Corp., New York, N.Y. 845,752, pub. 12–26–67. Cl. 16.
International Paper Co., New York, N.Y. 846,057. Cl. 23.
international Rectifier Corp., El Segundo, Calif. 845,702, pub. 12–26–67. Cl. 6.
International Teaching Tapes, Inc., Tulsa, Okla. 845,913, pub. 12–26–67. Cl. 36.
International Vending Corp., Boston, Mass. 726,813, canc. Cl. 101.
Isaacs, I. C., & Co., Inc., Baltimore, Md. 846,064. Cl. 39.
Jackson, S., & Son, Inc., New Orleans, La. 845,687, pub. 12–26–67. Cl. 4.
Jerden Music, Inc., Seattle, Wash. 845,914, pub. 12–26–67. Cl. 36.
Jersey Tab Card Corp., Union, N.J. 726,752, canc. Cl. 38.
Johnson & Johnson, New Brunswick, N.J. 846,012, pub. 12–26–67. Cl. 51.
Johnson & Johnson, New Brunswick, N.J. 846,077. Cl. 51.
Johnson, S. C., & Son, Inc. : *See*—
Hardesty Chemical Co., Inc.
Johnson, S. C., & Son, Inc., Racine, Wis. 845,685–6, pub. 12–26–67. Cl. 4.
Jules Racine & Co., Inc., New York, N.Y. 726,726, canc. Cl. 27.
Juvenile Shoe Corp. of America, The, Aurora, Mo. 845,947, pub. 12–26–67. Cl. 39.
Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Osaka, Japan. 845,903, pub. 12–26–67. Cl. 29.
Kanegafuchi Spinning Co., Ltd. : *See*—
Kanegafuchi Boseki Kabushiki Kaisha.
Karoll's, Chicago, Ill. 845,943, pub. 12–26–67. Cl. 39.
Katz, Norman V., d.b.a. Delivery Service Co., Winston-Salem, N.C. 846,044, pub. 12–26–67. Cl. 105.
Kelsey-Hayes Co., Romulus, Mich. 845,788, pub. 12–26–67. Cl. 19.
Kentucky Fried Chicken Corp., Nashville, Tenn. 846,026, pub. 12–26–67. Cl. 100.
Kieffer Paper Mills, Inc. : *See*—
Kieffer Paper Mills.
Kieffer Paper Mills, Inc., to Kieffer Paper Mills, Brownstown, Ind. 242,611, ren. 3–12–68. Cl. 37.
Kimberly-Clark Corp., Neenah, Wis. 439,085, ren. 3–12–68. Cl. 37.
King Kullen Grocery Co., Inc., Westbury, N.Y. 845,988, pub. 12–26–67. Cl. 46.
Klenz-Aire, Inc., Louisville, Ky. 846,059. Cl. 34.
Knowlton Danderine Co., The, Chicago, Ill., to Sterling Drug Inc., New York, N.Y. 67,416, ren. 3–12–68. Cl. 51.
Kontes Glass Co., Vineland, N.J. 845,886, pub. 12–26–67. Cl. 26.
Kuhlmann, Ugine, Paris, France. 845,694–9, pub. 12–26–67. Cl. 6.
Kurashiki Rayon Co., Ltd., Kurashiki, Japan. 845,714, pub. 12–26–67. Cl. 7.
L & H Envelope Corp., New York, N.Y. 726,738, canc. Cl. 37.
Lake Shore Products, Inc., Chicago, Ill. 845,965, pub. 12–26–67. Cl. 46.
Lakeland Engineering Co. : *See*—
Benes Gordon J.
Lannett Co., Inc., The, Philadelphia, Pa. 845,767, pub. 12–26–67. Cl. 18.
Lawson Products, Inc., Pawtucket, R.I. 439,159, ren. 3–12–68. Cl. 39.
Lee, Simpson, Paper Co., Kalamazoo, Mich. 845,923, pub. 12–26–67. Cl. 37.
Levolor Lorentzen, Inc., Hoboken, N.J. 845,907, pub. 12–26–67. Cl. 32.
Lieberman, Joseph & Sons, Inc., Philadelphia, Pa. 845,902, pub. 12–26–67. Cl. 29.
Liggett & Myers Tobacco Co., New York, N.Y. 845,758, pub. 12–26–67. Cl. 17.
Liggett & Myers Tobacco Co., New York, N.Y. 845,761, pub. 12–26–67. Cl. 17.
Like Magic Products : *See*—
Acrilamp Lighting Corp.
Lilly, Eli, and Co., Indianapolis, Ind. 726,671, canc. Cl. 18.
Lilly, Eli, and Co., Indianapolis, Ind. 845,771, pub. 12–26–67. Cl. 18.
Linde Air Products Co., The, to Union Carbide Corp., New York, N.Y. 437,895, ren. 3–12–68. Cl. 34.
Linen Thread Co., Inc., The, to Indian Head Inc., New York, N.Y. 500,927, ren. 3–12–68. Cl. 43.
Lisanne, Inc., Brooklyn, N.Y. 845,949, pub. 12–26–67. Cl. 39.
Litton Business Systems, Inc., New York, N.Y., from Royal Typewriter Co., Inc., Greenwich, Conn. 845,895, pub. 12–26–67. Cl. 26.
London Chemical Co., Inc., Melrose Park, Ill. 845,911, pub. 12–26–67. Cl. 34.

London Products, Inc., New York, N.Y. 845,811, pub. 12–26–67. Cl. 21.
Lucas & Franczek, Inc., Chicago, Ill. 845,794, pub. 12–26–67. Cl. 21.
Macarr, Inc., Bronx, N.Y. 845,897, pub. 12–26–67. Cl. 26.
Madame Alexander: *See*—
Alexander Doll Co., Inc.
Mann, Lester, Ambler, Pa. 846,061. Cl. 38.
Manning, Martha, Co.: *See*—
Forest City Mfg. Co.
Maplecrest Sausage Co., Inc., Rochester, N.Y. 846,072. Cl. 46.
Maria's Cin Cin: *See*—
Bragalini, Maria.
Mar-O-Bar Co.: *See*—
Mars Inc.
Mars Inc., d.b.a. Mar-O-Bar Co., Minneapolis, Minn., to Mars, Inc., Chicago, Ill. 239,311, ren. 3–12–68. Cl. 46.
Mars Signal Light Co., Chicago, Ill. 845,815, pub. 12–26–67. Cl. 21.
Marx, Louis, & Co., Inc., New York, N.Y. 845,833, pub. 12–26–67. Cl. 22.
Marx, Louis, & Co., Inc., New York, N.Y. 845,842, pub. 12–26–67. Cl. 22
Mattel, Inc., Hawthorne, Calif. 845,849–53, pub. 12–26–67. Cl. 22.
Maxwell Royal Chair Co., Hickory, N.C. 845,905, pub. 12–26–67. Cl. 22.
Mayer, Oscar, & Co., Inc., Chicago, Ill. 845,983, pub. 12–26–67. Cl. 46.
Mayes Bros. Tool Mfg. Co., Johnson City, Tenn. 845,887, pub. 12–26–67. Cl. 26.
McCrory Corp.: *See*—
Best & Co. Inc.
McGregor-Doniger Inc., New York, N.Y. 845,952, pub. 12–26–67. Cl. 39.
McKesson Laboratories: *See*—
McKesson & Robbins, Inc.
McKesson & Robbins, Inc.: *See*—
Foremost-McKesson, Inc.
Mead Johnson & Co., Evansville, Ind. 845,781–4, pub. 12–26–67. Cl. 18.
Melville Shoe Corp., New York, N.Y. 845,950, pub. 12–26–67. Cl. 39.
Memphis Moldings, Inc., Memphis, Tenn. 845,719, pub. 12–26–67. Cl. 12.
Merriman, Inc., Hingham, Mass. 845,877, pub. 12–26–67. Cl. 23.
Metal Edge Industries, Barrington, N.J. 845,817, pub. 12–26–67. Cl. 21.
Metra Electronics Corp., Brooklyn, N.Y. 845,804, pub. 12–26–67. Cl. 21.
Metz, H. A., & Co., Inc., to I.G. Farbenindustrie Aktiengesellschaft, to General Aniline & Film Corp., New York, N.Y. 236,614, ren. 3–12–68. Cl. 6.
Michigan Wheel Co., Grand Rapids, Mich. 845,790–1, pub. 12–26–67. Cl. 19.
Midwest Gruel-Omatic Co., Grimes, Iowa. 845,867, pub. 12–26–67. Cl. 23.
Midwest Outerwear Mfg. Co., Port Washington, Wis. 845,944, pub. 12–26–67. Cl. 39.
Miles Laboratories, Inc., Elkhart, Ind. 845,690, pub. 12–26–67. Cl. 6.
Miller, Frank E., Portland, Oreg. 726,700, canc. Cl. 23.
Miller Publishing Co., The, Minneapolis, Minn. 845,927, pub. 12–26–67. Cl. 38.
Mining & Chemical Products Ltd., London, England. 845,819, pub. 12–26–67. Cl. 21.
Minnesota Mining and Mfg., Co., St. Paul, Minn. 845,821, pub. 12–26–67. Cl. 21.
Mr. Mod Shop, Inc., New Orleans, La. 845,825, pub. 12–26–67. Cl. 22.
Modern Aire Co., Des Moines, Iowa. 846,029, pub. 12–26–67. Multiple Class (Classes 100 and 103).
Monarch Rubber Co., The, Hartville, Ohio. 845,912, pub. 12–26–67. Cl. 35.
Monsanto Co., St. Louis, Mo. 845,977, pub. 12–26–67. Cl. 46.
Morgan Co., Oshkosh, Wis. 845,723, pub. 12–26–67. Cl. 12.
Morse Industries, Inc., Ozone Park, N.Y. 845,857, pub. 12–26–67. Cl. 23.
Morton International, Inc., Chicago, Ill. 845,706, pub. 12–26–67. Cl. 6.
Mutual Orange Distributors, to Pure Gold, Inc., Redlands, Calif. 238,607–8, ren. 3–12–68. Cl. 46.
Mutual Orange Distributors, to Pure Gold, Inc., Redlands, Calif. 239,869 ren. 3–12–68. Cl. 46.
N. V. Philips-Duphar, Amsterdam, Netherlands. 845,700, pub. 12–26–67. Cl. 6.
Nardin, Ulysse, Societe Anonyme, Manufacture De Montres Et De Chronometres, Le Locle, Switzerland. 846,058. Cl. 27.
National Life & Accident Insurance Co., The, Nashville, Tenn. 845,935–6, pub. 12–26–67. Cl. 38.
National Marine Service Inc., New York, N.Y. 726,817, canc. Cl. 105.
Needle Industries Ltd.: *See*—
Harper, Thos., & Sons Ltd.
Needle Industries Ltd., Birmingham, England. 845,862, pub. 12–26–67. Cl. 23.
Newhouse, J. L., & Son, Inc., New York, N.Y. 845,900, pub. 12–26–67. Cl. 28.
Nicholas International Ltd., Toronto, Ontario, Canada. 726,656, canc. Cl. 18.
Nicholl Brothers, Inc., Kansas City, Mo. 845,803, pub. 12–26–67. Cl. 21.
Norcross, Inc., New York, N.Y. 845,933, pub. 12–26–67. Cl. 38.
Nutter Engineering Co., Tulsa, Okla. 845,673, pub. 12–26–67. Multiple Class (Classes 2, 13, 100, and 101).
Odile de Paris, Ltd., New York, N.Y. 846,011, pub. 12–26–67. Cl. 51.
Ohio Corrugating Co., The, Warren, Ohio. 846,027, pub. 12–26–67. Cl. 100.
Old Pal, Inc., Lititz, Pa. 845,822, pub. 12–26–67. Cl. 22.
Olin Mathieson Chemical Corp., New York, N.Y. 726,678, canc. Cl. 18.
Olin Mathieson Chemical Corp., New York, N.Y. 845,956, pub. 12–26–67. Cl. 39.
Olin Mathieson Chemical Corp.: *See*—
Squibb, E. R., & Sons, Inc.
Opici, L. M., Inc., Hawthorne, N.J. 845,991, pub. 12–26–67. Cl. 47.
Oppenheimer Industries, Inc., Kansas City, Mo. 846,037, pub. 12–26–67. Multiple Class (Classes 101 and 102).
Organic Compost Corp., Germantown, Wis. 845,717, pub. 12–26–67. Cl. 10.
Orkin Exterminating Co., Inc.: *See*—
Arwell Products Co.
Orrell's Food Products, Inc., Oakland, Calif. 845,975, pub. 12–26–67. Cl. 46.
Owatonna Tool Co., Owatonna, Minn. 237,653, ren. 3–12–68. Cl. 23.
Pacific Vegetable Oil Corp., San Francisco, Calif. 845,665, pub. 12–26–67. Cl. 1.
Packaging Corp. of America, Evanston, Ill. 845,682, pub. 12–26–67. Cl. 2.
Pak Well Paper Products Co., Portland, Ore. 726,829, canc. Cl. 37.
Pan-American Laboratories, Inc., Angola, Ind. 726,646, canc. Cl. 15.
Park & Tilford, New York, N.Y. 726,797, canc. Cl. 51.
Parr Paint and Sealants Inc., Cleveland, Ohio. 845,724, pub. 12–26–67. Cl. 12.
Pastene & Co., Inc.: *See*—
Pastene, P., & Co.
Pastene, P., & Co., Boston, Mass., to Pastene & Co., Inc. New York, N.Y. 67,272, ren. 3–12–68. Cl. 46.
Patten, Lee, Seed Co., Jersey City, N.J. 726,785, canc. Cl. 46.
Paula Shops, The: *See*—
Deal, Paul E.
Paulson, Homer D., Kent, Wash. 845,828, pub. 12–26–67. Cl. 22.
Peacock, Reginald T., Groville, Calif. 845,890, pub. 12–26–67. Cl. 26.
Peltzer & Ehlers Komandit Gesellschaft German Co., Bogenstrasse, Krefeld, Germany. 845,854, pub. 1–23–61. Cl. 23.
Permalux Co., The, Aurora, Ill. 845,749, pub. 12–26–67. Cl. 16.
Permroco Corp., Memphis, Tenn. 845,730, pub. 12–26–67. Cl. 13.
Peters & Russell Inc., Springfield, Ohio. 845,855, pub. 12–26–67. Cl. 23.
Pfizer, Chas., & Co., Inc.: *See*—
Primrose House, Inc.
Pfizer, Chas., & Co., Inc., New York, N.Y. 845,708, pub. 12–26–67. Cl. 6.
Pfleager Corp., Akron, Ohio. 845,834–5, pub. 12–26–67. Cl. 22.
Phillips Petroleum Co., Bartlesville, Okla. 846,060. Cl. 37.
Pierce Pre-Cooked Foods, Inc., Moorefield, W. Va. 846,068. Cl. 46.
Pierce & Stevens Chemical Corp.: *See*—
Pierce & Stevens, Inc.
Pierce & Stevens, Inc., to Pierce & Stevens Chemical Corp., Buffalo, N.Y. 435,898, ren. 3–12–68. Cl. 16.
Pioneer Centrifuging Co., Ltd., Houston, Tex. 845,875, pub. 12–26–67. Cl. 23.
Pioneer Fund, Inc., Boston, Mass. 846,040, pub. 12–26–67. Cl. 102.
Pittsburgh National Bank, National Bank Association, Pittsburgh, Pa. 845,916, pub. 12–26–67. Cl. 37.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 845,670, pub. 12–26–67. Cl. 1.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 845,909, pub. 12–26–67. Cl. 33.
Plee Zing Inc., Chicago, to Plee-Zing, Inc., Evanston, Ill. 438,222 ren. 3–12–68. Cl. 6.
Poster Dresses Ltd., London, England. 845,957, pub. 12–26–67. Cl. 39.
Potomac Engineering Corp., Chicago, Ill. 846,055. Cl. 22.
Poul-An Laboratories, Inc., Kansas City, Mo. 726,657, canc. Cl. 18.
Power Cleaning Supply Co., Rockford, Ill. 845,864, pub. 12–26–67. Cl. 23.
Premiere Motels, Inc., New York, N.Y. 726,807, canc. Cl. 100.
Pressman Toy Corp., New York, N.Y. 845,843, pub. 12–26–67. Cl. 22.
Primrose House, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 433,443, ren. 3–12–68. Cl. 51.
Proctor, Douglas B. I., Warsash, England. 845,789, pub. 12–26–67. Cl. 19.
Production & Marketing Co., Ltd., Newtown, Conn. 845,827, pub. 12–26–67. Cl. 22.
Professional Pharmacal Co., Inc., San Antonio, Tex. 845,777, pub. 12–26–67. Cl. 18.
Pro-Phy-Lac-Tic Brush Co., Florence, Mass. 845,666, pub. 12–26–67. Cl. 1.
Pro-Phy-Lac-Tic Brush Co., Florence, Mass. 845,671, pub. 12–26–67. Cl. 2.
Pure Gold, Inc.: *See*—
Mutual Orange Distributors.
Purepac Corp., Elizabeth, N.J. 845,776, pub. 12–26–67. Cl. 18.
Pyland, Jack W., Dallas, Tex. 726,694, canc. Cl. 23.
Quaker State Oil Refining Corp., Oil City, Pa. 845,745, pub. 12–26–67. Cl. 15.
Radiator Specialty Co., Charlotte, N.C. 846,051. Cl. 15.
Radio Optical Research Co.: *See*—
Walker, Joseph B.

Radio Shack Corp.: *See*—
Tandy Corp.
Ralston Purina Co.: *See*—
Van Camp Sea Food Co., Inc.
Ralston Purina Co., St. Louis, Mo. 845,968, pub. 12–26–67. Cl. 46.
Ralston Purina Co., St. Louis, Mo. 845,973, pub. 12–26–67. Cl. 46.
Ramada Inns, Inc., Phoenix, Ariz. 845,995, pub. 12–26–67. Cl. 49.
Ramada Inns, Inc., Phoenix, Ariz. 846,028, pub. 12–26–67. Cl. 100.
Realistic Co., The, Cincinnati, Ohio. 846,007, pub. 10–25–60. Cl. 51.
Redken Laboratories, Inc., Van Nuys, Calif. 846,015, pub. 12–26–67. Cl. 51.
Regal Dental Corp., North Massapequa, N.Y. 845,960, pub. 12–26–67. Cl. 44.
Regina Grape Products Co., Etiwanda, Calif. 846,074. Cl. 46.
Reid Laboratories, Inc., Atlanta, Ga. 726,826, canc. Cl. 18.
Republic Steel Corp., Cleveland, Ohio. 845,731, pub. 12–26–67. Cl. 13.
Restorz Products, Inc., Prospect, Conn. 726,649, canc. Cl. 16.
Rite-Way Coatings Co., Addison, Ill. 845,746, pub. 12–26–67. Cl. 16.
Ritter Pfaudler Corp., Rochester, N.Y. 845,962, pub. 12–26–67. Cl. 44.
Robin, A. H., Co., Inc., Richmond, Va. 845,779, pub. 12–26–67. Cl. 18.
Robinson Metals Co., Inc., West Boylston, Mass. 845,906, pub. 12–26–67. Cl. 32.
Rochester Mfg. Co., Inc., Rochester, to American Standard Inc., New York, N.Y. 434,919, ren. 3–12–68. Cl. 26.
Rollins: *See*—
Bischoff, Robert R.
Ro-Mel Mfg. Jewelers: *See*—
Hoffenberg, Abe.
Romper Room, Inc., Baltimore, Md. 845,823, pub. 12–26–67. Cl. 22.
Royal Typewriter Co., Inc.: *See*—
Litton Business Systems, Inc.
Rubberset Co., East Newark, N.J. 845,901, pub. 12–26–67. Cl. 29.
Rubicon Chemicals Inc., Geismar, La. 845,693, pub. 12–26–67. Cl. 6.
Rutherford, Abbie C., Irving, Tex. 845,945, pub. 12–26–67. Cl. 39.
Ryan, William T., d.b.a. William T. Ryan Publishing Co., Chicago, Ill. 845,932, pub. 12–26–67. Cl. 38.
Ryan, William T., Publishing Co.: *See*—
Ryan, William T.
S.C.S. Club, Inc., Chicago, Ill. 726,670, canc. Cl. 18.
Saks & Co., New York, N.Y. 435,654, ren. 3–12–68. Cl. 39.
Saks & Co., New York, N.Y. 437,251, ren. 3–12–68. Cl. 39.
Saks & Co., New York, N.Y. 437,690, ren. 3–12–68. Cl. 39.
Salada Foods Ltd., Don Mills, Ontario, Canada. 845,967, pub. 12–26–67. Cl. 46.
Sallerno, Vincent, to Victory Optical Mfg. Co., Newark, N.J. 435,864, ren. 3–12–68. Cl. 26.
San Jose Canning Co., San Jose, Calif. 726,787, canc. Cl. 46.
Saunda, Inc., from Health Products, Inc., Chicago, Ill. 845,961, pub. 12–26–67. Multiple Class (Classes 44 and 51).
Scanbe Mfg. Corp., Monterey Park, Calif. 845,812, pub. 12–26–67. Cl. 21.
Schenley Industries, Inc., New York, N.Y. 845,994, pub. 12–26–67. Cl. 47.
Schenley Industries, Inc., New York, N.Y. 845,996, pub. 12–26–67. Cl. 49.
Schering Corp., Bloomfield, N.J. 726,668, canc. Cl. 18.
Schwarz, Earl G., New York, N.Y. 726,795, canc. Cl. 51.
Scripto, Inc., Atlanta, Ga. 845,715, pub. 12–26–67. Cl. 8.
Sea & Ski Corp., San Francisco, Calif. 845,676, pub. 12–26–67. Cl. 2.
Sea-Air Chemical Corp., Long Island City, N.Y. 846,018–19, pub. 12–26–67. Cl. 52.
Seagram, Joseph E., & Sons, Inc., New York, N.Y. 845,998, pub. 12–26–67. Cl. 49.
Seagram, Joseph E., & Sons, Inc., New York, N.Y. 846,000, pub. 12–26–67. Cl. 49.
Seagrave Corp., The, New York, N.Y. 845,798, pub. 12–26–67. Cl. 21.
Sears, Roebuck and Co., Chicago, Ill. 845,809, pub. 12–26–67. Cl. 21.
Selcraft Products Co.: *See*—
Selsky, Albert.
Selsky, Albert, d.b.a. Selcraft Products Co., Brooklyn, N.Y. 726,790–2, canc. Cl. 50.
Shendo Corp., Boston, Mass. 846,039, pub. 12–26–67. Cl. 101.
Siemag Feinmechanische Werke G.m.b.H., Eiserfeld/Sieg, Germany. 726,713–14, canc. Cl. 26.
Signatron, Inc., Lexington, Mass. 846,025, pub. 12–26–67. Cl. 100.
Silver Creek Precision Corp., Buffalo, N.Y. 434,193, ren. 3–12–68. Cl. 23.
Simco Co., Inc., The, Lansdale, Pa. 845,810, pub. 12–26–67. Cl. 21.
Siris, A. J., Products Corp., New York, N.Y. 726,737, canc. Cl. 37.
Slant/Fin Corp., Greenvale, N.Y. 845,733, pub. 12–26–67. Cl. 13.
Smith, George P., Cincinnati, Ohio. 846,031, pub. 12–26–67. Cl. 100.
Societe Anonyme Dite: Nobel-Bozel, Paris, France. 726,622, canc. Cl. 6.
Societe des Usines Chimiques Rhone-Poulenc, Paris, France. 845,772, pub. 12–26–67. Cl. 18.
Societe d'Exploitation des Laboratoires Jacques Logeais, Seine, France. 726,655, canc. Cl. 18.
Soil Mover Mfg. Corp., The, Columbus, Nebr. 845,856, pub. 12–26–67. Cl. 23.
Soreghen, George L., d.b.a. Diamond Whip Co., Chicago, Ill. 845,713, pub. 12–26–67. Cl. 7.
Southern Saw Service, Inc., Atlanta, Ga. 845,872, pub. 12–26–67. Cl. 23.
Southwest Grease & Oil Co. (Kansas City), Inc., Kansas City, Mo. 846,050. Cl. 15.
Special Telephone Service, Inc., Harlingen, Tex. 846,035–36, pub. 12–26–67. Cl. 101.
Spiegel Neckwear Co., Inc., New York, N.Y. 726,755, canc. Cl. 39.
Spot-O-Gold Corp., Philadelphia, Pa. 845,938, pub. 12–26–67. Cl. 38.
Squibb, E. R., & Sons, Inc., from Olin Mathieson Chemical Corp., New York, N.Y. 846,006, pub. 12–26–67. Cl. 51.
Standard Pressed Steel Co., Jenkintown, Pa. 726,824, canc. Cl. 13.
Steinmetz Bros., Inc., New York, N.Y. 845,939, pub. 12–26–67. Cl. 39.
Sterling Drug Inc.: *See*—
Farbenfabriken of Elberfeld Co.
The Knowlton Danderine Co.
Winthrop Chemical Co., Inc.
Stewart-Warner Corp., Chicago, Ill. 845,880, pub. 12–26–67. Cl. 26.
Stough, Robert A., d.b.a. Robert A. Stough & Co., Chicago, Ill. 845,882, pub. 12–26–67. Cl. 26.
Stough, Robert A., & Co.: *See*—
Stough, Robert A.
Sumitomo Chemical Co., Ltd., Higashi-ku, Osaka, Japan. 845,689, pub. 12–26–67. Cl. 6.
Sunday School Times Foundation, The, Philadelphia, Pa. 845,931, pub. 12–26–67. Cl. 38.
Sundstrand Corp., Rockford, Ill. 845,874, pub. 12–26–67. Cl. 23.
Svenska Cellulosa Aktiebolaget, Sundsvall, Sweden. 433,388, ren. 3–12–68. Cl. 12.
Szwagier, Bernard, Paris, France. 845,946, pub. 12–26–67. Cl. 39.
T.F.H. Publications, Inc., Jersey City, N.J. 845,972, pub. 12–26–67. Cl. 46.
Tamayo Bros.: *See*—
Tamayo, J. Mario, and Brothers.
Tamayo, J. Mario, and Brothers, d.b.a. Tamayo Bros., Sinaloa, Mexico. 845,987, pub. 12–26–67. Cl. 46.
Tandy Corp., Fort Worth, Tex., from Radio Shack Corp., Boston, Mass. 845,805–6, pub. 12–26–67. Cl. 21.
Television Manufacturers of America Co., Wheeling, Ill. 845,816, pub. 12–26–67. Cl. 21.
Television Manufacturers of America Co., Wheeling, Ill. 845,818, pub. 12–26–67. Cl. 21.
Telsco Industries, Dallas, Tex. 845,727, pub. 12–26–67. Cl. 13.
Tenneco Chemicals, Inc., New York, N.Y. 845,692, pub. 12–26–67. Cl. 6.
Teweles, L., Seed Co., Milwaukee, Wis. 726,629–30, canc. Cl. 6.
Textron Industries, Inc., Orange, N.Y. 845,750, pub. 12–26–67. Cl. 16.
Thomson Industries, Inc., Manhasset, N.Y. 845,865, pub. 12–26–67. Cl. 23.
Time Saving Specialties: *See*—
Chadbourn Finance Co.
Tompkins' Label Service, Philadelphia, Pa. 845,930, pub. 12–26–67. Cl. 38.
Toney Penna Co., The, Jupiter, Fla. 845,848, pub. 12–26–67. Cl. 22.
Trans-Meridian International, Inc., Washington, D.C. 845,896, pub. 12–26–67. Cl. 26.
Trauner, Edward, Inc., New York, N.Y. 845,898, pub. 12–26–67. Cl. 27.
Triangle Business Machines, Inc., Los Angeles, Calif. 726,733, canc. Cl. 37.
True Temper Corp.: *See*—
The American Fork & Hoe Co.
Tubbs Cordage Co., San Francisco, Calif. 845,711–12, pub. 12–26–67. Cl. 7.
Tudor Metal Products Corp., Brooklyn, N.Y. 846,056. Cl. 22.
Uhe, Clyde, d.b.a. Clyde Body Co., Papillion, Nebr. 845,793, pub. 12–26–67. Cl. 19.
Uncle Ben's, Inc.: *See*—
Converted Rice, Inc.
Converted Rice.
Union Carbide Corp.: *See*—
Carbide and Carbon Chemicals Corp.
Linde Air Products Co., The.
Union Carbide Corp., New York, N.Y. 726,831, canc. Cl. 38.
Union Carbide Corp., New York, N.Y. 846,024, pub. 12–26–67. Cl. 52.
Uniroyal, Inc.: *See*—
United States Rubber Co.
Uni-Tech Chemical Mfg. Co., Sun Valley, Calif. 846,049. Cl. 6.
United States Gypsum Co., to United States Gypsum Co., Chicago, Ill. 436,608, ren. 3–12–68. Cl. 12.
U.S. Paint Lacquer and Chemical Co., St. Louis, Mo. 845,751, pub. 12–26–67. Cl. 16.
United States Rubber Co., to Uniroyal, Inc., New York, N.Y. 238,838, ren. 3–12–68. Cl. 13.
U.S. Vitamin & Pharmaceutical Corp., New York, N.Y. 726,663, canc. Cl. 18.
Vac Pac, Inc., Baltimore, Md. 845,681, pub. 12–26–67. Cl. 2.
Van Camp Sea Food Co., Inc., East San Pedro, Calif., to Ralston Purina Co., St. Louis, Mo. 238,264, ren. 3–12–68. Cl. 46.

Varley, James, & Sons, Inc., St. Louis, Mo. 726,628, canc. Cl. 6.
Vasek & Kovar Potato Co., East Grand Forks, Minn. 845,974, pub. 12–26–67. Cl. 46.
Venus Pen & Pencil Corp.: *See*—
American Lead Pencil Co.
Veterans of Foreign Wars National Home, Eaton Rapids, Mich. 846,030, pub. 12–26–67. Cl. 100.
Victory Optical Mfg. Co.: *See*—
Salerno, Vincent.
Walker, Joseph B., d.b.a. Radio Optical Research Co., West Hollywood, Calif. 845,884, pub. 12–26–67. Cl. 26.
Warwick & Legler, Inc., New York, N.Y. 726,814, canc. Cl. 101.
West Virginia Pulp & Paper Co., New York, N.Y. 845,919, pub. 12–26–67. Cl. 37.
Western Grape Products, Kingsburg, Calif. 845,992, pub. 12–26–67. Cl. 47.
Wetherill, Geo. D., & Co., Inc., Philadelphia, Pa. 237,545, ren. 3–12–68. Cl. 16.
Wheaton, A. W., Brass Works, Inc., Newark, to Wheaton, Inc., Union, N.J. 239,043, ren. 3–12–68. Cl. 13.
Wheaton, Inc.: *See*—
Wheaton, A. W., Brass Works, Inc.
Williams, H. Bruce, Houston, Tex. 845,801, pub. 12–26–67. Cl. 21.
Williams Products Corp., Ypsilanti, Mich. 726,698, canc. Cl. 23.
Wilson Sporting Goods Co., from Wilson Sporting Goods Co., River Grove, Ill. 845,832, pub. 12–26–67. Cl. 22.
Wilson, Walton International Inc., Hoboken, N.J. 845,747, pub. 12–26–67. Cl. 16.
Winthrop Chemical Co., Inc., to Winthrop-Stearns Inc., to Sterling Drug Inc., New York, N.Y. 435,994, ren. 3–12–68. Cl. 18.
Winthrop Laboratories: *See*—
Farbenfabriken of Elberfeld Co.
Witco Chemical Co., Inc., New York, N.Y. 845,742, pub. 12–26–67. Cl. 15.
Welch's Nut & Candy Co., Chicago, Ill. 846,070–1. Cl. 46.
Wolf & Vine, Inc., Los Angeles, Calif. 846,003, pub. 12–26–67. Cl. 50.
World Wide Baraca and Philathea Union, Mount Vernon, Va. 726,746–7, canc. Cl. 38.
Worley Publishing Co., Inc., New York, N.Y. 726,751, canc. Cl. 38.
Wuster & Co.: *See*—
Wuster, Eugen.
Wuster, Eugen, d.b.a. Wuster & Co., Erlauf, Austria. 726,645, canc. Cl. 14.
Wyandotte Chemicals Corp., Wyandotte, Mich. 436,751, ren. 3–12–68. Cl. 6.
Yaou Denki Kabushiki Kaisha, Kanagawa-ken, Japan. 845,795, pub. 12–26–67. Cl. 21.
Yardley of London, Inc., Totowa, N.J. 846,005, pub. 12–26–67. Cl. 51.
Yuen, Kun H., d.b.a. Kun Wing Fook Medicine Co., Hong Kong. 845,780, pub. 12–26–67. Cl. 18.
Zip-Up Lighting Tower Co., Inc., Rock Hill, S.C. 846,001, pub. 12–26–67. Cl. 50.

U.S. GOVERNMENT PRINTING OFFICE: 0—1968

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
March 19, 1968 Volume 848 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of February 1968

Examiner affirmed	147
Examiner affirmed in part	20
Examiner reversed	44
Total	211

DEPARTMENT OF THE TREASURY
Bureau of Customs

[T.D. 68–55]

HARMAL CORPORATION

Notice of Recordation of Trade Name

On December 15, 1967, there was published in the Federal Register (32 F.R. 17985) a notice of application for the recordation under section 42 of the Act of July 5, 1946, as amended (15 U.S.C. 1124) of the trade name HARMAL CORPORATION used by Harmal Corporation, an Illinois corporation, and Ball Machinery Company, an Illinois corporation. The notice advised that prior to final action on the application, filed pursuant to section 11.16, Customs Regulations (19 CFR 11.16), consideration would be given to relevant data, views, or arguments submitted in opposition to the recordation and received not later than 30 days from the date of publication of the notice. No responses were received in opposition to the application.

The name "HARMAL CORPORATION" is hereby recorded as the trade name of Harmal Corporation, a corporation organized under the laws of the State of Illinois, located at 939 West Lake Street, Chicago, Illinois, and Ball Machinery Company, an Illinois corporation, located at 939 West Lake Street, Chicago, Illinois, when applied to metal working machine tools, manufactured in Italy.

EDWIN F. RAINS,
Feb. 9, 1968. *Acting Commissioner of Customs.*

Disclaimers and Dedications

2,981,185.—*Blake M. Caldwell*, Fort Worth, Tex. WELL PERFORATING APPARATUS. Patent dated Apr. 25, 1961. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Jet Research Center, Inc.*

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,986,089.—*Lorrain D. Meddick*, Whittier, Calif. DEBRIS-FREE PERFORATING GUN. Patent dated May 30, 1961. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation.*

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,990,773.—*Lester W. Toelke*, Houston, Tex. APPARATUS FOR PERFORATING WELL CASING. Patent dated July 4, 1961. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation.*

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

2,994,269.—*Marcel Schlumberger*, Paris, France, LIQUID-RESPONSIVE EXPLOSIVE CHARGE FIRING SYSTEM DISABLER. Patent dated Aug. 1, 1961. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation.*

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,053,182.—*Glenn B. Christopher*, Arlington, Tex. APPARATUS FOR CUTTING SECTIONS FROM WELL CASINGS. Patent dated Sept. 11, 1962. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Jet Research Center, Inc.*

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,057,295.—*Glenn B. Christopher*, Fort Worth, Tex. APPARATUS FOR CUTTING OIL WELL TUBING AND THE LIKE. Patent dated Oct. 9, 1962. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Jet Research Center, Inc.*

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,057,297.—*Jack E. Brown*, Houston, Tex. JET PERFORATING GUN. Patent dated Oct. 9, 1962. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company.*

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,058,058.—*Thomas C. Poulter, David E. Brink*, and *Paul E. Seaward*, Palo Alto, Calif. MAGNETIC CONCENTRICITY GAGE. Patent dated Oct. 9, 1962. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Jet Research Center, Inc.*

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

New Applications Received During January 1968

Patents	7337
Designs	391
Plant Patents	5
Reissues	33
Total	7776

Issue—March 19, 1968

Patents	1044	No. 3,373,443 to No. 3,374,486, incl.
Designs	57	No. 210,510 to No. 210,566, incl.
Total	1101	

3,063,372.—*Joe B. Diebold*, Arlington, Tex. APPARATUS FOR PERFORATING WELLS. Patent dated Nov. 13, 1962. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Jet Research Center, Inc.*

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,067,678.—*Blake M. Caldwell* and *Joe P. Wier*, Fort Worth, Tex. TILTING CHARGE WELL PERFORATING ASSEMBLY. Patent dated Dec. 11, 1962. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JANUARY 15, 1968

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-28-64	6-28-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	11-27-64	7-23-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	3-22-65	5-15-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	12-30-64	7-12-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	6- 1-64	9-26-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5- 4-65	9-12-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	2- 5-65	8-19-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	6-25-64	6- 1-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	9- 2-64	3-14-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	4-14-65	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	1- 9-67	11-15-67

Total number of pending applications (excluding Designs)	175, 238
Total number of Design applications pending	3, 722
Total number of applications awaiting action (excluding Designs)	124, 993
Total number of Design applications awaiting action	1, 562
Date of oldest new application awaiting action	June 1, 1964
Date of oldest amended application awaiting action	March 14, 1962

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during March 1968, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1968*.

Patents	Numbers 2,543,744 to 2,546,957, inclusive
Plant Patents	Numbers 1,007 to 1,009, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	10- 3-66	11-23-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks.	4- 1-66	3-27-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	8- 6-65	5-14-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	8- 8-66	4-26-65
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-11-66	1-16-64
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	10-23-65	4-19-63

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE DONALD L. ELBERT, JAMES G. SIMS, AND GERALD W. SOVEREIGN

No. 7706. Decided March 9, 1967

[54 CCPA—; 373 F.2d 534; 152 USPQ 805]

1. PATENTABILITY—OBVIOUSNESS.

"Concededly no reference expressly describes the use of catenary arcs to join the sides of a multi-branched orifice [for melt spinning polymer filaments]. Appellants do concede that the catenary curve which joins the branches of their orifice 'would differ from other curved surfaces—for example, circular—by only an extremely difficultly measurable and minute amount,' and that 'an artisan might experimentally vary the shape of the orifice by providing arced portions of differing shape.' Appellants have presented no evidence or argument which convinces us that the catenary arc employed by them to connect branches of the orifice is significant or critical, or is anything more than one of numerous curves a person of ordinary skill in the art would find obvious for that purpose, ultimately to provide filaments having cross sections resembling polygons."

2. SAME—PARTICULAR SUBJECT MATTER—"TEXTILE FILAMENTS AND SPINNERETS FOR THEIR PRODUCTION."

The refusal of certain claims in an application entitled "Textile Filaments and Spinnerets for Their Production," as unpatentable over the prior art, is affirmed.

AFFIRMED.

Roger Hansel, *John H. Lewis, Jr.*, *Ellsworth H. Mosher* (*Stanley M. Tarter*, of counsel) for appellants.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

The sole issue here is whether the Board of Appeals committed reversible error in affirming the Examiner's rejection of claims 8–17 in appellants' application,[2] entitled "Textile Filaments and Spinnerets for Their Production," as "unpatentable" over certain prior art under 35 U.S.C. 103. Our review of the record with due regard for appellants' arguments satisfies us that no such error appears.

The invention relates to a spinneret plate to be used in the melt spinning of textile filaments. Melt spinning involves forcing melted polymer under pressure through tiny holes, or orifices, in a spinneret plate. Even though the extrusion orifices be non-circular in cross section, surface tension forces tend to draw the molten streams emerging from the outlet side of the plate into a circular cross section before it can solidify to form continuous filaments. The feature of appellants' spinneret plate which is asserted to be nonobvious is that the extrusion orifices thereof are bounded in part by arcs of a catenary.[3] Ideally, the filaments produced from appellants' spinneret plate exhibit an exact polygonal cross section, viz, triangular or pentagonal. As a practical matter, a filament of "trigonal" cross section produced by appellants has slightly convex sides and rounded or blunted apexes, while a "pen-

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No 147,770, filed October 26, 1961.

tagonal" filament has concave sides and rounded apexes. As a result of its plurality of longitudinal facets and the concomitant opportunity for internal reflection, the filament possesses high luster, brilliance and sparkle.

The subject matter is reflected in claim 8:

8. A spinneret plate for use in melt spinning filaments exhibiting a substantially polygonal cross section of at least three sides comprising a solid plate having a melt face and an extrusion face and having at least one orifice extending between said faces to provide a passageway for molten polymer, said orifice defined by a bounding wall having a form at the extrusion face determined by at least three inwardly projecting lines assuming at their closest approach to the center of said orifice the curve of catenary arcs.

The references are:

Hazell, 1,902,956, March 28, 1933.
Holland, 2,939,202, June 7, 1960.
British patent, 779,822, July 24, 1957.
Italian patent, 546,143, July 12, 1956.

Hazell observed that surface tension tends to cause an extruded filament to draw into a circular cross section configuration in wet spinning processes. To counteract that tendency, Hazell employs spinneret orifies (FIG. 1) having "outwardly concave sides" and "cusped corners" to produce "filaments having cross sections the boundaries of which

Fig. 1.

are straight lines," such as "triangles," squares or "polygons." The "use of longer cusps and more deeply concaved sides" produces filaments having "small cusps and somewhat concave sides." The patentee observed that various factors in addition to the shape of the spinneret orifice determine the cross section of the fiber produced, among which are the pressure on the polymer material and the rate at which the material is withdrawn from the face of the spinneret.

Holland employs a spinneret plate having orifices generally resembling a triangle (with rounded corners and arcuately indented sides consisting of arcs of circles) to produce a trilobal filament having convex sides, rounded apexes and high luster.

British discloses the use of branched orifices "consisting of a plurality of narrow elongated slots of equal length radiating from a common central aperture" for melt spinning non-circular filaments. Ac-

[3] The term "catenary" defines a curved line of certain characteristics, just as the term "circle" does. The Solicitor's brief points out:

> • • • Webster's New Collegiate Dictionary defines • • • [catenary] as "The shape assumed by a perfectly flexible cord in equilibrium under given forces . . . exemplified in a chain or heavy cord hanging freely between two points of support." It is evident from this example that a whole family of catenaries may be suspended from the same two points of support, depending on the length of cord. • • •

In the orifice shown in appellants' FIG. 1, Numerals 2, 3 and 4 denote the catenary arcs

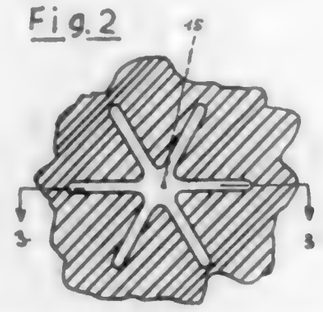
FIG. 1.

joining the sides of the three slots or legs.

cording to British, "The sides of the re-entrant angles forming the indentations [between branches] may be straight or curved or have the form of a sickle or any other shape, as required for different purposes." The pentagonal filament produced, as illustrated in the reference, appears to have concave sides and rounded apexes.

Italian employs spinnerets in which the orifices are "preferably branched, more particularly stellate" to offset the tendency of the filament to assume a circular cross section. The adjacent branches of the orifice appear joined by a curve resembling a circular arc (FIG. 2).

Fig. 2



Like Hazell, the Holland, British and Italian patents all recognize that filament shape is a function of process conditions as well as orifice shape.

The Board agreed with the Examiner's application of the references to the appealed claims, stating:

> • • • the slight change in design in appellants' spinneret as compared with those of the references would be obvious to one having ordinary skill and knowledge in this art. There is no evidence in this record by way of a proper side by side comparison wherein the only variable is the spinneret shape demonstrating the claimed spinneret, including catenary arcs, to exhibit different and unexpected properties from those of the reference spinnerets.

[1] Concededly no reference expressly describes the use of catenary arcs to join the sides of a multi-branched orifice. Appellants do concede that the catenary curve which joins the branches of their orifice "would differ from other curved surfaces—for example, circular—by only an extremely difficultly measurable and minute amount," and that "an artisan might experimentally vary the shape of the orifice by providing arced portions of differing shape." Appellants have presented no evidence or argument which convinces us that the catenary arc employed by them to connect branches of the orifice is significant or critical, or is anything more than one of numerous curves a person of ordinary skill in the art would find obvious for that purpose, ultimately to provide filaments having cross sections resembling polygons.

[2] The decision is affirmed.

AFFIRMED.

SMITH, *J.*, concurring.

The record shows that the Board of Appeals here consisted of an examiner-in-chief and two acting examiners-in-chief. Appellants do not challenge the legality of that Board. For the reasons expressed in my dissenting opinion in *In re Wiechert*, 54 CCPA —, — F.2d —, 152 USPQ 247, the decision of such a Board in my view is a legal nullity. However, I must accept the majority's view on this issue in the *Wiechert* case, i.e., the legality of the Board is not an issue here. I therefore participate in the merits of this appeal and in so doing, agree with the conclusion of the majority.

U.S. Court of Customs and Patent Appeals

IN RE EDGAR G. HEYL

No. 7881. Decided June 29, 1967

[54 CCPA —; 379 F.2d 1018; 154 USPQ 178]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—TERMINAL DISCLAIMER FILED AFTER DECISION BY BOARD OF APPEALS—*In re Tanner* AND *In re Dunn* DISTINGUISHED.

"Appellant argues that the Board's refusal to consider his terminal disclaimer deliberately flouts this court's direction in *In re Tanner*, 52 CCPA 1307, 343 F.2d 1018, 145 USPQ 345 (1965), a decision several months earlier than the Board's refusal here. We do not agree. We remanded that case to the Board to consider the effect of a terminal disclaimer filed after appeal in the light of *decisions of this court clarifying the law subsequent to the Board's action.* Those same decisions were several months prior to the Board decision here. See also *In re Dunn*, 52 CCPA 1760, 349 F.2d 433, 146 USPQ 479 (1965). We, of course, did not mean by those exceptional actions, taken in the interest of justice, to preclude the establishment of orderly procedures for the consideration of terminal disclaimers in the Patent Office. We interpret the Board's decision in this case as a refusal to consider the effect of the disclaimer because of its untimely submission. It does not appear that any of our later decisions would affect the propriety of that refusal. We, therefore, will not disturb it. Cf. *In re Pantzer*, 52 CCPA 1135, 341 F.2d 121, 144 USPQ 415 (1965); *In re Harris*, 51 CCPA 786, 324 F.2d 316, 139 USPQ 292 (1963). We therefore decide the case on the basis that there is no terminal disclaimer for our consideration."

2. SAME—SAME.

"The Solicitor's argument for the unpatentability of these claims seems to us no more than an ill-disguised rejection for lack of support, quite distinct from that for double patenting made below. We decline to consider it. *In re Baird*, 52 CCPA 1747, 348 F.2d 974, 146 USPQ 579 (1965); *In re Sutherland*, 52 CCPA 1683, 347 F.2d 1009, 146 USPQ 485 (1965)."

3. PATENTABILITY—DOUBLE PATENTING—OBVIOUS VARIATIONS.

"Appellant relies primarily on the limitation in the Dreyfus et al. claims to the effect that 'a band' (of indeterminate width) of the skirt must be heated. He argues that his claims require the *entire* skirt to be heated and are thus patentably distinct from those of the patent. He recognizes, as he must, that his claims are not so limited in terms. He attempts, however, to read into them the limitations of his examples. Inasmuch as there is no terminal disclaimer before us, we do not feel that it is necessary to decide whether this effort is successful. It seems to us, as it did to the Examiner, that even if the claims here in question define separate inventions by reason of the reading in of the example limitations, one is no more than an obvious variant of the other. In such a case, of course, the double patenting rejection is good. *In re Zickendraht*, 50 CCPA 1529, 319 F.2d 225, 138 USPQ 22 (1963); see *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485 (1964); *In re Kaye*, 51 CCPA 1485, 332 F.2d 816, 141 USPQ 829 (1964)."

4. SAME—SAME—SAME.

"Appellant does urge [in enlisting a double patenting rejection] that unobviousness is imparted by the specification of two-ply laminate in claim 32 and of polyethylene terephthalate in claims 44 and 45 and, even, by the specification of a pressure-containing beverage in claim 45 and the heating of the contents of the container specified in claims 44 and 45. We cannot agree. Limitations of the invention of the patent claims to use in a conventional way or with plastic material of admittedly known desirable qualities are not unobvious limitations. Nor could we ignore, on the mere contrary assertion of appellant, the Examiner's persuasive statement that the laminate might obviously be substituted for the film of a single layer."

5. SAME—PRODUCT—OBVIOUSNESS—CLOSURE—35 U.S.C. 103.

"Appellant's short argument against the prior art rejection is based on his contention that the central part of Engels' closure would not be in an unshrunken condition. Appellant's claims require an unshrunken and relatively thin central portion of the closure. Appellant compares the steps in his formation of the closure with those of Engels to show the necessity of the differences, neither disclosure being explicit. We think, however, that the Examiner correctly pointed out that these arguments would be more in point were method claims here involved. This rejection is under 35 U.S.C. 103. Whether or not Engels anticipates appellant's closure, it seems to us that unobviousness cannot be predicated on apparently immaterial differences in thickness of the plastic material. We likewise agree with the Examiner's disposal of appellant's other arguments relying on the particular plastics, use with 'pressure beverages', etc., as obvious expedients."

6. SAME—PARTICULAR SUBJECT MATTER—"CLOSURE FOR BOTTLES AND OTHER CONTAINERS."

The decision of the Board of Appeals, in an application entitled "Closure for Bottles and Other Containers," refusing certain claims on the ground of double patenting and other claims as unpatentable over the prior art, is affirmed on both grounds.

AFFIRMED.

Alvin Guttag (*C. Edward Parker*, of counsel) for appellant.

Joseph Schimmel (*George C. Roeming*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH and ALMOND, *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals, adhered to on reconsideration, affirming the rejection of claims 30–35 and 40–46 in application Serial No. 505,415, filed May 2, 1955, entitled "Closure for Bottles and Other Containers." A rejection of claims 36–39 was also affirmed but appeal from that decision has been withdrawn. No claim has been allowed.

The Claimed Invention

The invention is a method for the formation of a closure at the opening in a container (e.g., at the top of a bottle) in which a sheet of polymer is placed over and around the opening and then heat shrunk to form the closure. Claims are directed to the closure itself, the method, and apparatus. The following are illustrative:

30. A method of forming a closure having a central portion and a skirt for containers from a heat shrinkable polymer and applying the same to said containers comprising placing a sheet of said polymer over the top of a container, forming from said sheet a cover portion thereof of an area to overlie the open end of the container and to have an edge portion extending downwardly over the lip of the container to form a skirt therearound, and applying heat to the skirt portion of said sheet whereby the heated area of the skirt portion will shrink and snugly fit the coextensive external area of the container.

34. A closure having a central portion and a skirt for containers made of a heat shrinkable plastic material, said closure being relatively thin and in substantially unshrunk condition over the major area of the central portion thereof, said closure terminating in a substantially shrunk skirt which, when in closing relation with a container, snugly fits the coextensive area of the container.

40. An apparatus for shaping and shrinking shrinkable film comprising means for simultaneously holding said film in place on an object, and for folding the edges of the film down and means for heating said folded edges to shrink the same while the balance of the film is held in place.

Claims 31 and 32 are dependent on claim 30 and are limited to closures which include biaxially oriented polyethylene and a laminate of that polyethylene and shrinkable polyethylene terephthalate, respectively. Claims 33 and 46 are similar to claim 30.

Claim 42 is dependent on claim 30 and specifies a shrinkable polymer of an ester of terephthalic acid and a glycol having 2 to 10 carbon atoms. Claim 43 is dependent on claim 42 and specifies an ester of

polyethylene terephthalate. Claim 44 is also dependent on claim 42 and requires that the container be filled before sealing and that the contents be subsequently heat treated.

Claim 35 is directed to the combination of container and closure, the latter being described in language similar to that of claim 34. Claim 41 is dependent on claim 35 and is limited to closures of heat shrinkable polyethylene terephthalate and containers of pressure beverages.

The Rejections

The following references were relied on:

Engels, 825,116, July 3, 1906.

Dreyfus et al., 2,976,655, Mar. 28, 1961.

Engels discloses a plastic, heat shrinkable closure which, like appellant's, is made up of a central part and a skirt. The skirt is shown in several of the drawings as heat shrunk about the part of a container adjacent the covered opening. Engels' examples disclose celluloid as the plastic.

Dreyfus et al. is assigned to W. R. Grace and Co., owners of appellant's application. It contains, inter alia, the following claims:

1. A method of forming a cover having an elastic edge comprising positioning a film of a high shrink energy polymer over and beyond the lip of a container, maintaining pressure on the film over the container, forcing the excess film downwardly around the container to form a gathered skirt and heating a band of said skirt briefly to shrink the skirt and provide a gathered but relatively elastic edge.

2. A method according to claim 1 wherein the polymer is irradiated, biaxially oriented polyethylene.

3. A machine for forming covers made of a heat shrinkable material on a dish shaped container comprising a container support, means for maintaining a film cover on a container positioned on said support and for gathering the edge of the film extending beyond the edge of the dish into a downwardly depending skirt and impulse heat sealing [means] positioned adjacent said support so as to heat shrink the gathered edge of said film.

The Examiner rejected closure claims 34, 35, and 41 as obvious in view of Engels under 35 U.S.C. 103. The specification of heat shrinkable polyethylene terephthalate in claim 41 did not, in the Examiner's opinion, impart patentability since "such a film is admittedly old as noted from * * * the specification. Accordingly, to substitute heat shrinkable polyethylene terephthalate for the heat shrinkable celluloid employed by Engels would be obvious." The limitation to use with a pressure beverage he deemed an obvious expedient.

The Examiner rejected method claims 30–33 and 42–46 for double patenting in view of claims 1 and 2 of Dreyfus et al. He seemed to think that appellant's claims were drawn to the same invention as those of the patent. He also argued that the same "inventive concept" was involved in each set of claims. He also thought obvious the additional limitations of claims 44 and 45.

He rejected claim 40, the apparatus claim, for double patenting in view of claim 3 of Dreyfus et al. The recitation of impulse heat sealing means in the patent claim did not, in the Examiner's opinion "render the rejection improper" since claim 40 "is clearly readable on claim 3 of Dreyfus et al. and would extend the monopoly." He also cited *In re Christensen*, 51 CCPA 1236, 330 F.2d 652, 141 USPQ 295 (1964).

The Board, in a concise opinion, affirmed the Examiner's rejections. Claims 34, 35, 40, and 41 were treated in an especially pithy fashion:

With regard to the rejection of claims 34, 35, 40 and 41 supra, in our opinion the reasons for the rejection as set forth in the Examiner's answer are considered sound. We perceive no compelling reasons in appellant's arguments for holding otherwise.

The other rejections were approved since "the gist of the invention is the same in both cases."

Appellant then filed a terminal disclaimer and requested reconsideration by the Board. In an opinion refusing to make any change, the Board commented thus on the disclaimer:

It is not the practice of the Board to consider a terminal disclaimer filed after the Board's decision since to do so would amount to a reopening of the prosecution which is contrary to Rule 198. However, in passing, we note the terminal disclaimer does not appear to be appropriate in this application in view of the *overlapping* relationship of the claims of the application and the patent, pointed out in our original decision. Hence, the *overlapping* relationship herein which, we note, was not present in *In re Robeson*, 141 USPQ 485 and *In re Kaye*, 141 USPQ 829, could result in *multiple harassment* of the public. Moreover, the Robeson and Kaye decisions have not been extended to cover cases of *different inventors with a common assignee*. [Emphasis ours.]

The Board also addressed itself to the following statement in appellant's petition:

In regard to apparatus claim 40 in particular, it is pointed out that the Board has ignored the express limitations in claim 3 of Dreyfus to impulse heat sealing means. Such means, not being disclosed in Heyl, obviously could not be claimed in Heyl, and it is submitted that Heyl is properly entitled to the generic apparatus claim.

The Board felt that the additional limitation did not create the necessary patentable distinction, applying the test of *In re Christensen*, supra, in which we said:

* * * the correct procedure for double patenting cases is to analyze the claims to determine the inventions defined therein, and then decide whether such inventions, as claimed, are *patentably distinct* and therefore qualified to be claimed in separate patents.

The Solicitor has taken an entirely different approach toward the double-patenting rejection of the method claims. He argues, in his brief, that claims 30–33 and 42–46 "are *not* supported by and not readable on appellant's original disclosure." It then follows, according to the Solicitor, as we understand his argument, that the later-filed Dreyfus et al. patent is prior art with respect to those claims since they were entered in their present form after the patent's filing date. See 35 U.S.C. 102(e); *Muncie Gear Works, Inc.* v. *Outboard Marine & Mfg. Co.*, 315 U.S. 759 (1942). The Solicitor's brief summarizes:

Since Dreyfus et al. with respect to appellant were clearly the first and only applicants to disclose the subject matter of claims 30 through 33 and 42 through 46, their disclosure under 35 U.S.C. 102(e) and (g) anticipates those claims in appellant's application and such anticipation cannot be overcome by a terminal disclaimer.

The Solicitor undertook "no amplification" of the reasons of the Examiner and Board for the rejection of claim 40. He argued that the invention of claims 34, 35, and 41 is described as well in Engels, at least, as in appellant's application.

We will discuss separately the double-patenting rejection of claims 30–33 and 42–46, the double-patenting rejection of claim 40, and the prior art rejection of claims 34, 35, and 41. We will set forth the pertinent parts of appellant's arguments in each discussion as we comment on them. We will first, however, dispose of the problem of whether the terminal disclaimer can be considered.

The Terminal Disclaimer

[1] Appellant argues that the Board's refusal to consider his terminal disclaimer deliberately flouts this court's direction in *In re Tanner*, 52 CCPA 1307, 343 F.2d 1018, 145 USPQ 345 (1965), a decision several months earlier than the Board's refusal here. We do not agree. We remanded that case to the Board to consider the effect of a terminal disclaimer filed after appeal in the light of *decisions of this court clarifying the law subsequent to the Board's action.* Those same decisions were several months prior to the Board decision here. See also *In re Dunn*, 52 CCPA 1760, 349 F.2d 433, 146 USPQ 479 (1965). We, of course, did not mean by those exceptional actions, taken in the interest of justice, to preclude the establishment of orderly procedures for the consideration of terminal disclaimers in the Patent Office. We interpret the Board's decision in this case as a refusal to consider the effect of the disclaimer because of its untimely submission. It does not appear that any of our later decisions would affect the propriety of that refusal. We, therefore, will not disturb it.[1] Cf. *In re Pantzer*, 52 CCPA 1135, 341 F.2d 121, 144 USPQ 415 (1965); *In re Harris*, 51 CCPA 786, 324 F.2d 316, 139 USPQ 292 (1963). We therefore decide the case on the basis that there is no terminal disclaimer for our consideration.

The Double Patenting Rejection of Claims 30–33 and 42–46

[2] The Solicitor's argument for the unpatentability of these claims seems to us no more than an ill-disguised rejection for lack of support, quite distinct from that for double patenting made below. We decline to consider it. *In re Baird*, 52 CCPA 1747, 348 F.2d 974, 146 USPQ 579 (1965); *In re Sutherland*, 52 CCPA 1683, 347 F.2d 1009, 146 USPQ 485 (1965).

[3] Appellant relies primarily on the limitation in the Dreyfus et al. claims to the effect that "a band" (of indeterminate width) of the skirt must be heated. He argues that his claims require the *entire* skirt to be heated and are thus patentably distinct from those of the patent. He recognizes, as he must, that his claims are not so limited in terms. He attempts, however, to read into them the limitations of his examples. Inasmuch as there is no terminal disclaimer before us, we do not feel that it is necessary to decide whether this effort is successful. It seems to us, as it did to the Examiner, that even if the claims here in question define separate inventions by reason of the reading in of the example limitations, one is no more than an obvious variant of the other. In such a case, of course, the double patenting rejection is good. *In re Zickendraht*, 50 CCPA 1529, 319 F.2d 225, 138 USPQ 22 (1963); see *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485 (1964); *In re Kaye*, 51 CCPA 1465, 332 F.2d 816, 141 USPQ 829 (1964).

A contention that there are unobvious differences between the claims of the patent and the application seems implicit in appellant's frequent assertion of patentable distinction. The details of his argument, however, seem to focus almost solely on establishing the separateness of the inventions. And this, of course, is not enough. Appellant has

[1] Our action should not be taken to indicate approval of the Board's comments on the effect of the "overlapping relationship of the claims" and the different inventorship of the applications. See *In re Braithwaite*, 54 CCPA —, — F.2d —, — USPQ —; *In re Bowers*, 53 CCPA 1590, 359 F.2d 886, 149 USPQ 570 (1966).

pointed to the allowance of the Dreyfus et al. claims as indicative of the necessary patentable distinction; but we cannot be bound thereby.

[4] Appellant does urge that unobviousness is imparted by the specification of two-ply laminate in claim 32 and of polyethylene terephthalate in claims 44 and 45 and, even, by the specification of a pressure-containing beverage in claim 45 and the heating of the contents of the container specified in claims 44 and 45. We cannot agree. Limitations of the invention of the patent claims to use in a conventional way or with plastic material of admittedly known desirable qualities are not unobvious limitations. Nor could we ignore, on the mere contrary assertion of appellant, the Examiner's persuasive statement that the laminate might obviously be substituted for the film of a single layer.

The Double Patenting Rejection of Claim 40

There is some ambiguity in the explanation of this rejection by both Examiner and Board. However, we think that their reliance on *In re Christensen*, supra, shows that neither meant to assert that the mere dominance of the claims in the application over those of the reference patent requires a double patenting rejection. See *In re Stanley*, 41 CCPA 956, 214 F.2d 151, 102 USPQ 234 (1954). We think rather, that they found no unobvious distinction between the claims—between the generic heating means and the specific "impulse" heat sealing means. Appellant's argument again seems either to assume unobviousness or to ignore its necessity. He argues:

> The Examiner and Board have now advanced the novel proposition that even though a species invention is admittedly patentable over a prior generic invention that the owner of both the genus invention and the species invention cannot obtain a patent on the earlier filed genus invention once the specific invention issue[s] into a patent.

We do not think we have before us the case appellant describes. Appellant's inability to claim the specific heating means of Dreyfus et al. is, of course, not determinative of the unobviousness question.

The Prior Art Rejection of Claims 34, 35, and 41

[5] Appellant's short argument against the prior art rejection is based on his contention that the central part of Engels' closure would not be in an unshrunken condition. Appellant's claims require an unshrunken and relatively thin central portion of the closure. Appellat compares the steps in his formation of the closure with those of Engels to show the necessity of the differences, neither disclosure being explicit. We think, however, that the Examiner correctly pointed out that these arguments would be more in point were method claims here involved. This rejection is under 35 U.S.C. 103. Whether or not Engels anticipates appellant's closure, it seems to us that unobviousness cannot be predicated on apparently immaterial differences in thickness of the plastic material. We likewise agree with the Examiner's disposal of appellant's other arguments relying on the particular plastics, use with "pressure beverages," etc., as obvious expedients.

[6] The decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, took no part in the decision of this case.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,395,449, S. W. Briggs, FILTER UNIT, filed Dec. 8, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c2073, *Southwick W. Briggs and Stone Filter Company, Inc.* v. *Gould National Batteries, Inc.* Dismissed with prejudice, on stipulation, Nov. 22, 1967.

2,467,857, L. G. Bates, FILM FASTENING REEL, filed Sept. 22, 1966, D.C., S.D.N.Y., Doc. 66–C–3041, *Union Trust National Bank et al.* v. *De Luxe Laboratories, Inc. et al.* Stipulation and order of discontinuance, Nov. 2, 1967.

2,650,732, Cusic and Robinson, QUATERNARY AMMONIUM SALTS OF DIALKYL AMINOALKYL XANTHENE-9-CARBOXYLATES AND THE PRODUCTION THEREOF, filed Dec. 5, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–1143, *G. D. Searle & Co.* v. *Generic Formulae Inc.*

2,797,091, I. L. Fife, WEB SHIFTING APPARATUS, filed Nov. 30, 1967, D.C., E.D. Ill. (Danville), Doc. CV67–172–D, *Fife Corporation* v. *Hurletron, Incorporated.*

3,056,224, Almy and Zentmyer, TESSELLATED SURFACE COVERING, filed Nov. 14, 1967, D.C.N.J. (Newark), Doc. 1168–67, *Armstrong Cork Company* v. *Kentile Floors, Inc.*

3,064,974, W. L. Staley, AUTOMATIC PIN CLEANING AND DUST CONTROL APPARATUS, filed July 13, 1965, D.C., E.D. Mich. (Detroit), Doc. 27104, *William L. Staley* v. *Cadillac Overall Supply Co. et al.* Consent decree, Patent No. 3,064,974 issued to W. L. Staley, valid, Patent No. 3,051,484 issued to J. I. Shulevitz, assignor to Cadillac Overall Supply Co. is an infringement, Nov. 13, 1967.

3,155,766, Eichert, Procter and Polsky, ELECTRICAL COMPONENT ASSEMBLAGE AND CASING THEREFOR, filed Nov. 30, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2067, *Technitrol, Inc.* v. *Aladdin Industries, Inc.*

3,161,471, J. J. Scott, ARC FURNACE PROCESS FOR THE PRODUCTION OF BORON CARBIDE, filed Nov. 28, 1967, D.C., W.D.N.Y. (Buffalo), Doc. C–1967–422, *Norton Company* v. *Carborundum Company.*

3,166,427, W. A. Herrmann, POULTRY PROCESSING METHOD, filed Sept. 29, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1674, *Tillman Produce Co.* v. *Frank G. Heilman Co.* Per stipulation cause dismissed, without prejudice, Nov. 28, 1967.

3,179,701, P. J. Mole, ILLUMINATING DEVICE FOR PRODUCING VARIED COLOR EFFECTS, filed Dec. 29, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c2403, *Phillip Mole* v. *Austin Continental Industries, Inc. et al.* Defendants' motion for summary judgment is allowed; plaintiff's complaint is dismissed, Nov. 28, 1967.

3,219,752, L. A. Harris, HIGH FREQUENCY ELECTRICAL LEAD-IN CABLE, filed Nov. 29, 1967, D.C.N.J. (Newark), Doc. 1212–67, *Columbia Wire Products Company* v. *Vikoa Inc.*

3,246,392, G. A. Altgelt, METHOD OF REPAIRING AIRCRAFT CYLINDER HEADS, filed July 26, 1966, D.C., W.D. Tex. (San Antonio), Doc. 66–79–SA, *Chrome Plate, Inc.* v. *Electro-Coatings, Inc.* Stipulation for dismissal, Dec. 1, 1967.

3,267,969, J. B. Mallard, REENFORCED WEIGHTED PIPE, filed Dec. 1, 1967, D.C., S.D. Tex. (Houston), Doc. CA–67–H–912, *James B. Mallard* v. *Kon-Kote Services, Inc. et al.*

3,303,903, I. A. Speelman, DUAL HEAD STETHOSCOPE, filed Dec. 5, 1967, D.C., S.D.N.Y., Doc. 67–C–4772, *Propper Manufacturing Company, Inc.* v. *Misdom-Frank Corporation.*

3,318,630, R. F. Becker, WRIST TAB, filed Nov. 16, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1673–S, *Calendar Corp., MBM Company* v. *International Wrist Calendar Corp.*

PATENTS

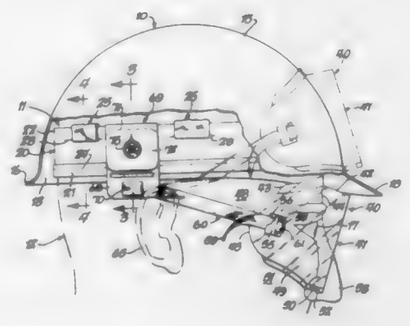
GRANTED MARCH 19, 1968

GENERAL AND MECHANICAL

3,373,443
COMBINATION HELMET AND FACE MASK
Michael T. Marietta, 5538 University Blvd., Dallas, Tex. 75206
Filed Feb. 24, 1966, Ser. No. 529,854
2 Claims. (Cl. 2—9)

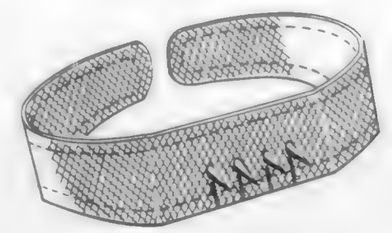
A protective head covering including two rigid members pivotally connected together wherein one member comprises a shell enveloping the skull from above the forehead to the back of the neck and the other member protects the face by extending from a point overlying the shell to below the chin. Cushion means within both members not only engage the head but also serve to limit the pivotal displacement of the members with respect to one another.

3,373,444
SAFETY ATTACHMENT FOR HARD HEADGEAR
James V. Militello, Buffalo, N.Y., assignor to American Allsafe Co., Buffalo, N.Y., a corporation of New York
Filed May 23, 1966, Ser. No. 552,095
4 Claims. (Cl. 2- -10)



1. In safety headgear having a hard shell comprising an oval dome with a visor projecting horizontally forwardly from the lower rim of the oval dome, a horizontal oval headband arranged inwardly from said rim and adapted to fit the forehead, sides and back of the user's head, and flexible harness means connecting said hard shell with said headband and adapted to provide a space between all parts of said oval dome and the crown of the user's head to protect the user's head from accidental blows against the hard shell; the combination therewith of safety goggles, comprising a goggle frame adapted to fit the user's face around the eyes, protective transparent wall means carried by said goggle frame in front of the user's eyes, and means securing said goggle frame for pressure fitting relation to the user's face, comprising a pair of extensible elastic straps, means securing the forward end of each of said straps to the corresponding side of said goggle frame in horizontal alignment with each other, and means securing the rear end of each of said straps to the corresponding side of said headband in a position generally above the inner part of the external ear of the user, said straps being stretchable to permit said goggle frame to be moved upwardly past said visor so that upon thereafter being released the goggle frame will be drawn to in an inoperative position on said visor by said stretchable elastic straps.

3,373,445
PROTECTIVE WRIST BAND
Dermot M. O'Neill, P.O. Box 561, Fort Walton Beach, Fla. 32548
Filed Feb. 1, 1967, Ser. No. 614,389
1 Claim. (Cl. 2—170)



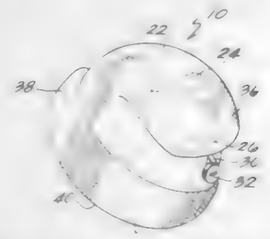
1. A wrist band for protecting the wearer against physical molestation comprising: a generally ring-shaped resilient metal strip shaped to encircle and fit the wrist, said strip having two free ends whereby said ends may be separated from each other to permit the band to be clamped on and removed from the wrist; and a plurality of rigid sharp-pointed, spike-like projections secured to said strip along a short circumferential portion thereof approximately midway between said free ends and extending radially outwardly of said strip, the remainder of the circumference of said strip being free of projections, the surfaces of said metal strip being covered with thin flexible sheet material, said projections extending through said sheet material.

3,373,446
CARICATURE COSTUME
Jack Verderame, 412 La Casa Ave., San Mateo, Calif. 94403
Filed Oct. 8, 1965, Ser. No. 494,021
2 Claims. (Cl. 2—173)

A caricature costume having an oversized hat dimensioned to fit over and enclose a wearer's head, the hat being provided with a transparent strip through which the wearer may observe, the hat extending downwardly to substantially shoulder level, and an enlarged false face piece depicting a representation of a human face secured

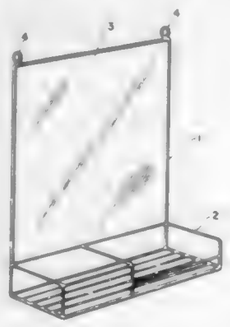
to the hat and depending therefrom and said face piece dimensioned such that it will cover a substantial abdominal portion of the wearer from about the shoulders to the waist of the wearer.

3,373,447
CONVERTIBLE HAT
June Kim, Kansas City, Mo., assignor to Reliable Knitting Works, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 10, 1966, Ser. No. 533,280
7 Claims. (Cl. 2—196)



A conventional hood, which includes a top cap portion, a lower neck portion and an intermediate face portion, is provided with a fastener arrangment adapted to hold the hood in a folded condition forming a shortened cap which will fit a wearer's head. One of the fasteners is located in the crown area of the top cap portion and the other fastener is located in the intermediate portion of the hood so that when engaged they hold the shortened cap with a fold through the intermediate hood portion and with the fold defining the closed end of the shortened cap.

3,373,448
SHOWER-SHAVER
Otto Doyle Butler, 2607 W. Shandon, Midland, Tex. 79701
Filed July 27, 1965, Ser. No. 475,289
2 Claims. (Cl. 4—1)



A bathroom appliance for installation in a shower and including a fog resistant sheet metal mirror and a support for toilet articles.

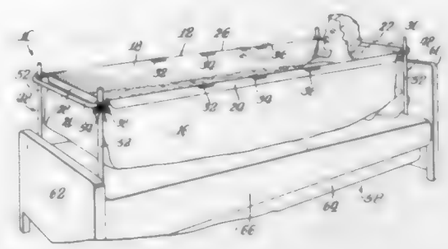
3,373,449
AUTOMATIC VALVE ACTUATED URINAL
Edward R. Rusnok, 1045 Delores Drive, Bensenville, Ill. 60106
Filed Feb. 11, 1965, Ser. No. 431,934
13 Claims. (Cl. 4—100)

An electrically operated fluid-valve actuating device having a movable member that is released, in response to an electric signal, from a spring-loaded cocked position to actuate the valve, and having a diaphragm responsive to a change of pressure caused by operation of the valve, for returning the movable member to its cocked position.

3,373,450
SWIMMING INSTRUCTION POOL
William J. Brooks, 275 Brighton St., Belmont, Mass. 02178
Filed Sept. 22, 1964, Ser. No. 398,279
3 Claims. (Cl. 4—172)

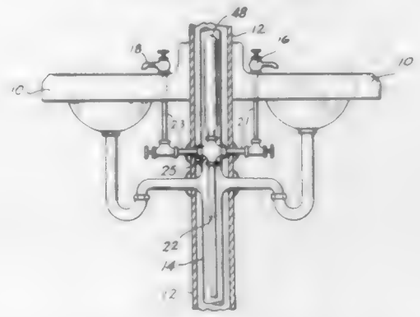
1. An instructional pool for training children to swim having a bottom and adjoining side wall extending upwardly therefrom which define a water retaining receptacle of sufficient depth to permit sequential filling with water between a selected first level of shallow depth where the bottom serves as a support to prevent submergance of a child while becoming acclimated to the surrounding water medium and a raised second level of greater depth which will permit voluntary immersion of the child in said surrounding water medium, the improvement comprising: visual attracting means including a window formed in said side wall which extends below said second level to visually allure the child into voluntarily assuming a suspended position in said surrounding water medium.

3,373,451
HOSPITAL BED BATH
Richard J. Schmidt, Chicago, Ill., assignor to Richard J. Schmidt Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 9, 1965, Ser. No. 478,271
9 Claims. (Cl. 4—177)



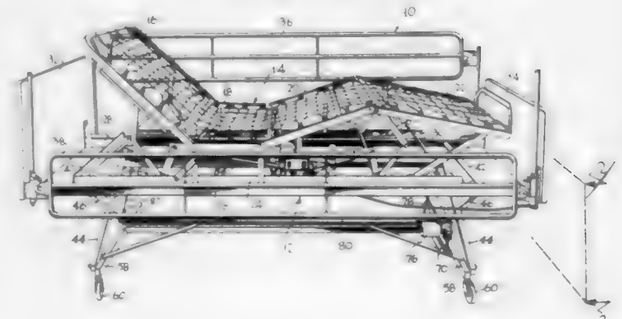
A bathing device comprising a flexible sheet having a base for resting on a mattress and having integral side and end wall portions, and means cooperating with the mattress and engageable with the wall portions for supporting the same in an upright position.

3,373,452
MANIFOLD ASSEMBLY FOR HOT AND COLD WATER FAUCET PAIRS ARRANGED BACK TO BACK
James B. Watts, Portland, Oreg., assignor to James E. La Du, Portland, Oreg.
Filed Aug. 7, 1964, Ser. No. 388,086
1 Claim. (Cl. 4—192)



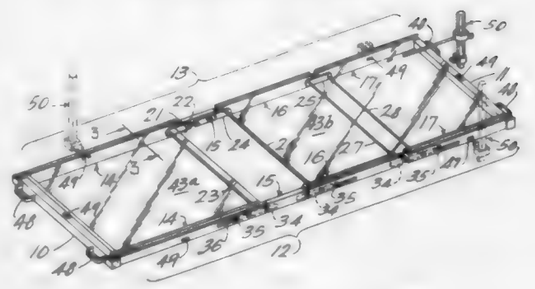
1. A manifold assembly for hot and cold water faucet pairs arranged back to back on opposite sides of a partition, the assembly comprising
(a) a pair of horizontally spaced manifolds, each being of one-piece construction,
(b) each manifold having bottom, front and back ports, a hot water side port and a cold water side port,
(c) connecting means on the bottom ports for connecting one manifold to a hot water line and the other to a cold water line,
(d) connecting means on the front and back ports for connecting the front port of one manifold to a hot water faucet, the back port of said one manifold to a cold water faucet, the front port of the other manifold to a cold water faucet and the back port of said other manifold to a hot water faucet,
(e) a hot water connecting conduit interconnecting the hot water side ports of the respective manifolds,
(f) a cold water connecting conduit interconnecting the cold water side ports of the respective manifolds,
(g) a first passageway in said one manifold interconnecting the hot water line port, the hot water faucet port, and the hot water side port thereof,
(h) a second passageway in said one manifold interconnecting the cold water faucet port and cold water side port thereof,
(i) a first passageway in said other manifold connecting the cold water line port, cold water faucet port, and cold water side port thereof,
(j) a second passageway in said other manifold connecting the hot water faucet port and hot water side port thereof,
(k) a cold water transmission line port in said one manifold communicating with said second passageway therein, and
(l) a hot water transmission line port in said other manifold communicating with said second passageway therein,
(m) the transmission line ports being adapted for connection to further manifold assemblies in remote locations.

3,373,453
VERTICALLY ADJUSTABLE BED
Robert Goodman, 5325 Westminster Ave., Philadelphia, Pa. 19131
Filed Sept. 13, 1966, Ser. No. 579,158
10 Claims. (Cl. 5—63)



An adjustable bed having a bottom support means upon which is positioned a frame. The frame is movable in a vertical direction into any incremental position of vertical adjustment. A bed-spring is supported on the frame and is provided with pivotal head and foot sections that are individually movable from a horizontal to various inclined positions. The vertical adjustment of the frame is effected by pivotally interconnected cross-bars at each end of the bed. The cross-bars are, preferably, connected, above their pivotal connection, by a tension spring. These cross-bars serve both to support the frame and to adjust it vertically. They also automatically retain the frame in each vertical position.

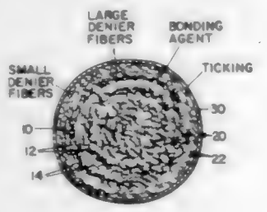
3,373,454
DEVICE FOR MOVING INJURED PERSONS
David T. Curtis, 4121 Halifax Road, Toledo, Ohio 43606
Filed Feb. 8, 1967, Ser. No. 614,687
11 Claims. (Cl. 5—81)



A device for moving injured persons having a generally rectangular open frame with the side rails of the frame each including a plurality of rail elements pivotally at-

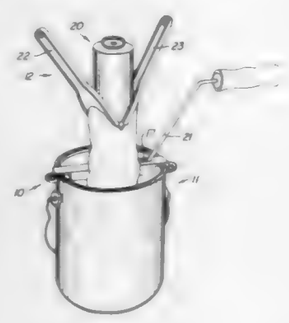
tached to one another in end-to-end relationship. Each of the pivot joints can be locked against pivotal movement so that the rigid frame, with a flexible sheet secured across its middle, may be used as a rigid litter or stretcher. The number and lengths of opposed pairs of rail elements comprising the side rails of the frame correspond in size and location to the movable sections of existing hospital examination or operating tables so that the device, when placed upon such a table with the pivot joints unlocked, will follow and conform to the surface of the table as it is elevated or depressed at various angles for examination or treatment of a patient thereon.

3,373,455
FILLING MATERIAL FOR PILLOWS
Julius Kaplan, 180 Audubon Ave., Mount Vernon, N.Y. 10552
Filed Sept. 10, 1965, Ser. No. 486,334
1 Claim. (Cl. 5—361)



A filling material for pillows comprising a package formed of an inner core of a batt of randomly oriented large denier fibers, bonded at the outer surfaces of the batt, the batt being rolled upon itself to form a jelly-roll core having high resiliency, and an outer sleeve-like wrap of a batt of randomly oriented small denier fibers enwrapping the jelly-roll core, the fibers in the batt of small denier fibers being unbonded to form a soft fluffy outer wrap.

3,373,456
PAINT ROLLER CLEANING APPARATUS
Gerald Dalton, Kaysville, Utah, assignor of fifty percent to Robert F. Wilson, Bountiful, Utah
Filed Oct. 21, 1965, Ser. No. 500,093
7 Claims. (Cl. 15—1)

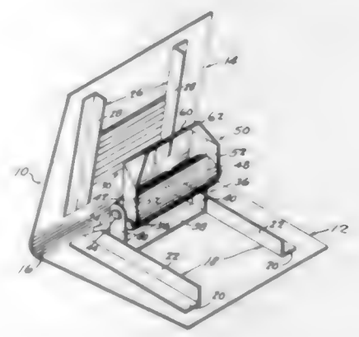


1. Paint roller cleaning apparatus comprising
a holder including means for holding a paint roller handle such that a paint roller carried thereby is positioned to have its axis upright above the open top of a paint can; and
a scraper comprising a pair of handles having an enlarged opening formed therebtween and hinge means interconnecting the handles, the opening being sufficiently large that the edges of the handles and the hinges surrounding the opening are spaced from the paint roller positioned for cleaning by the holder when the handles are in substantially the same plane and so that as the handles are pivoted toward each other the roller is squeezed between the edges surrounding the opening, whereby movement of the scraper along the length of the roller will strip paint therefrom.

3,373,457
LINT REMOVING DEVICE
Anthony J. Rouch, Jr., 583 Candle Light Lane, Hazelwood, Mo. 63042
Filed May 6, 1965, Ser. No. 453,667
2 Claims. (Cl. 15—104)

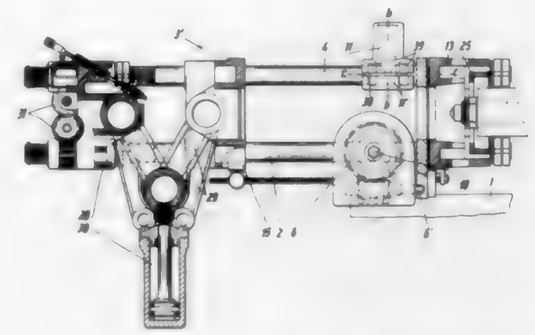
1. A device for removing lint and other foreign particles from the surface of clothing and other fabric articles comprising an elongated channel-shaped member defined by a bottom wall and shaped side walls, another wall member extending between the spaced side walls of the channel-shaped member, said other wall member and said spaced side walls having means cooperatively engageable in different alternative positions of the said other wall member so that the position of said other wall member can be reversed and inverted on the channel-shaped member, said cooperatively engageable means including means forming a sliding connection between the channel-shaped member and said other member, a sheet member having an adhesive coating on one surface thereof mounted on one side of the said other wall member, and a plurality of similar sheet members each having an adhesive coating on one surface arranged in a stack which is mounted on the aforesaid sheet member, each adhesively coated sheet member having a non-adhesive portion at one end only, said non-adhesive end portions of adjacent sheet members being positioned at opposite ends of the stack, the stack moving from a stored condition in one position of said other wall member to an exposed condition when the other wall member is reversed in which latter position the adhesive coated surfaces face outwardly.

3,373,458
STEP TOOL
William S. Haivala, % Haivala Concrete Tools, Inc., 1017 Walker, P.O. Box 1055, Wichita, Kans. 67213
Filed Oct. 21, 1966, Ser. No. 588,441
9 Claims. (Cl. 15—235.7)



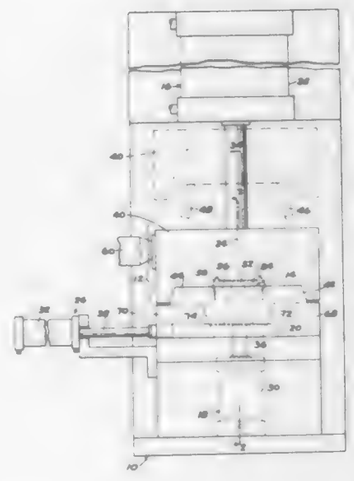
1. A step tool comprising a flat V-shaped blade having a horizontal leg and a vertical leg, a resilient band connecting the legs, said vertical leg having a rear surface, said rear surface being formed with parallel vertically spaced horizontal grooves, and a dog eccentrically pivoted upon the horizontal leg and adapted to be forcibly engaged in selected grooves.

3,373,459
INJECTION MOLDING MACHINE
Karl Hehl, Lossburg, Wurttemberg, Germany, assignor to Arburg Maschinenfabrik Hehl & Sohne, Lossburg, Wurttemberg, Germany
Filed July 7, 1966, Ser. No. 563,597
Claims priority, application Germany, July 22, 1965, A 49,812
10 Claims. (Cl. 18—30)



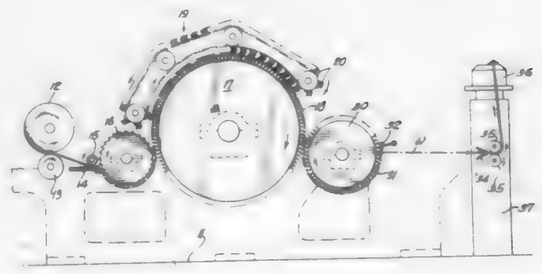
1. An injection molding machine, comprising in combination:
(a) a machine frame;
(b) a mold clamping unit mounted on supporting rods and movably connected to said frame allowing said mold clamping unit to be secured to said machine frame in both a horizontal and a vertical position, said supporting rods of said mold clamping unit having central planes through their axes spaced from the center line of said mold clamping unit;
(c) coupling members connected to said supporting rods and displaceable independently of each other in the axial direction of said supporting rods; and
(d) at least one injection unit having support rods attached thereto;
(e) said coupling members having plug connection means for receiving and holding the ends of said support rods attached to said at least one injection unit.

3,373,460
MOLDING APPARATUS
Michael Ladney, Jr., Grosse Pointe Shores, Mich. (18125 E. 10 Mile Road, East Detroit, Mich. 48021)
Filed Sept. 13, 1965, Ser. No. 486,777
4 Claims. (Cl. 18—42)



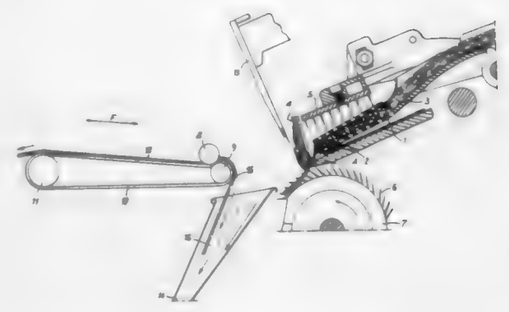
A plastic molding die wherein the male die member comprises a center core and two side cores slidably connected with the center core and including a support member having a pair of inclined support faces engaged by the side cores for constraining the side cores to move in a path of travel inclined to and in the direction of the path of travel of the center core when retracted.

3,373,461
METHOD FOR CARDING FIBERS
Joseph U. Bessette, Manchester, and Joseph A. Priestley, Goffstown, N.H., and Heath O. Kennette, Plainfield, N.J., assignors to Johnson & Johnson, a corporation of New Jersey.
Filed Nov. 6, 1964, Ser. No. 409,419
4 Claims. (Cl. 19—98)



An improved process for carding textile fibers on a flat top card, wherein, the teeth of the flats have embedded between the wires fly and waste material, whereby, the amount of waste material produced in the carding operation is greatly reduced.

3,373,462
COMBING MACHINE FOR LONG TEXTILE FIBERS
Jean Frederic Herubel, Guebwiller, France, assignor to N. Schlumberger & Cie, Guebwiller, France, a French société à responsabilité limitée
Filed June 3, 1965, Ser. No. 460,903
Claims priority, application France, June 5, 1964, 977,200
2 Claims. (Cl. 19—230)

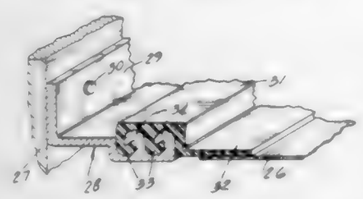


A combing machine for long textile fibers having a control means for controlling the trailing end of a previously combed web to facilitate transfer of a newly combed web from nippers of the machine to a detaching mechanism, the control device including a suction funnel having a mouth which opens upwardly and disposed between a circular comb of the machine and detaching rollers of the detaching mechanism. The portion of the mouth adjacent the circular comb is located at a level higher than the rest of the mouth which extends in the direction of reciprocation of the detaching mechanism over a distance substantially equal to the amplitude of the reciprocation.

3,373,463
MOLDING CLIP
John R. Wells, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 545,104
4 Claims. (Cl. 24—73)

A clip for securing a trim panel or the like to a base member. The clip is a thin flat body member having an attaching prong at each end portion of the body with the end portions being interconnected by one or more spaced flexible strut like members. The strut member is capable of flexing in the plane of the body so as to enable the spacing between the prongs to be easily varied and at the same time retain the original flat silhouette of the clip.

3,373,464
STRUCTURE FOR ANCHORING FLEXIBLE SHEETING
Steven Ausnit, 124 E. 61st St., New York, N.Y. 10021
Filed Mar. 30, 1965, Ser. No. 443,999
6 Claims. (Cl. 24—201)



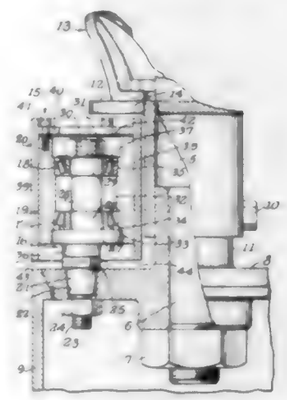
A fastener device for releasably anchoring a tensioned flexible sheet to an anchoring surface. The device includes a rigid anchor member adapted to be connected fast to the anchoring surface and a flexible attachment member made of elastomeric material adapted to be secured to the flexible sheet. Both the rigid anchor member and the flexible attachment member have complementarily shaped elongated cooperating groove and rib elements formed thereon. The groove and rib elements each comprise a neck portion which extends laterally of the longitudinal axis of the element and an enlarged head portion opening to the neck portion so that the anchor member and the attachment member are releasably interlockable by snap-in engagement of the rib and groove elements. The rib and groove elements extend transversely of the lines of force in the tensioned sheet to resist separation of the anchor and attachment members due to the tension in the sheet.

3,373,465
LOCKING HOOK WITH ARCUATELY SLIDABLE LOCKING MEMBER
Wallace J. S. Johnson, Berkeley, and Gerald Louis Claxton, Albany, Calif., assignors to Up-Right, Inc., Berkeley, Calif., a corporation of California
Filed Mar. 24, 1966, Ser. No. 537,042
3 Claims. (Cl. 24—241)

A locking hook having a hook member defining a jaw and a plane surface, a locking member with a radius corresponding to the radius of the jaw, the locking member being pivotally mounted to the hook member and mounted for limited sliding movement relative thereto to define an innermost and outermost limit of sliding movement, with the hook member partially closing the opening of the jaw during the movement from innermost to outermost

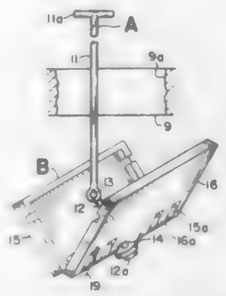
position, the locking member having a locking face which engages the plane surface of the locking hook when the locking member is at its outermost position, to thereby prevent pivotal movement of the locking member, and means for holding the locking member in its outermost position.

3,373,466
PACKER HEAD ROLLER FOR CEMENT PIPE FORMING
Donald C. Pausch, Indio, Calif., assignor to Pausch & Sons Equipment, Inc., Mecca, Calif., a corporation of California
Filed Jan. 24, 1966, Ser. No. 522,652
6 Claims. (Cl. 25—36)



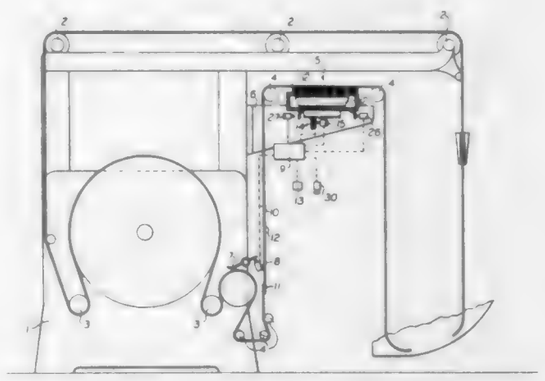
1. A roller for mounting on the head plate of the troweling cylinder of a packer head, a tapered seat being provided in said plate, said roller comprising:
(a) a stud provided with a lower tapered end fitted in said seat and having a threaded extension for a nut to lock the stud tightly to the head plate,
(b) an upper extension on said stud on an axis eccentric to the axis of the tapered end and threaded extension,
(c) two vertically spaced taper roller bearings having their inner races tightly fitted to the eccentric extension of the stud,
(d) flange integral with the stud, coaxial with the eccentric extension and located above the tapered end of the stud,
(e) a ring hub mounted on the outer races of the taper roller bearings and formed with an annular seat to accommodate the flange on the stud, and
(f) a removable hardened wear sleeve on the ring hub and having a lower end that is spaced closer to the head plate of the troweling cylinder than are said flange and the lower end of the ring hub.

3,373,467
FURNACE WALL REPAIRING DEVICE
Joseph Loughrey, 1550 Beverly Place, Pittsburgh, Pa. 15206
Filed Oct. 21, 1965, Ser. No. 499,164
15 Claims. (Cl. 25—118)



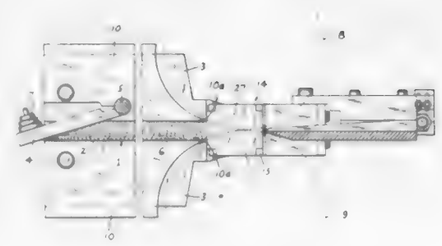
A repair device is provided for facilitating cementing and closing a hole in a furnace wall or roof. The device has a pair of elongated, hinged, plate sections that are carried in a folded relation by a two-part suspension arm assembly for guided insertion endwise through the hole that is to be repaired. The folded plates are released after insertion in the furnace by the destruction of a binding string or cord and are spread-apart about the suspension arm assembly. The spread plates are pulled up beneath the hole to provide support for the cement during the repair operation, and an upper arm of the arm assembly is disconnected from a lower arm after the completion of the patching operation, in order that the upper arm may be reused for a second operation. The plates in their endwise-folded relation define a guide slot for positively guiding them into the hole in the furnace through the agency of the suspension arm assembly, and contain the lower arm of the assembly until the means retaining them in their folded relation is released. A swinging-opening action of the plates about a pivot connection to the suspension arm assembly does not become effective until the plates are to be opened beneath the hole in the furnace.

3,373,468
METHOD OF RAISING TEXTILE FABRICS
Karl August Müllers, Monchen-Gladbach, Germany, assignor to Franz Muller Maschinenfabrik, Monchen-Gladbach, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 408,939, Nov. 4, 1964. This application May 17, 1967, Ser. No. 639,084
Claims priority, application Germany, Nov. 7, 1963, M 58,822
4 Claims. (Cl. 26—29)



A continuous method of raising woven, knitted and non-woven fabrics, which method comprises the steps of feeding a quantity of moisture to a fabric and passing the moistened fabric through a raising passage containing card points to partially raise the fabric, and repeating at least once the above-mentioned step by feeding to the fabric a predetermined increased quantity of moisture, with respect to the quantity of moisture fed in the preceding step, recycling the partially raised fabric through the raising passage for further raising thereof, whereby to obtain a more uniform raising and also to improve the total raising effect.

3,373,469
APPARATUS FOR CRIMPING TEXTILE FIBERS
Beryl Aaron Boggs, Chester, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Aug. 8, 1966, Ser. No. 570,913
5 Claims. (Cl. 28—1)

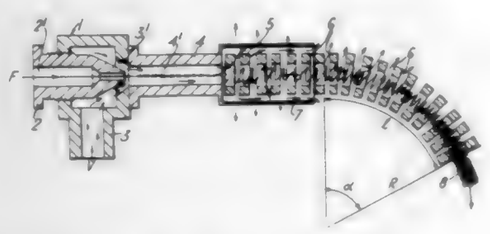


1. Apparatus for crimping textile fibers which comprises a crimping chamber including a base and a pair of side walls; a positively driven complementary pair of feed rolls having end faces, said feed rolls being disposed transversely adjacent one end of said chamber intermediate said side walls, a pair of doctor blades having a leading edge facing away from said crimping chamber one of each doctor blade forming the upper and lower portions of said crimping chamber at a site immediately forward from said feed rolls, a recess in each side wall defining a back edge in said side wall, each of the leading edges of said doctor blade and each of the back edges of said side wall forming the opening to said stuffing chamber, a pair of wear plate brackets positioned in said recesses, each accommodating a wear plate, said wear plates having a rearward edge disposed nearest said crimping chamber, and biasing means for pressure positioning said wear plates against said back edge of said side wall, toward said end faces of said rolls to accommodate said rolls in multi-directional displacement and toward the leading edges of said doctor blade.

3,373,470
PROCESS FOR CRIMPING YARN
Jean Joly, Lyon, France, assignor to Societe Rhodiaceta, Paris, France, a corporation of France
Continuation-in-part of application Ser. No. 171,521, Feb. 6, 1962. This application Mar. 27, 1964, Ser. No. 355,379
Claims priority, application France, Feb. 8, 1961, 852,055
13 Claims. (Cl. 28—72)

1. A process for stuffer crimp ing thermoplastic filaments, such process comprising introducing the filaments to be crimped into one end of an elongate confined space by means of a current of fluid under pressure and at a temperature sufficient to set the filaments, tightly packing said filaments into said confined space by controllably releasing part of said fluid from said confined space

laterally of the confined space at a position spaced from the other end of said space and forcing the packed

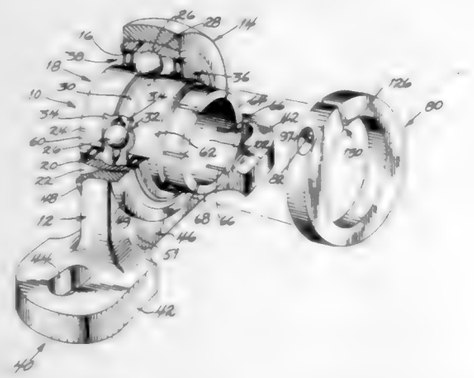


filaments through said space to said other end thereof under pressure by the remainder of said fluid.

3,373,471
METHOD FOR REMOVING TEMPORARILY EMPLACED THREADS FROM FABRIC MATERIAL
Homer S. Myers, Louisville, Ky., assignor to Solvex Corporation, Louisville, Ky., a corporation of Delaware
No Drawing. Filed Jan. 24, 1966, Ser. No. 522,365
3 Claims. (Cl. 28—76)

A basting thread formed of polycarbonate with oriented molecular structure and emplaced in a fabric material is subjected to agitation in the presence of perchlorethylene during the dry cleaning of the material and upon being fractured is removed from the material.

3,373,472
METHOD OF MAKING A BALL BEARING ASSEMBLY AND LOCKING COLLAR THEREFOR
Chester C. Moore, Aurora, Ill., assignor to Stephens-Adamson Mfg. Co., a corporation of Illinois
Filed Sept. 22, 1965, Ser. No. 489,141
5 Claims. (Cl. 29—148.4)



The invention has to do with a method of making a ball bearing assembly and methods and apparatus for making a locking collar therefor. The ball bearing assembly is concerned with using a special inner race member that receives a shaft or the like to be journalled and has at least one end of same formed with a plurality of spaced slots extending longitudinally thereof, assembling an outer race and bearing balls in abutting relation therewith, and applying a C-shaped clamping collar to the inner race slotted end portion and clamping the collar against the inner race to lock the inner race to the shaft or the like.

The methods and apparatus for making the locking collar involve coiling a length of bar stock into a helix, separating the turns of the helix into locking collar members, press forming the individual locking collar members to a predetermined internal diameter with their end portions pressed together, then milling the collar member end portions at right angles to the axis of the collar to define drilling recesses in the external O.D. of the collar member, then forming the collar member end portions to define a slot therebetween and cap screw mounting openings for applying a cap screw thereto to clamp the locking collar to the bearing inner race.

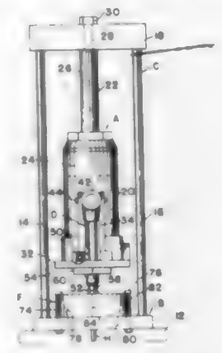
3,373,473
METHOD OF MAKING A SELF-SUPPORTING EXTENSION TOWER
Ralph W. Keslin, Calumet City, Ill., assignor to Ralph W. Keslin, Inc., Lansing, Ill., a corporation of Illinois
Original application Ser. No. 371,904, June 2, 1964, now Patent No. 3,328,921, dated July 4, 1967. Divided and this application Dec. 1, 1966, Ser. No. 608,714
6 Claims. (Cl. 29—155)

1. A method of manufacturing a tower section comprising the steps of forming a series of rectangular side walls or panels each of flat sheet material of relatively uniform gage, cutting out triangularly shaped areas along the length of the rectangularly shaped sheet material while contemporaneously working and arcuately forming struts peripherally defined by the cut-out areas and while contemporaneously forming angled legs extending continuously along the length of opposite margins of the sheet material, arranging the thus formed side walls or panels in tubular form with the angled legs on adjacent side walls or panels being engaged in face-to-face relation and with the legs extending outwardly and away from the side walls or panels, and securing the abutting legs in unitary assembly.

3,373,474
SWAGING MACHINE
Richard P. Doerer, Ypsilanti, Mich., assignor, by mesne assignments, to Van Dresser Corporation, a corporation of Michigan
Filed Nov. 8, 1965, Ser. No. 506,706
9 Claims. (Cl. 29—200)

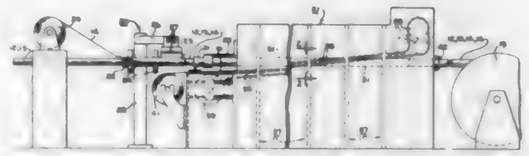
The swaging machine has laterally spaced, parallel rods extending from the base and connected by a cross-member. A piston-cylinder assembly between and in the plane of the rods has its piston connected to the cross-member. A swaging member is connected to the cylinder opposite a work support on the base to secure a fitting on a workpiece when the cylinder is moved toward the base. A fluid pump adapted to operate the piston-cylinder assembly is mounted on the cylinder at one side of the plane of the piston-cylinder assembly and rods, and is actuated by a handle projecting away from the plane. A guide rod for the cylinder projects from the base at the opposite side of the plane to resist distortion of the piston-cylinder assembly due to operation of the pump.

The machine may be readily adapted either to swage a fitting such as a coupling on a hose or to swage a fitting



such as a sleeve on a cable, wire rope or the like, depending upon the particular swaging member and work support employed.

3,373,475
APPARATUS FOR FOLDING TAPE ABOUT A STRAND
Warren E. Petersen, Council Bluffs, Iowa, assignor to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 7, 1966, Ser. No. 532,395
6 Claims. (Cl. 29—202.5)



1. Apparatus for guiding an elongated tape, which has been folded about a longitudinally advancing strand so that the tape extends longitudinally of the strand with edges of the tape in opposed relationship, which apparatus comprises:

an elongated tube;

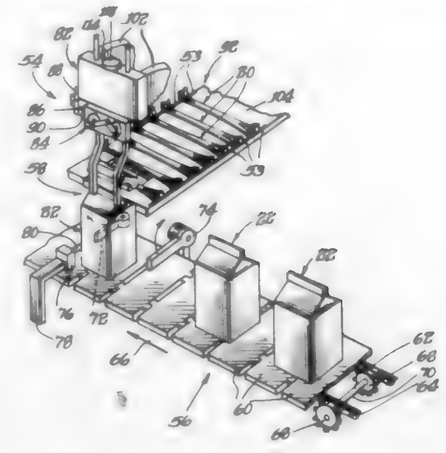
means for advancing the strand and the elongated folded tape longitudinally through said elongated tube;

a longitudinally extending, internal bead in said elongated tube projecting radially inward with respect to said tube so that opposite sides of said bead define preselected positions of the opposed edges of the folded tape; and

means for supporting the strand and the folded tape relative to said elongated tube and said bead such that as the strand and the tape are advanced through said tube by said advancing means the opposite sides of said bead engage the opposed edges of the tape to prevent rotation of the edges out of their preselected positions.

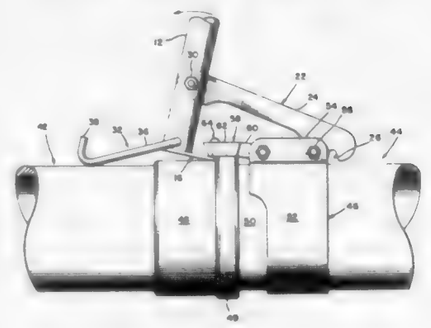
3,373,476
CARTON HANDLE ASSEMBLING MACHINE
Vincent A. Lombardo and Floyd B. Kopis, Addison, Ill., assignors to Walter E. Hidding, Arlington Heights, Ill.
Filed Oct. 7, 1965, Ser. No. 493,817
9 Claims. (Cl. 29—208)

Apparatus for assembling to a carton a handle of the type having spaced fitments joined by a flexible strap wherein handle feeding means includes pawl means operative to convey a said handle along a path toward a work station and wherein fitment mounting means includes spaced opposed walls aligned with the pawl means at the work station for directing movement of the fitments toward an assembled position with the carton, the fitment mounting means further including positioning means operable to contact handles disposed at the work station by



the pawl means and to cause forcibly guided movement of the handle between the spaced opposed walls.

3,373,477
PIPE TOOL
Tony C. Markgraf, Sutherland Springs, Tex. 78161
Filed Oct. 3, 1966, Ser. No. 583,693
10 Claims. (Cl. 29—237)



1. A pipe tool for assemblable and disassemblable conduits having male and collared female ends connected together by a coupling of the type having a support secured to one of the conduits, a lug on the other conduit and a lug engaging member on the support for engagement with the lug to secure the conduits together, the tool comprising:

a force applying arm;

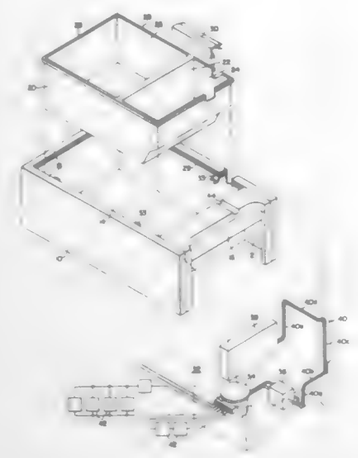
means on the arm for grasping the coupling support and the other conduit and moving the support toward the other conduit upon movement of the arm in order to free the lug engaging member from the lug; and

means on the arm for grasping the coupling support and the other conduit and moving the support away from the other conduit upon movement of the arm producing a force tending to separate the conduits.

3,373,478
METHOD OF MAKING REFRIGERATION APPARATUS
Harold F. Simmonds, Jr., Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 17, 1965, Ser. No. 508,221
8 Claims. (Cl. 29—407)

Method of producing a foamed-in-place insulated refrigeration device in which the refrigeration producing system is assembled to a fully testable state separate from the refrigeration device cabinet and tested, is then

installed in the cabinet and tested again with its major parts in their final assembly physical locations, the cab-



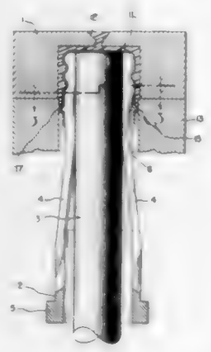
inet then being foamed to fill the hollow insulating spaces in the cabinets with portions of the refrigeration system captured therein, and then testing said refrigeration system for proper operation.

3,373,479

METHOD FOR MAKING MOLDED ARTICLES

William E. R. Watt, New Kensington, and Eldrich J. Willis, Bridgeville, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 25, 1965, Ser. No. 442,728
4 Claims. (Cl. 29—421)



Molding an article by radially expanding a collet to form a continuous bead seal against the wall of a mold cavity and, after introducing moldable material into the cavity, retracting the collet to permit removal of the article.

3,373,480

METHODS FOR SHAPING HONEYCOMB STRUCTURES

Francis J. Fuchs, Jr., Princeton Junction, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 8, 1965, Ser. No. 512,301
5 Claims. (Cl. 29—421)

1. A method of shaping a multicelled, honeycomb laminate wherein the honeycomb laminate comprises a first surface and a second surface, said second surface being perforated to the individual cells thereof, which comprises:

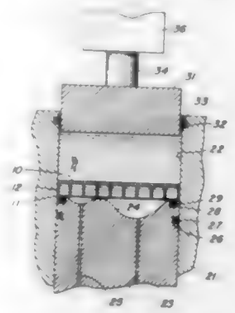
placing said first surface of the laminate against a die surface, and

applying pressurized forming fluid to said second perforated surface of the laminate and through the perforations in said second perforated surface to the interior of the cells thereof to conform said first surface of the laminate to the die surface.

4. A method of fabricating multicurved honeycomb structure which comprises,

securing a first flat plate of a predetermined thickness to a flat top surface of a frame having a plurality of non-interconnected open cells extending from a top planar surface to a flat bottom planar surface,

securing a second flat plate of a thickness less than said predetermined thickness to said bottom surface to complete a honeycomb structure,



drilling holes through said first plate to individually extend into each of said cells,

abutting said second flat plate against a non-planar surface of a forming cavity formed within a die, and then

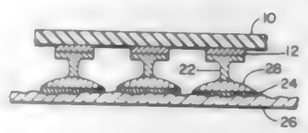
applying fluid with sufficient pressure to said die cavity to force the fluid through said holes to act against said second plate and frame to deform said honeycomb structure against said non-planar surface.

3,373,481

METHOD OF ELECTRICALLY INTERCONNECTING CONDUCTORS

Stanley J. Lins, Minneapolis, and Richard D. Morrison, West St. Paul, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed June 22, 1965, Ser. No. 465,943
4 Claims. (Cl. 29—471.3)



A technique of securing pedestals to the terminals of integrated circuit elements or devices, allowing the pedestals to make contact with coated substrate interconnect areas of thin-films or printed circuit members, and permitting the pedestals to be dissolved in the coating whereby all pedestals are secured to their matching interconnect areas to effect electrical interconnections.

3,373,482

FLUXLESS ALUMINUM BRAZING

Clarence John Miller, Paoli, Pa., assignor to General Electric Company, a corporation of New York

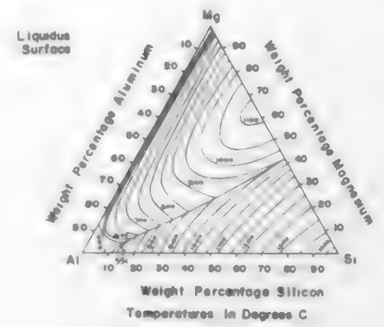
Application Dec. 12, 1963, Ser. No. 330,027, now Patent No. 3,322,517, dated May 30, 1967, which is a continuation-in-part of application Ser. No. 163,922, Jan. 2, 1962. Divided and this application Sept. 19, 1966, Ser. No. 616,134
2 Claims. (Cl. 29—501)

1. A fluxless brazing method of making a fabricated structure comprising:

(a) Providing members of aluminum alloy;

(b) Assembling the said members in their desired relationship;

(c) Providing at the junctions of the said members an alloy comprising at least 2 and not more than 13% of silicon;



(d) Providing in the vicinity of the junctions of the said members magnesium in the metallic state;

(e) Evacuating the space around the said members;

(f) Raising the temperature of the said parts to at least 590° C., but less than the melting point of the said members;

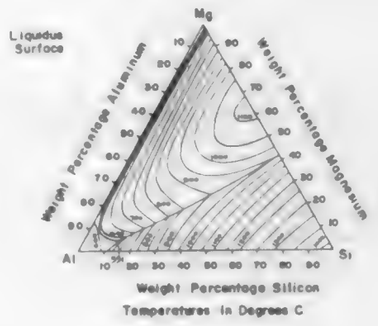
(g) Cooling the said parts to room temperature.

3,373,483

FLUXLESS ALUMINUM BRAZING

Clarence John Miller, Paoli, Pa., assignor to General Electric Company, a corporation of New York

Application Dec. 12, 1963, Ser. No. 330,027, now Patent No. 3,322,517, dated May 30, 1967, which is a continuation-in-part of application Ser. No. 163,922, Jan. 2, 1962. Divided and this application Sept. 19, 1966, Ser. No. 616,135
1 Claim. (Cl. 29—501)



1. A fluxless method of making a fabricated structure from metallic members selected from the group consisting of aluminum and its alloys comprising the steps of:

(a) assembling the members in desired brazing relationship;

(b) providing at the proposed juncture between the members an alloy including about 3—15% Si; about 0.4–10% Mg; with the balance aluminum and incidental impurities;

(c) providing a non-oxidizing atmosphere in the space around the members;

(d) raising the temperature of the members to at least about 550° C. but less than the melting point of the members; and then

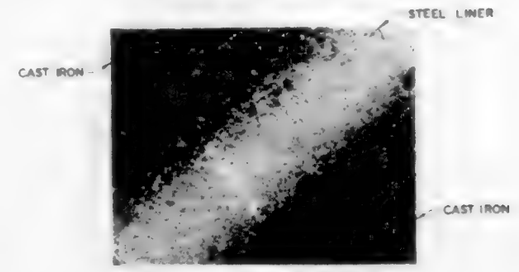
(e) cooling the members below about 550° C. prior to removing them from the non-oxidizing atmosphere.

3,373,484

METHOD OF PRODUCING A GREY IRON STEEL BRAKE DRUM

William B. Larson and Thomas W. Mueller, Saginaw, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 16, 1965, Ser. No. 479,894
3 Claims. (Cl. 29—529)



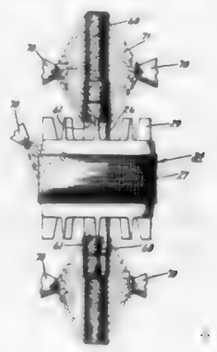
1. A method of producing a composite brake drum consisting predominantly of cast iron and having a durable annular steel braking surface, said method comprised of forming a low carbon steel into the annular shape of said braking surface, casting grey iron entirely about said steel shape in the configuration of the brake drum, heating the composite casting at a temperature above the upper critical temperature of said low carbon steel and below 2000° F. until sufficient carbon has diffused from said grey iron into said steel to raise the carbon content of said annular steel surface from about 0.75 to about 0.88%, and machining said grey iron from the inside surface of said steel annular surface to expose said durable steel braking surface.

3,373,485

METHOD OF PRODUCING A ROTOR AND SHAFT ASSEMBLY

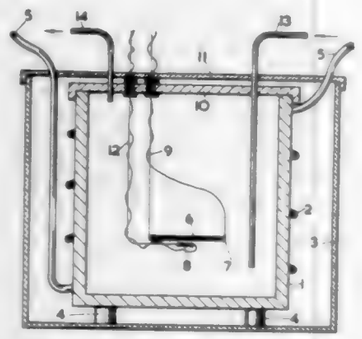
Ronald N. Nelsen, De Kalb, Ill., assignor to General Electric Company, a corporation of New York

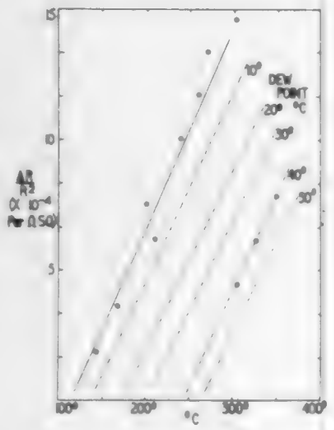
Original application Dec. 16, 1963, Ser. No. 330,677, now Patent No. 3,293,458, dated Dec. 20, 1966. Divided and this application Sept. 13, 1965, Ser. No. 486,806
4 Claims. (Cl. 29—598)



1. A method of fabricating an assembly that has a shaft and rotor core, and forming an adherent, hardened, film of magnesium hydroxide on a preselected portion of the shaft having finished journal surfaces for use in the dynamoelectric machine comprising the steps: applying a solution of magnesium methylate to the preselected portion of said shaft; forming said solution into an adherent, hardened, film of magnesium hydroxide, and assembling the shaft and the rotor core; and maintaining said film below the temperature of 350° centigrade at which magnesium oxide is formed to provide an adherent film for protecting the covered portions of the shaft against corrosion.

3,373,486
METHOD OF MAKING FILM RESISTORS
Shaun Maturin Cox, South Shields, England, assignor to National Research Development Corporation, London, England
Filed Dec. 2, 1963, Ser. No. 327,244
Claims priority, application Great Britain, Dec. 7, 1962, 46,259/62
4 Claims. (Cl. 29—610)

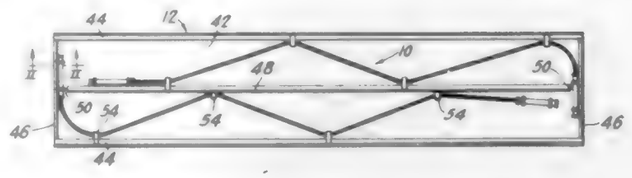




1. A method of stabilizing a resistor of the thin film type comprising: choosing a stabilizing temperature sufficiently high to allow rapid stabilization of resistance and a stabilizing vapour pressure of a polar liquid such that the terminal value of resistance to which the resistor is stabilized at the said stabilizing temperature and the said stabilizing vapour pressure is the value desired at the desired temperature of operation of the resistor, in a controlled environment raising the resistor on its substrate to the said stibilizing temperature while simultaneously establishing the said stabilizing vapour pressure, maintaining the said stabilizing temperature and the said stabilizing vapour pressure for a sufficient length of time for the resistance of the resistor to be stabilized to the extent desired and then cooling and drying the resistor concurrently after stabilization by concurrently reducing the temperature and the vapour pressure of the controlled environment until the said desired temperature of operation of the resistor is reached whereby the stabilized resistance of the resistor is maintained.

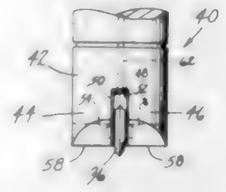
3,373,487
ELECTROSTATIC PRECIPITATOR ELECTRODE HANDLING SYSTEM
Bartholomew F. Quintilian, Baltimore, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,637
7 Claims. (Cl. 29—624)

A system is provided for handling discharge and collector electrodes for electrostatic precipitators for the purpose of simplifying shipping and erection of such electrodes. A cluster of discharge wire electrodes are mounted in sinuous or serpentine fashion to one face of a collector electrode plate so that the collector electrode can be



erected with the wire electrodes in place. The wire electrodes are thereby positioned for simple suspension on the supporting structure.

3,373,488
GLASS CUTTING APPARATUS
Arthur T. Fletcher, Bristol, Conn., assignor to The Fletcher-Terry Company, Bristol, Conn., a corporation of Connecticut
Filed Jan. 25, 1967, Ser. No. 611,623
5 Claims. (Cl. 30—164.95)



A glass cutting device including a cutting wheel and axle supported in a retainer therefor, the retainer being received in glass cutting position within a holder. The retainer is formed with axle supporting bearing surfaces provided by outwardly extending flanges which also cooperate with abutment surfaces on the holder to position the retainer and wheel within the holder.

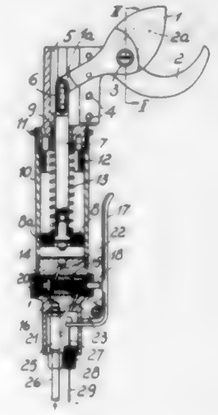
3,373,489
POWER DRIVEN PRUNING SAWS
Alonzo Roy Giles, Ipswich, England, assignor to G. & M. Power Plant Co. Limited, Ipswich, England, a British Company
Continuation of application Ser. No. 454,498, May 10, 1965. This application June 26, 1967, Ser. No. 649,053
Claims priority, application Great Britain, Aug. 19, 1964, 33,892/64
4 Claims. (Cl. 30—167)

A pruning saw for pruning branches of trees and the like comprised of driving means activated by manually operable trigger means mounted at one end of an elongated shaft; the shaft is coupled to the driving means at a first end thereof and is coupled to a driving pinion through a substantially rectangular shaped coupling; the pinion causes the rotation of a substantially annular shaped saw blade having substantially semi-circular openings adjacent each of the saw teeth which the pinion enters in driving the saw blade so as to clear any foreign matter collected therein. The annular shaped saw blade is mounted between covering plates whose rearward ends are adjacent the drive shaft and pinion and whose forward ends

form a pair of cooperating arms of unequal length enabling the pruning saw to be positioned so that its longer extending end may rest against the branch to be sawed. The saw blade is driven in a direction so as to cause the branch being trimmed to bear against the longer arm so as to stabilize the pruning operation.

Positioned between the cover plate is a kerf-retaining blade reciprocally mounted so as to have its forward arcuate shaped end bearing against the inner periphery of the annular shaped saw blade; bias means are caused to bear against the kerf-retaining blade to urge it against the inner edge of the saw blade. Stop means provided at the rearward end of the kerf-retaining blade cooperate with stop blocks secured to the pruning saw cover plates to limit the forward motion of the kerf-retaining blade; a single biasing means is mounted along the longitudinal axis of the pruning saw assembly allowing the kerf-retaining blade to be moved rearwardly as a result of entering the cut made by the pruning saw in order to keep the cut portions of the branch being cut so as to prevent jamming of the pruning saw during the cutting operation.

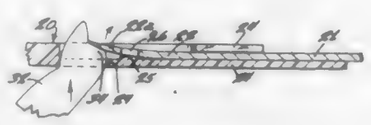
3,373,490
PNEUMATICALLY ACTUATED SHEARS WITH TWO CONTROLS
Ernesto Lendaro, Via Carducci 19, Udine, Italy
Filed Mar. 21, 1966, Ser. No. 535,965
Claims priority, application Italy, Mar. 23, 1965, 6,769/65, Patent 699,956
2 Claims. (Cl. 30—228)



This invention relates to a pneumatically operated shears cutting device for cutting tree branches. The device basically comprises a pair of blades, one fixed and one movable, mounted on a piston cylinder. The movable blade is transmissively connected to a pneumatic power source and is thereby caused to move relative to the fixed blade and effect a cutting action. The length of the device may be adjusted by the addition or removal of cylinder extension sections.

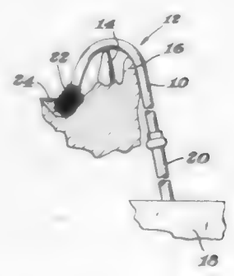
3,373,491
SURGICAL KNIFE AND BLADE EXPELLING TOOL
George A. Montellus, Box 53, Rte. 1, Braham, Minn. 55006
Filed Feb. 9, 1966, Ser. No. 526,228
2 Claims. (Cl. 30—339)

1. In combination, a surgical instrument comprising a scalpel blade holder having a scalpel blade mounted therein, the scalpel blade having a blade portion and shank portion, said scalpel blade holder comprising an elongate holder portion, a blade retaining portion affixed to one end of said holder portion, said blade retaining portion including securing means that accommodates the shank portion of the blade and prevents transverse motion of said blade, said blade retaining portion further including interengaging means received in an aperture in said shank portion of the blade to prevent longitudinal movement of said blade, the improvement comprising, an expeller tool receiving slot located in said blade retaining portion, and expeller tool having a work engaging end including blade release means, blade removal means and pivot means, said work engaging end being receiva-



ble in said expeller tool slot, said release means being engageable with the shank of the blade to release said interengaging means, said pivot means being pivotally engageable with the wall of said expeller tool slot and said removal means being engageable with the shank of said blade to cooperatively move the blade in the longitudinal direction when said expeller tool is being pivoted about said wall, whereby said blade has controlled removal from the blade retaining holder portion of said blade holder.

3,373,492
LIQUID EJECTOR DEVICE
Marvin L. Batch, 2817 Canterbury St., Midland, Mich. 48640
Filed Oct. 31, 1966, Ser. No. 590,973
3 Claims. (Cl. 32—33)

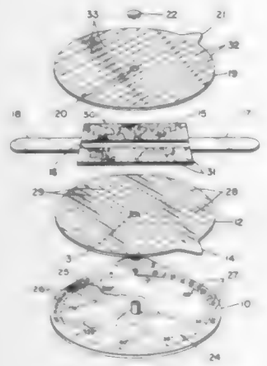


The present invention concerns a liquid ejector device consisting essentially of an eductor tube element and a rigid coiled intersticed liquid intake element pivotally coupled to one end of said eductor tube, the other end of said tube being adapted to internally communicate with suction generating means. The device is highly useful to remove accumulations of liquids from a body cavity, is non-clogging and is characterized by a facility for being comfortably positioned in said body cavity without irritation to body tissues.

3,373,493
NAVIGATIONAL DEVICE
Hugh C. McDonald, Santa Monica, Calif., assignor to Melvin E. Lind, Santa Monica, Calif.
Continuation-in-part of application Ser. No. 190,677, Apr. 27, 1962. This application Apr. 19, 1965, Ser. No. 448,979
5 Claims. (Cl. 33—1)

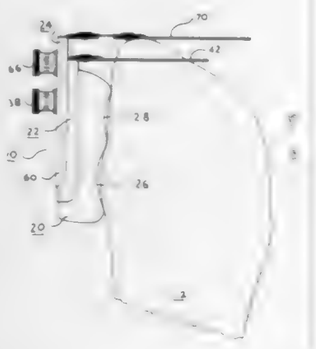
A base plate mounts a map with a compass scale and hour scales for converting sun declination to time. A transparent disc thereon has parallel graduated lines and is rotatable to bring some line into substantial alignment

with two map points for reading off the direction and distance between them. A further slidable and rotatable transparent plate carries a world map ruled with longi-



tude lines and cooperates with a further rotatable disc like the first for determining location of the observer with the aid of a chronometer. The two dics can also be used to diagram a radio fix.

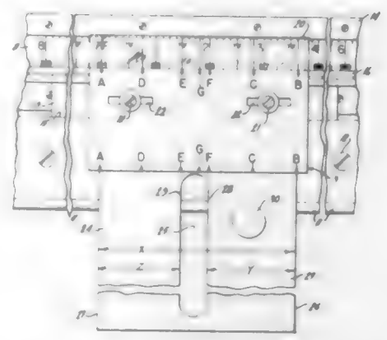
3,373,494
FOOT MEASURING DEVICE
Francis L. Moore, 115 E. 9th St., Rochester, Ind. 46975
Filed July 15, 1965, Ser. No. 472,211
6 Claims. (Cl. 33—3)



A device for measuring foot elongation and fitting shoes, having a member for determining the length of the foot when no pressure is thereon and another member for determining the length of the foot when there is pressure thereon. The two members are adjustable so that the measurement can be translated into the shoe size after the shoe has been placed on the foot.

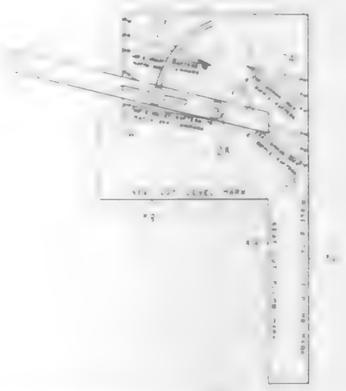
3,373,495
LAYOUT DEVICE
Howard L. Grange, P.O. Box E, Darlington, Wis. 53530
Filed Dec. 27, 1965, Ser. No. 516,571
5 Claims. (Cl. 33—76)

The invention relates to a device for transposing dimensions from building plans to lumber and includes a bench or table which supports the lumber to be dimensioned. A measuring scale is mounted on the bench and a square is mounted for sliding movement on a guide extending parallel to the scale. The square is provided with a transparent head which overlies the scale and a pair of legs extend generally normal to the guide and overlie the lumber to be dimensioned. The distance between the side edges of one of the legs is equal to a dimension of a first type of standard lumber while the distance between the side edges of the second leg is equal to a dimension



of the second type of standard lumber. In addition, the distance between the outer edge of one leg to the outer edge of the other leg is equal to the width of a third type of standard lumber.

3,373,496
VARIABLE PITCH RAFTER TEMPLATE
Sidney N. Nelson, 1050B N. Magnolia Lane, Minneapolis, Minn. 55427
Filed Aug. 22, 1966, Ser. No. 573,936
1 Claim. (Cl. 33—93)

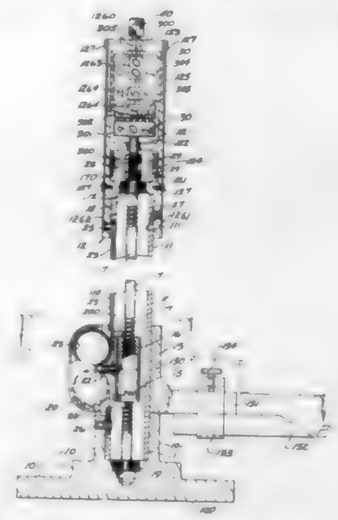


A variable pitch rafter template arranged to mark common and other types of rafters for ridge and tail cuts, seat cuts, and the like. The template is provided with means for pre-setting the device for use with the commonly dimensioned lumber normally employed for forming rafters, and is further provided with indicia for providing a pitch equivalent to those pitches commonly used in construction. The variable pitch rafter template is further provided with an inner apex which has a pair of blades extending at right angles therefrom, each blade having an edge surface projecting from said apex, and defining a marking surface for the level seat cut and plumb seat cut respectively.

3,373,497
HEIGHT GAGES
Gerald F. Lewis, 1850 Columbia, Berkley, Mich. 48072
Filed Sept. 17, 1965, Ser. No. 488,038
6 Claims. (Cl. 33—170)

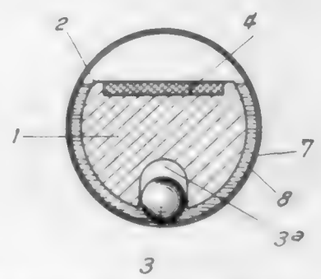
A height gage in which a hollow stanchion fixed to the base houses a longitudinal screw journaled in ball bearings and rotatably drivable by manually sliding a ball nut thereon axially of the stanchion. The ball nut is connected to and moves with a handle on the gage arm. The screw is coupled to a fine adjustment knob and to a gage height

counter having its last digit wheel peripherally graduated. The longitudinal guide slot in the stanchion, through



which the handle connects with the ball nut, is closed by two tapes reeled within the handle.

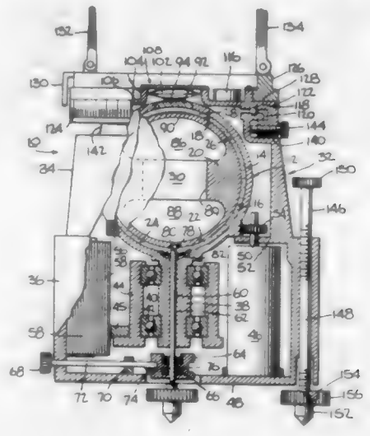
3,373,498
MAGNETIC COMPASS
Henri Jules Chabbert, "Lacasanous," Ave. d'Attigny, Pau, Basses-Pyrenees, France
Filed June 7, 1966, Ser. No. 555,804
Claims priority, application France, June 11, 1965, 20,527, Patent 1,464,612
3 Claims. (Cl. 33—223)

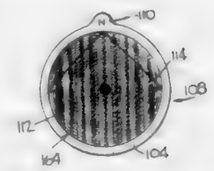


A compass housing contains a fluid buoyantly supporting a spherical float. A segment of the float is removed so as to form a flat surface having a magnetic rod fixed secured thereto. The float also has a recess located diametrically opposite the magnetic rod. A guide ball is rotatably received within the recess and projects therefrom so that it rollingly engages the internal spherical surface of the housing. Gravity tends to maintain the guide ball in the lowermost position within the housing and thus to maintain the flat surface of the float substantially horizontal.

3,373,499
PORTABLE NORTH-INDICATING GYROSCOPIC INSTRUMENT
Wilhelm Ernst Rothe and Aaron George Loughead, Huntsville, Ala., assignors to Belock Instrument Corporation, College Point, N.Y., a corporation of New York
Filed Mar. 30, 1964, Ser. No. 355,643
4 Claims. (Cl. 33—226)

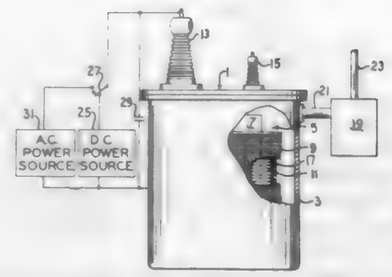
1. A portable gyroscopic instrument for determining the locations of the cardinal points of the earth with respect to the position of the instrument, especially in field use, said instrument comprising a cage, means to support said cage for rotation about a vertical earth-fixed axis, said cage having a hollow spherical interior, motor means for rotating said cage about said earth-fixed axis, a sphere having a mass distribution providing a preferred axis of rotation, said sphere being located within the cage, a liquid of greater density than the density of the sphere, said liquid being disposed within the cage and buoying the sphere and hydraulically coupling the cage to the sphere for mutual rotation, said liquid forming a thin liquid bearing film completely separating the sphere from the cage to freely support the sphere within said cage when the cage is rotated, so that the axis of rotation of





the sphere is inertially space-fixed within the cage and due to the west-east rotation of the earth is displaced from the axis of rotation of the cage by a lag angle in the east-west vertical plane, and readout means for determining the orientation of the vertical plane of said lag angle whereby to ascertain the position of said instrument with respect to the cardinal points, said readout means including two Fresnel figures, one disposed on a pole of the cage and the other disposed on an adjacent pole of the sphere, which Fresnel figures when displaced in the direction of the lag angle produce a moiré pattern.

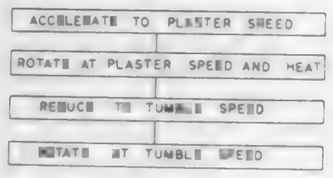
3,373,500
METHODS FOR DRYING ELECTRICAL APPARATUS
David F. Winter, Kirkwood, Mo., assignor to Central Transformer Corporation, Pine Bluff, Ark., a corporation of Arkansas
Filed Aug. 26, 1966, Ser. No. 575,302
10 Claims. (Cl. 34—1)



1. In a method of drying electrical apparatus having a core-and-coil unit including moisture-absorbing insulation and at least one outer winding which will generate a

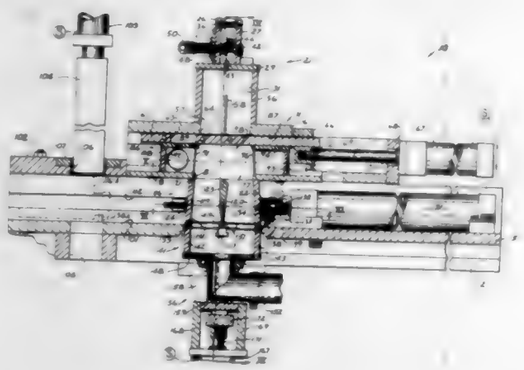
desired amount of heat when energized at an A.C. voltage level sufficient to produce a predetermined value of current; the step of energizing said winding, while said core-and-coil unit is under partial vacuum, from a D.C. power source at a voltage substantially less than that of said A.C. voltage level to produce a current of said predetermined value whereby substantially the desired amount of heat is generated by said winding at greatly reduced dielectric stresses.

3,373,501
PROCESS OF DRYING FABRICS IN A ROTATABLE RECEPTACLE
Joseph C. Worst, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 418,239, Dec. 14, 1964. This application Dec. 23, 1966, Ser. No. 609,986
6 Claims. (Cl. 34—8)



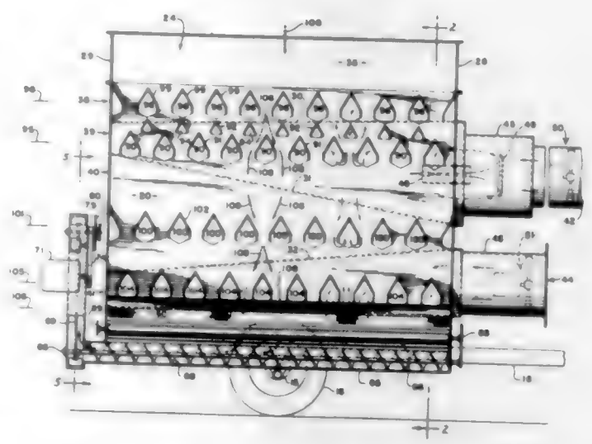
A process of drying fabrics in a rotatable receptacle wherein the receptacle is rotated at plaster speed while heat is supplied until the moisture remaining in the fabrics is reduced to approximately the critical moisture content of the fabrics. Thereafter the speed of the receptacle may be reduced to tumble speed for the remainder of the drying process. Also, thereafter, the speed of the receptacle may be alternated between plaster speed and tumble speed for the remainder of the drying process.

3,373,502
PRE-HEATER WITH VERTICALLY FLOWING AIR STREAM
James W. Hendry, Fremont, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed July 25, 1966, Ser. No. 567,630
19 Claims. (Cl. 34—10)



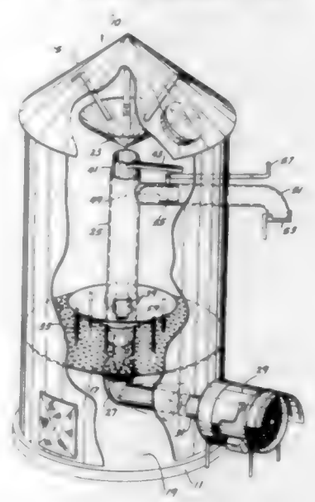
19. A process for preheating a granular organic plastic material, comprising the steps:
causing a charge of granular plastic material to fall into a heating chamber through a preselected path in response to gravitation;
causing a stream of heated gas to flow downwardly through the charge of granules in said heating chamber to evenly heat said granules so as to form at least one cake of softened plastic material;
positively transferring said heating chamber with said cake therein horizontally away from said path;
discharging said cake from the heating chamber;
returning said heating chamber to said path for receiving a further charge of granules.

3,373,503
GRAIN DRYING PROCESS AND APPARATUS
Charles M. Kline, Reinholds, and Albert M. Best, New Holland, Pa., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,968
9 Claims. (Cl. 34—33)



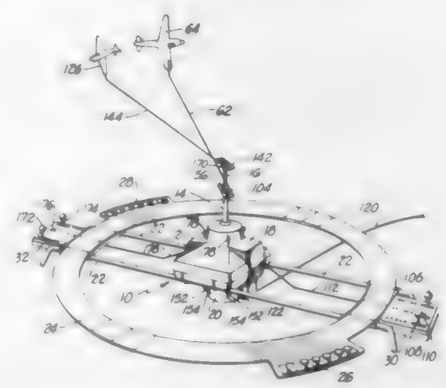
A continuous grain flow grain drying process and apparatus having air inlet and exhaust ducts particularly relatively located to enable the use of considerably higher drying air temperatures than those of conventional grain driers.

3,373,504
AIR-DRIVEN GRAIN CIRCULATING MEANS
Daryl C. McIntire, Seymour, Iowa 52590, and Oran Clark, Corydon, Iowa 50060
Filed Apr. 20, 1965, Ser. No. 449,509
10 Claims. (Cl. 34—57)



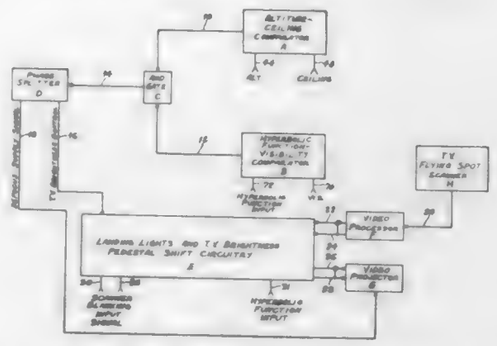
A grain circulating means for a storage bin having a horizontal floor spaced above the bin bottom. A first pipe is vertically disposed in the bin and extends downwardly through the horizontal floor and has a plurality of spaced apart first openings positioned below a plurality of spaced apart second openings. An inverted cone-shaped central floor surrounds the first pipe between the first and second openings and a second pipe is movably mounted in and embraced by the first pipe and which has a plurality of spaced apart third and fourth openings which are adapted to register with the first and second openings at times. The second pipe is operatively connected on air means which supplies a volume of air to the interior thereof.

3,373,505
ELECTRO-MECHANICAL FLIGHT SIMULATOR
Council A. Tucker, 3200 Buckingham Road, Glendale, Calif. 91206
Filed June 23, 1966, Ser. No. 559,864
25 Claims. (Cl. 35—12)



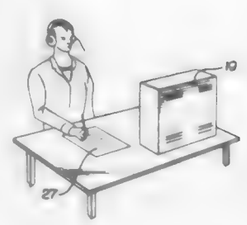
A model aircraft is mounted spaced laterally from a vertical, rotatably driven shaft by a rigid connecting rod, said rod being rotatable with said shaft but vertically, angularly pivotal relative thereto. At least one roller rides against said shaft supported so that selective angular adjustment of the roller axis relative to the shaft axis causes the roller to move up and down or remain vertically stationary along the shaft from shaft rotation. A rigid connection between the roller and the rod translates roller vertical movement into rod and aircraft vertical movement. A second aircraft following the same flight path may be controlled by duplicate, identical mounting, the second drive shaft telescoped within the first extending above and below for the respective connecting rod and roller connections.

3,373,506
AIRCRAFT LANDING LIGHTS SIMULATOR
Dorsey Davidoff, Fort Lee, N.J., assignor to Dalto Electronics Corp., Norwood, N.J., a corporation of Delaware
Filed Aug. 16, 1966, Ser. No. 572,866
8 Claims. (Cl. 35—12)



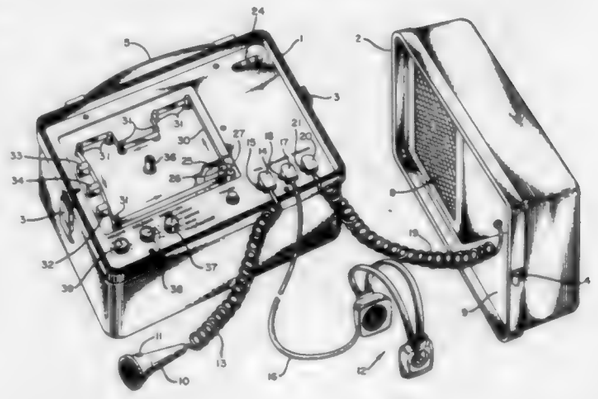
In accordance with this invention means producing a variable blanking pedestal are provided to control the brightness of each line of a television presentation as a function of landing lights, visibility and ceiling and this variable is summed to a system video to form a composite video signal. Coupled with this capability is a signal generator means producing a video signal of a scene in which the level of brightness of background material is not more than 30% of the level of brightness of the airport lights such that landing lights can be simulated by variation of the pedestal blanking level of the video.

3,373,507
MNEMONIC TEACHING SYSTEM
Judson E. Cornish, 405 S. Cliffwood, Los Angeles, Calif. 90049
Filed May 3, 1965, Ser. No. 452,656
10 Claims. (Cl. 35—14)



Education, teaching code signalling through the use of mnemonic words, particularly teaching sending and receiving of Morse code symbols through the use of mnemonic words having rhythmic patterns similar to the code symbols.

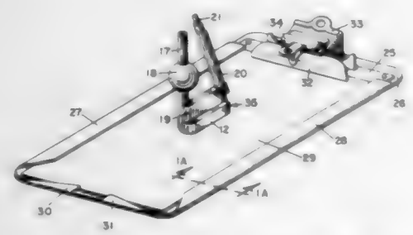
3,373,508
TEACHING APPARATUS
Ruth J. Holden and Scott D. Holden, Palo Alto, Calif., assignors to HC Electronics, Inc., Palo Alto, Calif., a corporation of California
Filed Oct. 29, 1964, Ser. No. 407,448
12 Claims. (Cl. 35—35)



1. Teaching apparatus of the type which comprises an endless recording medium of predetermined length sensitive throughout its entire length, recording means cooperating with said medium for recording sounds thereon, a microphone having means for selectively connecting its output to the recording means to selectively record sounds applied to the microphone on said recording medium, playback means cooperating with said recording medium for reproducing sounds recorded thereon, erasing means between said playback and recording means for erasing the sounds recorded on said medium, means for continuously driving the recording medium past said recording means, playback means, and erase means; means

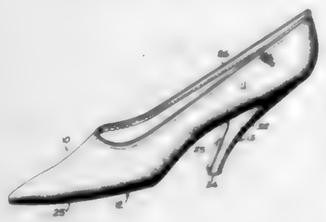
mounting said playback means at a position spaced from said recording means a distance along the direction of travel of said medium equal to a major portion of the length thereof, and means for simultaneously energizing said recording means, playback means, erasing means and drive means whereby sound is recorded, and played back only after the recording medium has travelled over a major portion of its length, and then erased.

3,373,509
HANDICAPPED CHILDREN WRITING AID
William C. Brass, 354 N. Audubon Road, Indianapolis, Ind. 46219
Filed Jan. 5, 1966, Ser. No. 518,830
10 Claims. (Cl. 35—36)



A writing aid for the physically handicapped comprising a base for supporting a writing instrument in a position to mark upon a sheet of paper or the like held upon a hard, smooth surface, said base being provided with a preferably bulbous grip and, in its preferred form, being magnetically attracted to the element underlying the paper to a degree which does not significantly interfere with movement of said base over the surface of the paper.

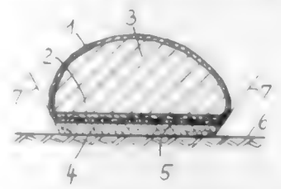
3,373,510
DECORATIVE SHOE COVER
Ralph Memole, 4911 Tyler St., Hollywood, Fla. 33021; Jack S. Liebmann, 420 Lincoln Road, Suite 206, Miami Beach, Fla. 33139; Harold Barkowitz, 312 Aledo Ave., Coral Gables, Fla. 33134; and Daniel Meszaros, 12000 W. Golf Drive, Miami, Fla. 33167
Filed Nov. 24, 1965, Ser. No. 509,528
9 Claims. (Cl. 36—2.5)



A removable, decorative, form-fitting shoe cover for women's shoes wherein the shoe upper cover portion is formed of a flexible, stretchable material having an integrally-formed sole shank portion defining therewith a sole-receiving opening and a heel-receiving opening, and including a flexible sole member secured to the shoe upper cover portion at the sole-receiving opening.

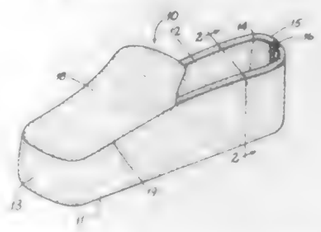
3,373,511
SOLES FOR SKATING BOOTS
Gerhard Krapp, Marktplatz 5, Kups, Germany
Filed Oct. 26, 1966, Ser. No. 589,602
Claims priority, application Germany, Nov. 12, 1965, L 52,131
7 Claims. (Cl. 36—2.5)

A skating boot having an insole, an upper lasted over the insole and an outer sole, wherein the bottom surface of the outer sole of the skating boot has a width smaller than the upper surface of the outer sole, which faces the



lasted upper, so that the lateral surfaces of the outer sole extend at an obtuse angle to the bottom surface thereof.

3,373,512
FOOT COVER
Sidney H. Jacobson, 11880 Conway Road, St. Louis, Mo. 63131
Filed Aug. 24, 1966, Ser. No. 574,774
5 Claims. (Cl. 36—7.1)



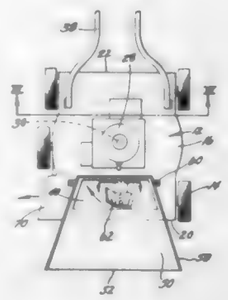
The device consists of a unitary, thermally insulative, very lightweight shoe cover of a rigid foam material, sized to slip over the regular shoe, to keep the wearer's foot warm but not to be walked in, the same to be readily portable so as to be carried to athletic events, and, while there, to be applied over the street shoe to keep the wearer's foot warm. It can give some foot protection against being crushed.

3,373,513
SHOE WITH HEEL RETAINING DEVICE
Wallace T. Jewell, 3304 Mount McKinley Road, San Jose, Calif. 95127
Filed Jan. 28, 1966, Ser. No. 523,738
4 Claims. (Cl. 36—80)

The heel retaining device of the present invention comprises a female member that is secured to an inner sole of a shoe, and a male member that adheres to the plantar surface of the wearer's heel. By disposing the male member in interlocking engagement with the female member, the heel retaining device holds the heel of the wearer's foot at a prescribed location relative to the shoe.

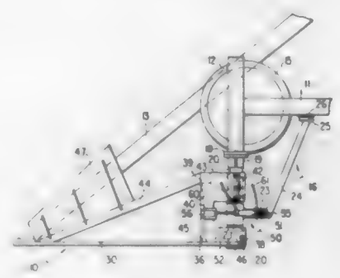
The female member has a plurality of layers surrounding the receptacle in which a layer thereof is more resilient than its adjacent layer. Likewise the projection of the male member has a plurality of layers in which a layer thereof is more resilient than its adjacent layer. When the projection of the male member is received by the receptacle of the female member, more resilient layers are aligned with less resilient layers. Through this arrangement each more resilient layer flows under pressure to grip the less resilient layer aligned therewith.

3,373,514
CONVERSION UNIT FOR ROTARY MOWERS
Richard E. Forren, 972 Fairwood Ave., Marion, Ohio 43302
Filed Mar. 17, 1965, Ser. No. 440,435
3 Claims. (Cl. 37—43)



A converted lawn mower snow removal apparatus having a snow ramp, and having vertically extending, plow type snow thrower elements and also suction forming sweep elements on the blades.

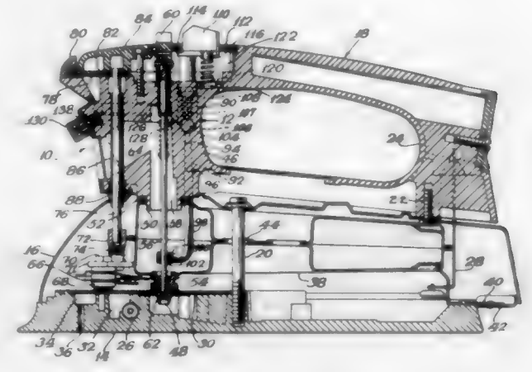
3,373,515
SNOW GATE ATTACHMENT FOR GRADERS
Heinz Schneider, 59 27th St. E., Prince Albert, Saskachewan, Canada
Filed Apr. 29, 1965, Ser. No. 451,769
Claims priority, application Canada, Feb. 26, 1965, 924,233
8 Claims. (Cl. 37—50)



Attachment for a material-handling blade particularly suited for use on the blade of a grader to selectively prevent discharge of material at the end of the blade during snow removal operations. The attachment is secured to the frame of the grader and is adapted to be pivoted in a vertical plane which extends in the direction of travel of the grader.

3,373,516
COMBINATION HANDLE AND PUMP FOR STEAM AND SPRAY IRONS
Robert S. Knapp and Charles F. Camilleri, St. Louis, Mo., assignors to Knapp-Monarch Co., a corporation of Delaware
Filed Dec. 1, 1965, Ser. No. 510,820
6 Claims. (Cl. 38—78)

An improved spray for a spray iron is provided by defining integral in the handle itself a chamber into which water is ingested and pressurized by a piston for movement to the spray nozzle through a water outlet passage defined in the handle. Two springs are used, a light one in the chamber between the piston and an intake check valve, and a heavier one in combination with a push button movable with the piston. The water outlet passage is formed by an open channel in the handle in combination with a cover member cemented in place, so that both the handle and cover may be formed of molded



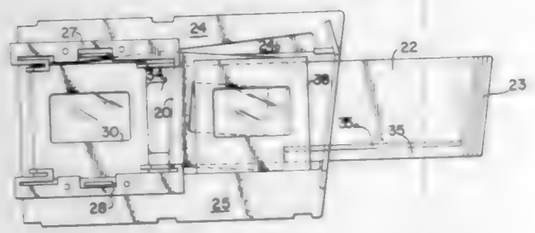
plastic material. The water outlet passage connects to the lower end of the chamber and includes means limiting its size so that priming may be easily effected.

3,373,517
CHANGEABLE BILLBOARD SIGN
Jack S. Halperin, 2820 W. Glen Lake Ave., Chicago, Ill. 60645
Filed Apr. 1, 1966, Ser. No. 539,364
15 Claims. (Cl. 40—65)

1. A changeable billboard sign assembly adapted to be secured to the side of a building or supported on a base anchored to a horizontal support surface, said billboard sign comprising: a stationary frame and a movable frame for supporting indicia carrying sign elements thereon, a first series of sign element anchoring means along one margin of one of said frames and an associated second series of sign element anchoring means along the opposite margin of the latter frame, a first group of relatively long slat-like sign elements suspended in overlapping relation between said first and second series of sign element anchoring means, the forwardly facing exposed surfaces of the overlapping sign elements having billboard sign-forming indicia thereon, one of said series of sign element anchoring means including spring means which are placed under tension by the associated suspended sign elements anchored thereto to maintain the associated sign elements in a relatively taut condition, a group of slat-like sign elements on said other frame and which are shorter than said first group and have billboard sign-forming indicia on forwardly facing surfaces thereof, said movable frame being supported for

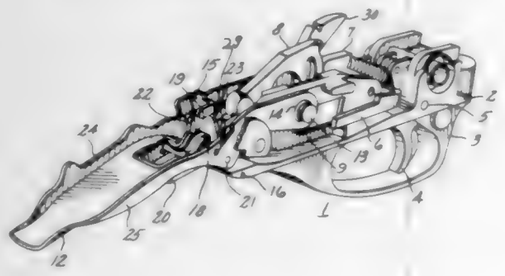
movement transversely of the length of said slat-like sign elements between opposite extreme positions, said shorter group of sign elements interleaving with said first group of sign elements and in one extreme position of the movable frame being hidden behind said first group of sign elements and in the other extreme position of the movable frame covering the exposed indicia carrying portions of the first group of sign elements, the indicia carrying surfaces of said shorter sign elements then being exposed, and means for automatically periodically moving said movable frame between said extreme positions.

3,373,518
SLIDE CHANGING DEVICE
Frank P. Bennett, Northbrook, Ill., assignor, by mesne assignments, to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 582,995
7 Claims. (Cl. 40—79)



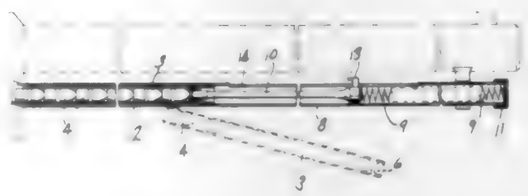
A stack of slides is supported with the respective edges thereof in parallel relation with the orientation of the same edges of a slide in the display position. The foremost slide in the stack is frictionally held at the entrance to a guideway for transfer to the slide display position by being engaged on one side thereof by the adjacent slide in the stack and by being engaged on the other side thereof by a guideway surface, such surface engaging the slide at a margin thereof which parallels the direction of slide changer movement. The slide changer includes a formation arranged to engage the trailing edge of the slide adjacent a corner of the slide which adjoins an opposite marginal portion thereby to rock the slide in its own plane to minimize edgewise interference between such foremost slide and the adjacent slide in the stack.

3,373,519
CARRIER LATCH RETAINER FOR AUTOLOADING FIREARMS
Walter L. Dahl, Herkimer, and James S. Martin, Mohawk, N.Y., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 627,785
7 Claims. (Cl. 42—17)



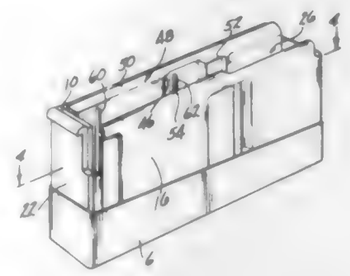
A fire control mechanism for autoloading firearms including a shell carrier arranged to transfer shells from the magazine to the chamber of the firearm. A carrier latch is arranged to hold the shell carrier in a position to receive shells from the magazine. Shells fed from the magazine move the carrier latch out of engagement with the carrier to allow the shell to be fed to the chamber. A retainer is formed on the carrier to prevent the carrier latch from relatching the carrier prior to the shell being fed to the chamber.

3,373,520
AMMUNITION PACKAGE AND MAGAZINE
Henry A. Into, Wallingford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Feb. 23, 1967, Ser. No. 618,094
4 Claims. (Cl. 42—49)



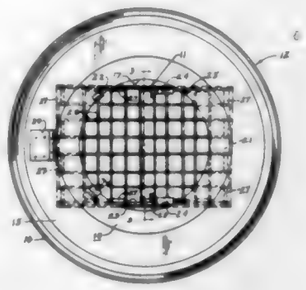
3. A combined ammunition package and gun magazine comprising a tubular housing attached to a firearm, a semi-rigid tubular member removably mounted within said tubular housing, a plurality of cartridges positioned in said tubular member, a follower mounted in one end of said member and forming a closure for said one end, a follower rod and spring mounted in said tubular housing operative to engage said follower and move said follower under spring force toward the other end of said package to feed cartridges into a firearm mechanism, and means in said tubular housing operative to retract said follower rod and spring to facilitate the removal of said package from said tubular housing after it is empty.

3,373,521
CARTRIDGE MAGAZINE
Henry A. Into, Wallingford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Sept. 16, 1966, Ser. No. 580,093
11 Claims. (Cl. 42—50)



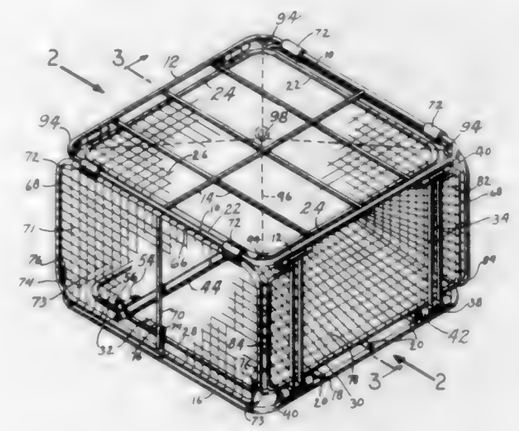
For use in conjunction with a firearm having a multilugged bolt, a cartridge magazine comprising a side wall, a pair of end walls, a bottom wall, and a partition member spaced apart from the side wall and extending between the end walls to define a cartridge-receiving chamber with a spring-biased follower disposed therein. The side wall includes rear cartridge control means, cartridge guiding means, and an inwardly turned, axially inclined feed lip at the upper end thereof. The partition member includes frontal cartridge control means, cartridge guiding means, and a downwardly and inwardly tapering upper portion forward of the frontal cartridge control means.

3,373,522
CONTAINER
Alan M. Staubly, 4940 Colfax Ave., Minneapolis, Minn. 55409
Filed June 7, 1965, Ser. No. 461,616
9 Claims. (Cl. 43—55)



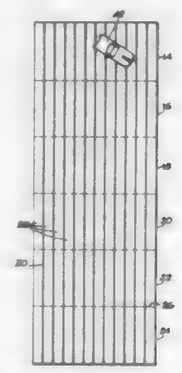
A closure for a conventional minnow bucket that may be quickly attached to and removed from the wall around the opening therein. The closure has an opening there through and has a plurality of button-shaped support members around the periphery of the opening. One set of rubber bands is stretched across the opening and engages one or more of the members on opposite sides of the opening and lies in one plane, and a second set of rubber bands is similarly stretched across the opening generally at right angles to the first set and lies in a second plane. Quick-connect fastening means is provided which does not materially interfere with the continued use of the regular cover as a supplemental closure. By lying in different planes and at right angles to each other, the two sets of bands permit the insertion of one's hand through the bands without enlarging any of the adjoining holes in more than one direction, which leaves the bands in the other direction to keep the holes between the bands sufficiently small to prevent the escape of frogs or other types of bait therefrom.

3,373,523
CRAB TRAPS OR POTS
Theodore T. Olafson, Box 251, Kodiak, Alaska 99615
Filed June 24, 1965, Ser. No. 466,767
9 Claims. (Cl. 43—100)



This invention relates to a collapsible crab pot or trap, characterized in general by having outer spaced apart top and bottom frame members having end and side rails. A plurality of link members pivotally interconnect the end rails of said top and bottom frame members. Mesh covered inner top and bottom frame members, having end and side rails, are secured respectively to said outer top and bottom frame members. A variable length diagonal brace is pivotally interconnected to the end rails of the inner frame members. Mesh covered, hingedly mounted door means are carried by said outer frame members. Also, crab entrance tunnels to the interior of the crab pot are provided.

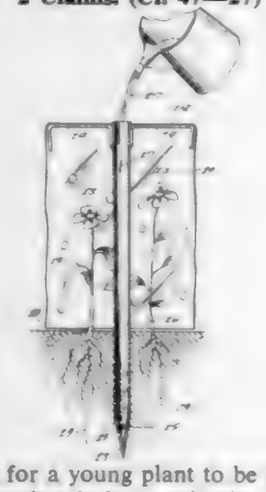
3,373,524
ELECTRICALLY OPERATED VEHICLE AND MODULE FOR A COURSE FOR THE VEHICLE
Irving Nirenberg, Opa-Locka, Fla., assignor of fifty percent to Louis Barreiro, Miami, Fla.
Filed Dec. 9, 1965, Ser. No. 512,754
6 Claims. (Cl. 46—244)



1. In combination, a movable member and a track; said track being composed of at least one module, each of said modules of said track comprising; a bed of insulating material, a plurality of spaced conductive strips in generally parallel relation fastened over one main surface of the module, said insulating material of said bed separating said strips and defining a common exterior plane for the module between the strip, each of said strips being flush with said surface and separated from the other strips by said insulating material; each of the strips being of one polarity when electrically connected to a power source which is opposite to the polarity of the strips adjacent and abutting the insulation material along said strip; means electrically connecting each of said strips to a power source to permit current flow through any two parallel strips separated by said insulating material when the strips are bridged by an electrically conductive material; said movable member comprising: a body movably supported on the module, a first and a second spaced contact brush of electrically conductive material depending from said body and arranged to engage the surface of the module when the vehicle is supported thereon; each of said brushes being of a minimum module surface-engaging area such that the greatest distance through the area is less than the smallest distance between any two strips so that each brush can only engage one strip at any one time; the distance between the center line of the brushes of the body being the same as or a multiple of the distance between the center lines of insulating material on either side of the strips; drive means on the body and electrical conductor means to connect said drive means to each of the brushes to be energized on current flow from said source, said drive means being arranged to propel the body over the surface of the track; control means on the body electrically in series between the brushes and the drive means to control current flow to the drive means; and signaling means remote from said body to operate said control means, said control means being responsive to the signaling means to vary the current flow to the drive means; a bridging member is provided to support the brushes in spaced relation, said bridging member being rotatably mounted on said body; spring means connecting said member and said body to normally urge said member into a first position; a sensing drive means on said body and mechanically connected to said member to normally urge said member into a second posi-

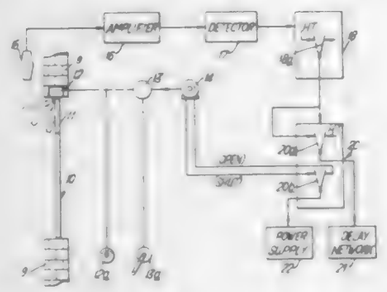
tion angularly displaced relative to said first position; stop means to limit movement of said member; said third drive means being normally energized when said brushes are in engagement with strips of opposite polarity and said sensing drive means being adapted to overcome the tension of said spring when energized whereby the spring will rotate the brushes on interruption of current flow as when one of the brushes is in engagement with insulating material, so that the motor will become energized again.

3,373,525
PLANT PLASTIC CAP
Dolores B. Cavataio, 2850 S. 128th St., New Berlin, Wis. 53151
Filed Sept. 2, 1966, Ser. No. 576,872
2 Claims. (Cl. 47—27)



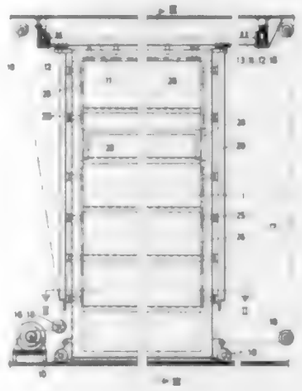
An enclosure for a young plant to be protected against adverse cold weather before springtime sets in, the enclosure comprising a clear, transparent, plastic bag to admit sun rays therethrough, and with breather perforations for admitting air to the plant, the bag being supported on a hollow post open at its lower end for receiving water to be transported to the plant roots.

3,373,526
ACOUSTICALLY CONTROLLED CLOSURE APPARATUS
Peter Hubert Parkin, Garston, Watford, England, assignor to National Research Development Corporation, London, England, a corporation of Great Britain
Filed May 25, 1965, Ser. No. 458,651
11 Claims. (Cl. 49—25)



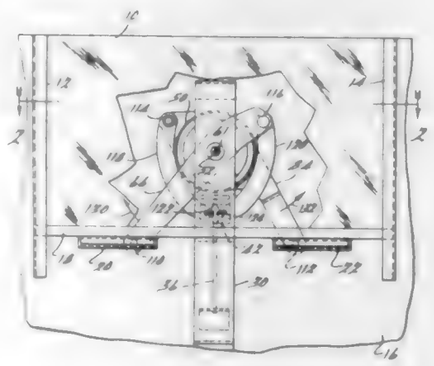
1. Acoustically controlled closure apparatus comprising an apertured member adapted to form part of a boundary wall of an enclosure, a closure member movable between a closed position in which an aperture in the apertured member is closed and at least one open position in which the said aperture is at least partially opened, a sound detection device responsive to a predetermined noise level about the enclosure, control means which are controlled by the sound detection device and delay means included in said control means said control means operating, when the closure member is at least partially open and the sound detection device detects a noise level in excess of said predetermined level, first to close the closure member and, a predetermined time, determined by said delay means, after the noise level has fallen below the said predetermined level, subsequently to re-open the closure member to restore it to its at least partially open position.

3,373,527
ESSENTIALLY VERTICAL DOORS ADAPTED TO BE OPENED BY A SIDEWARD MOVEMENT
Johan Bertil Olsson, Goteborg, Sweden, assignor to Associated Cargo Gear, A.B., Goteborg, Sweden, a corporation of Sweden
Filed Nov. 25, 1966, Ser. No. 596,977
6 claims. (Cl. 49—212)



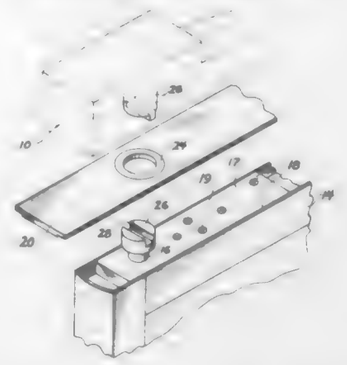
This invention relates to track-supported vertical doors of the type openable by a sideward movement, and is concerned with improved mechanism for manipulating such a door including sealing the latter against its complementary door frame in a wall or bulkhead. According to the invention, the door is slidably associated with a track adjacent the upper part of the door by means of a wheeled mechanism secured to that side of the door which is remote from the bulkhead, and is adapted to be tilted away from the door frame when opened.

3,373,528
ACTUATOR WITH MULTIPLE REVERSELY OPERABLE OUTPUT MEANS
David V. Tinder and Melvin L. Ollman, Detroit, and Joseph Adamski, Brooklyn, Mich., assignors to Dura Corporation, a wholly owned subsidiary of Walter Kiddie & Company, Inc., a corporation of New York
Filed Aug. 2, 1965, Ser. No. 476,525
32 Claims. (Cl. 49—349)



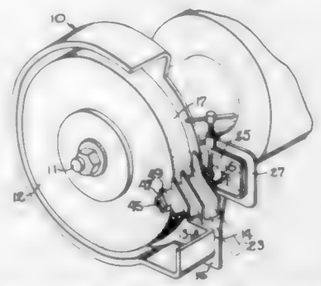
There is herein disclosed a power actuator arrangement for a vehicle window comprising a pair of rotatable actuator arms driven by a reversible axial air gap type electrical motor having a disc armature through harmonic motion transmission means.

3,373,529
PIVOTAL MOUNTING FOR AUTOMATIC DOOR
Gary G. Ingham, Oklahoma City, Okla., assignor to Roto-Swing Door Co., Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Oct. 31, 1966, Ser. No. 590,608
4 Claims. (Cl. 49—381)



1. A pivotal connection between a door operator and a door mounted in a door opening and which comprises shaft means carried by the door operator, pivot shaft means carried by the door means for independently journaling the pivot shaft in the door opening for pivotal movement of the door therein, and means providing removable driving engagement between the door operator shaft means and the pivot shaft means whereby the door operator may be removed and installed independently from the door to permit uninterrupted use of the door.

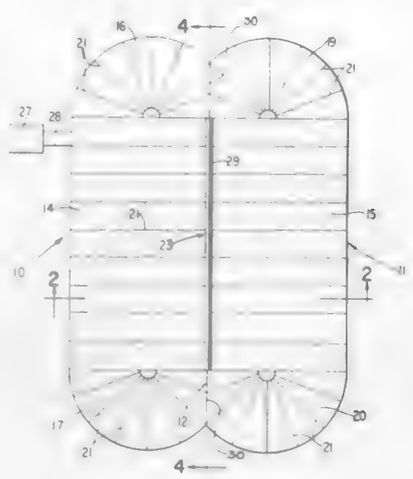
3,373,530
SHARPENING FIXTURE FOR TWIST DRILLS
Clyde E. Cooprider, R.R. 1, Rochelle, Ill. 61068
Continuation-in-part of application Ser. No. 386,299, July 30, 1964. This application July 30, 1965, Ser. No. 476,027
1 Claim. (Cl. 51—238)



A fixture attachable to the steady rest of a wheel type grinder including a generally flat plate having a plurality of upstanding flanges inclined relative to the forward edge of the plate at a conventional drill tip angle. The opposite end of the plate is stepped to provide fulcrums differently spaced from the front edge of the plate and providing fulcrums for accommodating different lengths of drills during sharpening.

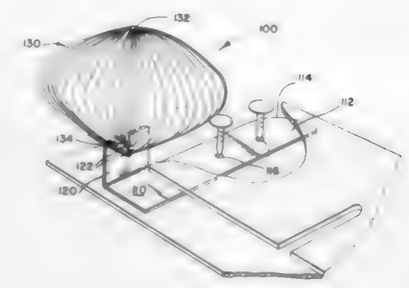
3,373,531
WIDE SPAN INFLATED STRUCTURE
Hans Meyer, White Plains, and Kurt Meyer, Riverdale, N.Y., assignors to Air-Tech Industries, Inc., New Rochelle, N.Y., a corporation of New York
Filed Apr. 4, 1966, Ser. No. 540,085
4 Claims. (Cl. 52—2)

A wide span inflated structure comprising two elongated arcuate building sections intersecting along a longitudinally extending line, a rigid tubular member extending along the line of intersection, and a cable extending



through the tubular member and anchored at each end to maintain the contour of the building against the thrust of air pressure within the building.

3,373,532
GLOBE SNOW ARRESTOR
Hinman F. Strange, Spotswood Trail, Gordonsville, Va. 22942
Filed Jan. 23, 1967, Ser. No. 610,957
5 Claims. (Cl. 52—24)

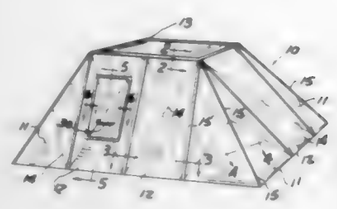


This may be defined as a snow arrestor for roofing constructions which is adapted to provide maximum contact of the arrestor per se to snow gathered on roofs. The size of the unit, compared to existing units is substantially the same, the plural snow retaining wires are multiple and present a barricade in depth to the snow, yielding thereby a better means of securing and arresting the snow against falling from the eaves damaging planting and destroying gutters. The arresting of snow in depth permits accumulated snow to melt more gradually than heretofore.

Modifications of invention are adapted to three basic types of roofing, namely slate and/or slate composition; tile and corrugated roofing construction.

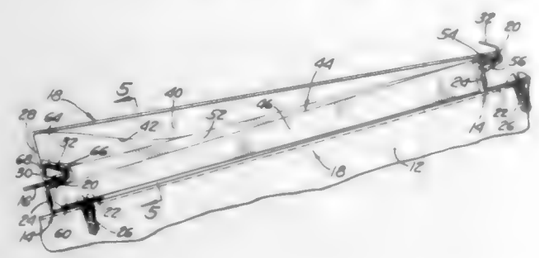
More simply stated, an open wire globe is secured to a flat or curved metal bracket, which said bracket is adapted to fit under conventional shingles or tiles or over corrugated roofing. This globe which has the appearance of a bird cage is thus presented perpendicularly to the slope of the roof, approximately several inches above the shingles so as to hold melting snow in depth, in place.

3,373,533
COLLAPSIBLE RIGID TENT
Gerald J. Trelfa, 14721 Stephens, East Detroit, Mich. 48236, and Herbert G. Haynie, 24281 Stewart, Warren, Mich. 48089
Filed May 5, 1966, Ser. No. 547,881
1 Claim. (Cl. 52—82)



A collapsible rigid tent formed of corner pieces and intermediate rectangular panels, and topped by a large area rectangular panel which holds all the parts together.

3,373,534
ATTACHMENT CLIP FOR METAL SHINGLES
Jack A. Berridge, Riverside, Calif., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York
Filed Feb. 1, 1966, Ser. No. 524,318
6 Claims. (Cl. 52—90)



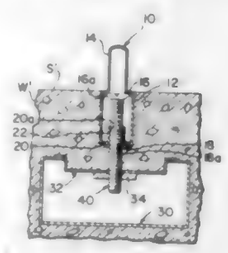
1. An attachment clip for assembling a metal shingle to a pair of spaced-apart, parallel purlins which are mounted horizontally on inclined roof rafters, said shingles being formed of sheet metal to simulate wooden shingles or shakes and being assembled on said purlins with their lower edges overlying the upper edges of the next lower shingles, each of said shingles having its lower edge bent downwardly and then rearwardly to form a narrow flange, the upper edge of said shingle being bent over to form a forwardly and upwardly inclined lip, each of said purlins being formed with parallel upper and lower flanges connected along one edge by a vertical web, said narrow flange at the lower edge of said shingle resting on the upper edge of the next lower shingle directly over said upper flange of the lower purlin, and the upper edge of said shingle resting on said upper flange of the upper purlin, said attachment clip comprising:

an elongated body of a length to span the distance between said upper and lower purlins;

means at the upper end of said body overlying said upper flange of said upper purlin and interlocking therewith; and

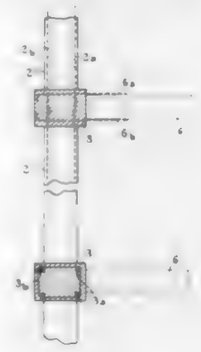
means at the lower end of said body interlocking with said lower purlin and hooking over said forwardly and upwardly inclined lip at the upper edge of the next lower shingle, to secure the lower edge of the one shingle and the upper edge of said next lower shingle to said lower purlin, the upper edge of said shingle being secured to said upper purlin by the attachment clip of the next higher shingle.

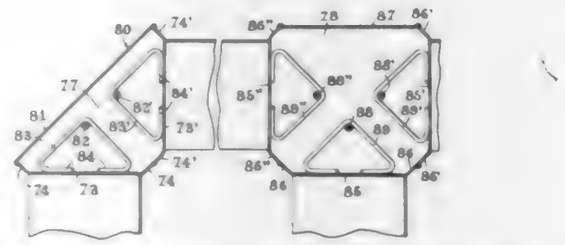
3,373,535
MARKER SCREW CAP
Victor J. Lankes, 41 Olney Drive, Amherst, N.Y. 14226
Filed Mar. 18, 1966, Ser. No. 535,532
8 Claims. (Cl. 52—105)



A rubber cap, for locating and protecting a marker screw threadedly engaged with duct means embedded in poured concrete wall construction, includes a small tube having its closed outer end adapted to project beyond the outer wall surface but to resiliently yield upon engagement with a surface finishing tool, a large tube adapted to surround the screw, a shoulder connecting the inner ends of the tubes and adapted to be engaged by the head end of the screw roughly adjusted almost level with or below the outer wall surface, and a pair of oppositely disposed lateral strips adapted to be turned inwardly across the outer end of the large tube and to fit over the shank end of the screw for maintaining the head end against the shoulder.

3,373,536
SILO OR TANK COMPRISING SEVERAL COMPARTMENTS OR CELLS
André Reimbert, 67 Blvd. de Reuilly, Paris, France
Filed Sept. 24, 1964, Ser. No. 398,943
Claims priority, application France, Sept. 25, 1963, 948,571; Apr. 23, 1964, 971,974
13 Claims. (Cl. 52—234)



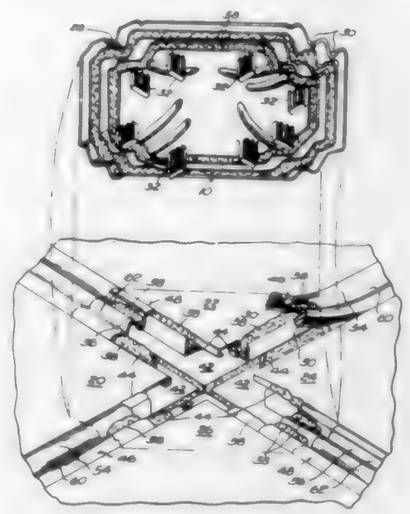


1. A large upright container having a plurality of compartments and comprising, in combination, a substantially continuous outer wall of concrete; a plurality of inner substantially vertical sheet metal panels extending transverse to said outer wall and dividing said container into said plurality of compartments, said panels being formed at least in part with horizontally extending corrugations;

substantially horizontal hook-shaped projections fixed to said panels and projecting beyond the side edges thereof facing said outer wall and being embedded in the latter; and at least one concrete post between and supporting the other side edges of said panels.

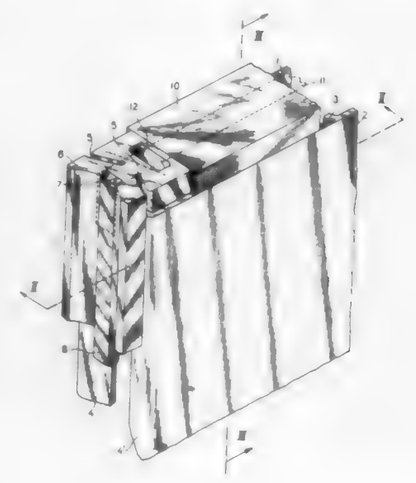
8. A large upright container having an outer substantially vertical and substantially continuous wall and a plurality of substantially vertical dividing walls dividing the interior of said container into a plurality of compartments, each of said walls being formed from horizontally corrugated sheet metal panels having side edges spaced from side edges of adjacent panels; a pair of substantially vertical metal plates respectively extending along and being fixed to opposite side edges of each panel substantially normal thereto and forming part of an enclosure for a concrete post; and at least one vertical reinforcing bar attached to each plate spaced therefrom and forming at least part of the reinforcement of the respective concrete post; and concrete filling said enclosure and embedding said reinforcing bar to form between spaced side edges of adjacent panels reinforced concrete posts connected to said panels.

3,373,537
JOINT STRUCTURES AND ELEMENTS THEREOF
James H. Blayden, Pittsburgh, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 5, 1966, Ser. No. 562,650
9 Claims. (Cl. 52—288)



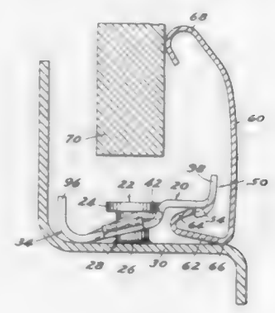
7. A joint structure between spaced marginal edges of juxtaposed panels having flexibly sealed impermeable interconnections across coextensive spaced marginal edge lengths of the adjacent panels comprising the joint structure except for an exposed joint therebetween, a cover patch of flexible impermeable material installed over said exposed joint and portions of the flexible interconnections immediately adjacent thereto, said cover patch having a substantially centrally outwardly extending bellows section and laterally extending flange section contiguously subtending the same, spuds depending from an underside of said flange extending into the exposed joint and locating the flange of the cover patch in overlying disposition in respect to said flexible interconnection portions immediately adjacent the exposed joint, and a layer of adhesive sealant interposed the underside of said cover patch flange, portions of said flexible interconnections immediately adjacent the exposed joint, and outwardly facing surfaces of the juxtaposed panels contiguous therewith in flexibly sealed adhesive securement of said cover patch over said exposed joint.

3,373,538
STRUCTURAL ELEMENT
Karel Prager, Prague, Czechoslovakia, assignor to Sklo Union narodni podnik, Teplice, Czechoslovakia
Filed Feb. 9, 1966, Ser. No. 526,152
Claims priority, application Czechoslovakia, Feb. 17, 1965, 1,077/65
9 Claims. (Cl. 52—403)



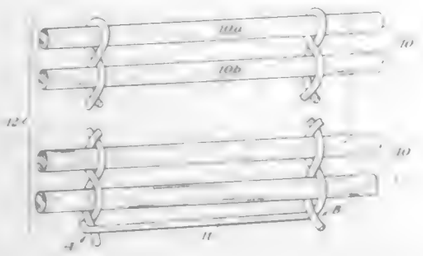
A structural element comprising a pair of spaced, substantially parallel sheets of frangible material each having an elongated edge portion extending in direction toward the other panel; and connecting means releasably connecting said sheet members to one another, said connecting means including an elongated strip member of elastic material provided with longitudinally extending channels which are complementary to the edge portions of said sheets and in which said edge portions are received whereby said sheets are releasably connected and maintained in spaced position with reference to one another.

3,373,539
TRIM FASTENER
Engelbert A. Meyer, Union Lake, Mich., assignor to Warren Fastener Corporation, a corporation of Michigan
Filed Aug. 18, 1965, Ser. No. 480,595
10 Claims. (Cl. 52—718)



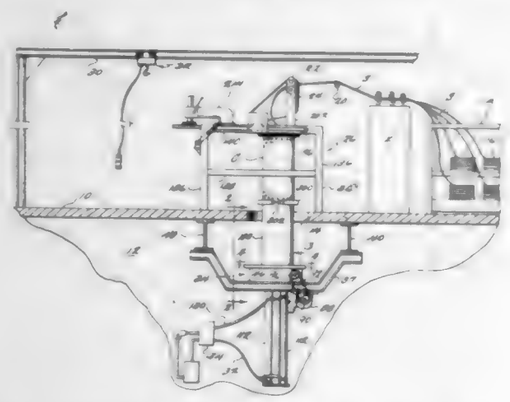
This disclosure relates to a clip adapted to attach a structural member, such as an automotive molding, to the surface of a support. The clip includes a body portion having a U-shaped opening, a ramp portion resiliently joined to the body portion within the U-shaped opening having a slot extending through one edge to receive a button secured to the support. The slot has a restricted opening causing the ramp portion to flex laterally to receive the button and lock the button in place.

3,373,540
METHOD OF BUNDLING
William R. Wisner, Big Flats, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed July 13, 1965, Ser. No. 471,664
3 Claims. (Cl. 53—3)



A method of protectively bundling a succession of identical elongated articles of a frangible or otherwise damageable material by interlacing a tensilely strong supple material about and between said articles and thereafter winding the interlaced succession of articles without skew therebetween and, therefore, no possibility of physical contact therebetween.

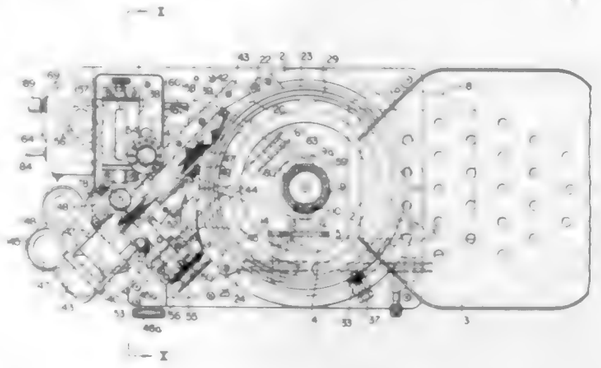
3,373,541
APPARATUS AND PROCESS FOR COILING SLIVER OR THE LIKE IN CANS
Thomas W. Wilson, Raeford, N.C., Victor T. Fahringer, Clarksville, Va., and Samuel F. Hiser, Raeford, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed May 19, 1965, Ser. No. 457,047
33 Claims. (Cl. 53—24)



An apparatus and a process for coiling sliver or the like into cans whereby the sliver is fed into the can against a back pressure and through and out of the can into a confined space, the sliver fed out of the can into the confined space then being compressed back into the can with closure ends being applied to both ends of the can. The sliver may be coiled in the can while wet.

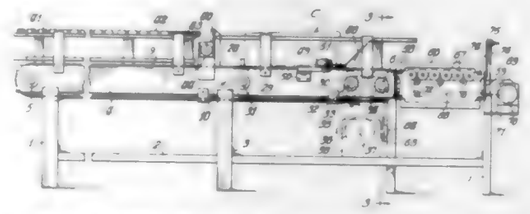
3,373,542
COIN HANDLING APPARATUS
Hisakazu Ikeuchi, Himeji-shi, Japan, assignor to Kokuei Machinery Mfg. Co., Ltd., Himeji-shi, Japan
Filed May 18, 1965, Ser. No. 456,663
Claims priority, application Japan, May 22, 1964, 39/39,492, 39/39,493, 39/39,494, 39/39,496; May 26, 1964, 39/41,060
6 Claims. (Cl. 53—159)

A coin handling device for stacking a predetermined number of coins in a wrapper and then securing them in the wrapper, and which consists of a coin transfer device, a coin counting device which counts the number of coins transferred from the transfer device, a coin receiving device which holds a wrapper and receives the coins from



the counting device, and a coin wrapper crimping device provided with a crimping hook for crimping the rim of the wrapper; i.e. a paper tube.

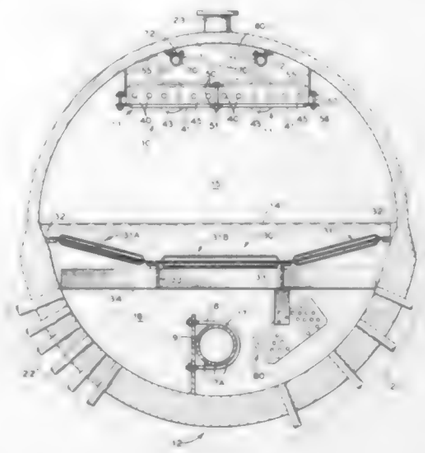
3,373,543
FLAP SLITTER AND POSITIONER
Biagio J. Nigrelli, Northbrook, and Wendell E. Standley, Lake Forest, Ill., assignors to Johns-Nigrelli-Johns, Inc., Skokie, Ill., a corporation of Illinois
Filed Aug. 9, 1965, Ser. No. 478,371
15 Claims. (Cl. 53—381)



The mechanism herein disclosed is employed to sever the connections between the edges of joined, downturned closure flaps held along the outer surfaces of the vertical walls of a filled paperboard container as the container is advanced along a given path. Severing means, located in the path of the strips, break or cut such strips as the container is propelled past such severing means. The released flaps are then swung to closed position.

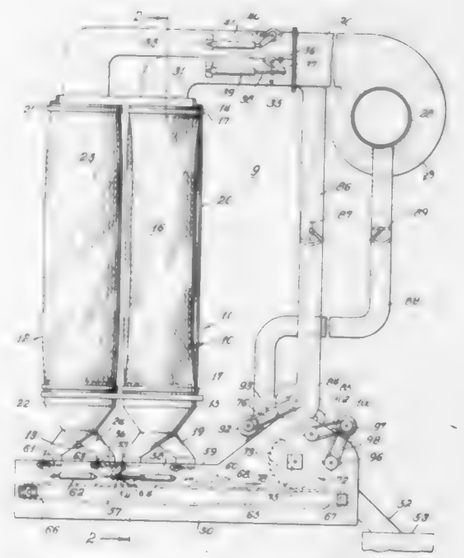
3,373,544
THERMAL STEAM SCRUBBER
Everett A. Catlin, Morristown, N.J., and Ambrose Cort, Jr., Rye, N.Y., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 13, 1964, Ser. No. 337,239
6 Claims. (Cl. 55—269)

1. In a steam generator, a steam and water drum of the type wherein a body of liquid having a water level is normally maintained, said water level defining the boundary between a lower water space and an upper steam space, means for discharging moisture laden steam into said body of liquid, means forming a steam outlet communicating with said steam space, a bank of spaced heating elements disposed in said steam space between said water level and said steam outlet, a plurality of closely spaced thin plate members attached to said heating elements in heat conducting relationship along substantially the entire length thereof, said plate members being arranged relative to each other to form undulating flow channels therebetween, means for heating said plate members to a temperature substantially higher than the temperature of the steam in said steam space, and baffle means for directing the flow of said steam upwardly through said flow channels between said plate members,



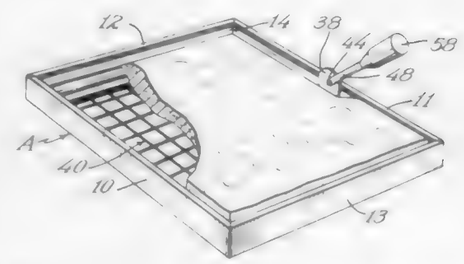
whereby separation of moisture from the steam passing through said flow channels is effected by virtue of directional changes of the steam flow, and the moisture thus deposited on said plate members is evaporated.

3,373,545
DUST COLLECTING SYSTEM
Lynn M. Christianson, 7 Elaine Circle E., Prospect Heights, Ill. 60070
Filed Apr. 11, 1966, Ser. No. 541,681
12 Claims. (Cl. 55—273)



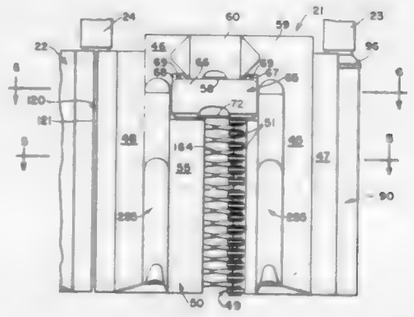
A dust-collecting apparatus is provided which comprises a plurality of individual separators. Each separator includes spaced upper and lower plenums connected by a fabric tube. The upper plenums all communicate to individual valves to the discharge end of a pickup blower. The exterior of the tubes are exposed to the interior of the building within which the dust pickup takes place. The bottom plenums are in the form of chutes and each has an individual valve. An enclosure about the bottom of all of the chutes houses a dust conveyor. In this housing is a secondary dust separator. Normally the air carrying the dust is introduced through the open valves into the top intake plenum. The dust is trapped in the tubes while the air passes through the fabric and is thereby returned to the building. One at a time, the separators are taken off stream by closing the intake valve. A discharge valve is opened between the discharge plenum and the housing air is withdrawn from the housing through the secondary separator, which is a drum type separator. Both by gravity and by this air flow the dirt and dust from the interior of the separator that is off stream is carried into the housing where it is transferred to an outlet by the conveyor. The air flow passes through the secondary separator and then is returned to the initial dust pickup conduit so that it flows back through the separators which remain on stream.

3,373,546
FILTER
Harold T. Setnan, Excelsior, Minn., assignor to Associated Mechanical Services, a corporation of Minnesota
Filed Jan. 6, 1966, Ser. No. 519,117
4 Claims. (Cl. 55—501)



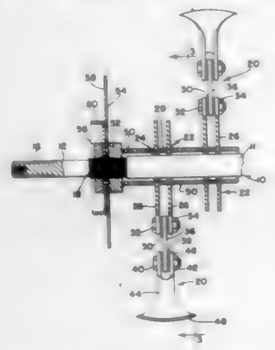
This invention comprises a filter frame provided with a replaceable pad of filter material. The frame includes four frame sides with mitered corners connected by right angular clips. The frame sides include a groove for a reinforcing screen. Two curved lips extend toward one another from right angularly arranged walls and terminate in closely spaced relation. The marginal edges of the filter pad are engaged between these lips. An auxiliary frame of greater width may encircle the filter frame where the filter is used to replace a pair of side by side conventional filters.

3,373,547
COTTON PICKER
Arthur L. Hubbard, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,110
12 Claims. (Cl. 56—44)



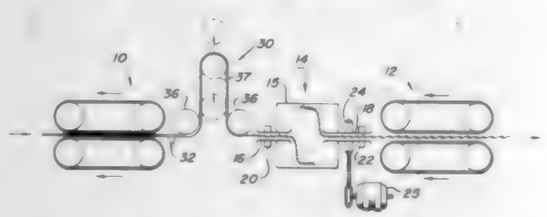
Housing structure for a cotton harvester including opposed upright wall structures defining a fore-and-aft extending plant passage with a forwardly opening plant entrance; harvesting mechanism in the housing structure including laterally extending picker spindles projecting into the passage in the lower portion thereof; and a laterally extending panel detachably supported on the housing to traverse the plant passage above the spindles for blocking off access of the upper portion by plants moving through the passage.

3,373,548
ROTOR FOR CUTTING, CHOPPING, ETC.
Glenn L. Myers and Allan K. Lawrence, Ottumwa, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 11, 1964, Ser. No. 417,728
4 Claims. (Cl. 56—294)



A flail-type rotor having an elongated axial shaft of square cross section, a plurality of equally spaced, radially extending flails mounted on the shaft for rotation therewith and axial sliding thereon, a cylindrical spacer between the adjacent flails, and means at the opposite ends of the shaft for axially clamping the flails and spacers.

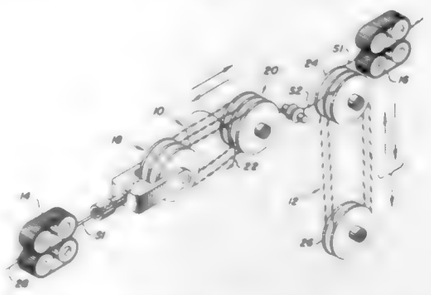
3,373,549
METHODS OF AND APPARATUS FOR ALTERNATE REVERSE TWISTING OF INDEFINITE LENGTHS OF STRAND MATERIAL
Everett Jesse Shaw, Pennington, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 10, 1965, Ser. No. 462,857
14 Claims. (Cl. 57—34)



Imparting alternate-reverse twists to indefinite lengths of strand material, and in particular, to a plurality of electrical conductors. More specifically, a plurality of electrical conductors are fed axially into, and axially out of, a rotating twisting apparatus such as a rotating drum. Axial entry of the conductors into the rotating drum imparts a twist of one direction to the conductors, and, axial discharge of the conductors imparts a twist in the opposite direction. By alternately varying the relative speeds of drum entrance and discharge, alternate-reverse twists are imparted to the conductors.

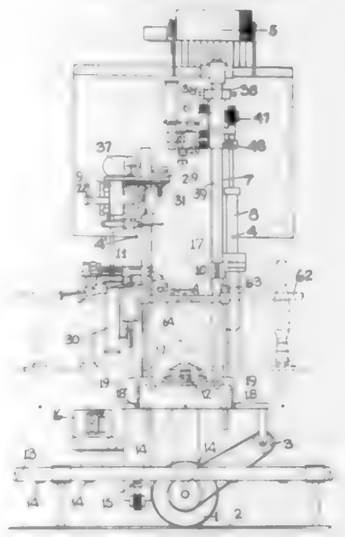
3,373,550
METHODS OF AND APPARATUS FOR ALTERNATE-REVERSE TWISTING OF INDEFINITE LENGTHS OF STRAND MATERIAL
John Martin Symonds, Williamsville, N.Y., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 10, 1965, Ser. No. 462,858
6 Claims. (Cl. 57—34)

Imparting alternate-reverse twists to indefinite lengths of strand material, in particular a plurality of electrical conductors, by feeding the strand material axially into and out of a rotating accumulator which cooperates with a non-rotating accumulator which creates an alternating differential between the entrance and exit speeds of the strand material into and out of the rotating accumulator. By making the entrance speed of the strand material into



the rotating accumulator alternately greater and less than the exit speed from the rotating accumulator, a net alternate-reverse twist is imparted to the strand material.

3,373,551
AUTOMATIC APPARATUS FOR BINDING BROKEN YARNS ON SPINNING MACHINES
Matteo Gillono, 7 Via San Lorenzo, Ivrea, Turin, Italy, and Pietro Alberto, 16 Via Lamarmora, Biella, Vercelli, Italy
Filed Nov. 26, 1965, Ser. No. 509,873
Claims priority, application Italy, May 8, 1965, 10,457/65
23 Claims. (Cl. 57—34)

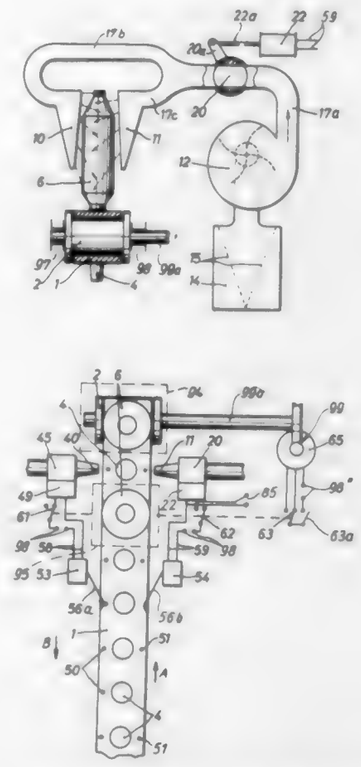


The spinning machine includes an automatic device for binding broken yarns. The device includes a detector which senses the occurrence of a broken yarn as well as a continuously movable belt for taking up a broken yarn end. The spool upon which the broken yarn is, is extracted from rotation engagement with a spindle after detection of a broken yarn to permit binding of the broken ends.

3,373,552
APPARATUS FOR TRANSPORTING AND CLEANING BOBBINS OR THE LIKE
Hermann Scherr, Ebersbach (Fils), Germany, assignor to Zinser-Textilmachinen Gesellschaft mit beschraenkter Haftung, Ebersbach (Fils), Germany
Filed Oct. 10, 1966, Ser. No. 585,489
Claims priority, application Germany, Oct. 8, 1965, Z 11,797
20 Claims. (Cl. 57—56)

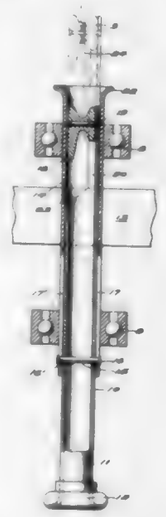
1. In a textile machine, particularly in a spinning frame or twister, conveyor means including a conveying element provided with holders for barrels of bobbins and

arranged to advance such holders past a loading station where the barrels are applied to holders and an evacuating station where bobbins formed on such barrels are re-



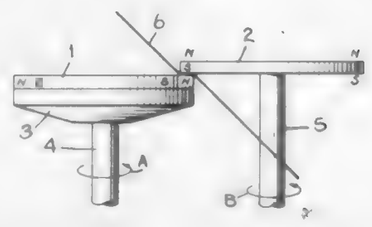
move from the respective holders; and a pneumatic cleaning unit adjacent to the path of travel of said holders and comprising means for generating and directing air streams against the holders of said conveying element.

3,373,553
FALSE-TWIST APPARATUS
Herbert Oswald Naumann, Laconia, N.H., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Jan. 26, 1967, Ser. No. 612,021
9 Claims. (Cl. 57—77.3)



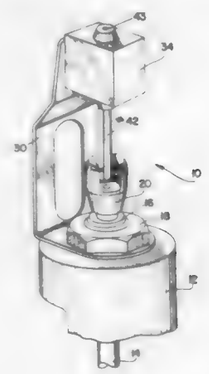
A false twisting apparatus comprising, in combination: a first annular tube having an axial passageway therethrough, a second annular tube concentric with and outside said first tube, mounting means for mounting one of said tubes for rotation about its own axis, guide means secured only at one side thereof to one of said tubes so that an operative portion of said guide means is positioned coaxially with both of said tubes and entirely beyond the end of the tube to which it is secured, and means for permitting axial movement of said tubes relative to each other between a first position wherein said guide is entirely external to the tube to which it is not secured and a second position wherein said guide is entirely within the tube to which it is not secured, and for securing said tubes to each other in said second position during rotation thereof.

3,373,554
YARN TWISTING APPARATUS
Josef Raschle, Butschwil, Switzerland, assignor to Heberlein Patent Corporation, New York, N.Y., a corporation of New York
Filed May 2, 1966, Ser. No. 546,938
Claims priority, application Switzerland, May 6, 1965, 6,284/65
10 Claims. (Cl. 57—77.4)



1. A false twist device of the class described for texturing textile yarn comprising: twist imparting members positioned to have at least partially overlapping contacting portions at a yarn twisting zone through which yarn is advanced, means driving said members in respective directions whereby the contacting portions thereof move in opposite directions, and magnetic means urging at least one of said contacting portions towards the other frictionally to engage yarn passing through said zone and impart a false twist thereto.

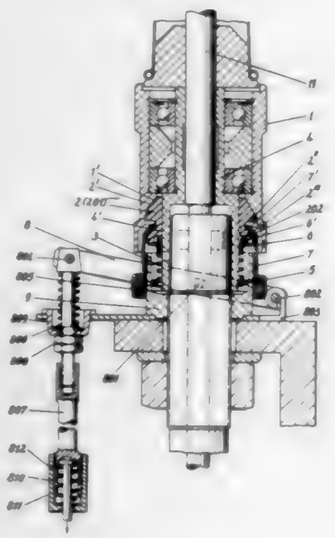
3,373,555
TEXTILE SPINDLE
Hans H. Richter, Cranston, R.I., assignor to Lessona Corporation, Warwick, R.I., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 501,140, Oct. 22, 1965. This application June 21, 1966, Ser. No. 555,868
21 Claims. (Cl. 57—77.45)



1. A device for twisting-untwisting yarn comprising, a rotatable spindle having an axial bore therethrough for passage of a moving strand of yarn, means for rotating

said spindle, means for rotating said yarn in response to rotation of the spindle to twist-untwist the yarn, and a rotatable tube having at least a portion of its external surface arranged to engage the yarn moving from said spindle, said tube being rotated in response to engagement by said moving yarn to advance said yarn from said spindle.

3,373,556
SPINDLES FOR TEXTILE MACHINES
Hans Stahlecker, Sussen, Wurttemberg, and Sigmund Kemmler, Geislingen, Steige, Wurttemberg, Germany, assignors to Spindelfabrik Sussen, Schurr, Stahlecker & Grill G.m.b.H., Sussen, Wurttemberg, Germany
Filed July 12, 1965, Ser. No. 470,989
Claims priority, application Germany, July 14, 1964, S 92,039; June 1, 1965, S 97,407
13 Claims. (Cl. 57—88)

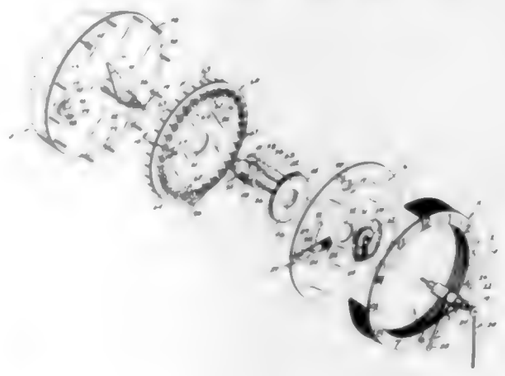


A stop spindle whose acceleration during the starting and whose retardation during the braking is limited so that the yarn body is protected. Between the wharve and a clutch member fixed on a shaft is a spring biased clutch element. The clutch element, which is either radially elastic or divided into radially moveable segments, is wedged in, during the operation of the spindle and the axially directed spring action, between the wharve and the clutch member secured to the spindle shaft. An upwardly conically extending sleeve engages in an annular groove of the clutch element to stop the spindle. The lower flank or side of the annular groove is adapted to the conical shape of the sleeve. When stopping, the sleeve is moved downwardly, the friction contact between the wharve and the clutch element is dissolved, and the clutch element is wedged in between the conical part of the sleeve and the clutch member under the action of the spring. In view of the fact that there is no rigid connection between either the wharve and the clutch element or between the clutch element and the clutch member secured to the shaft so that merely a frictional connection is provided, the spindle is braked softly and is equally softly brought again to speed; this soft operation and action primarily being due to the spring tension of the axially acting spring as well as the radially elastic and freely rotatable arrangement of the clutch element. The object sought to be obtained with the present invention is achieved by means of the provision of the clutch element, which is radially elastic or divided into segments and which is subjected to the action of an axially pressing spring while not being hindered in the free play thereof by wedges or the like.

3,373,557
YARN TWISTING APPARATUS
Chester L. Loveland, Dalton, Pa., assignor to U.S. Textile Machine Company, Scranton, Pa., a corporation of Pennsylvania
Filed Jan. 6, 1966, Ser. No. 519,093
9 Claims. (Cl. 57—119)

In a yarn twister combination a yarn guide means having the construction of a bearing and a ring traveller having a yoke assembly attached at its closed end to the traveller and having a freely rotatable grooved roller mounted within the open end.

3,373,558
CALENDAR CLOCK OR WATCH
Uria Makiri, 6137½ Saturn St., Los Angeles, Calif. 90035
Filed Aug. 30, 1965, Ser. No. 483,497
11 Claims. (Cl. 58—4)



The device is a calendar clock which indicates the time and date irrespective of the number of days in a month including leap year when February has twenty-nine days.

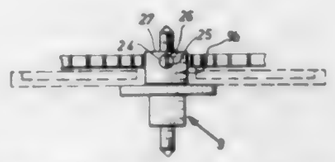
A rotor is driven one step per month and has means to indicate one of the twelve hour numerals as the month, the indication being by way of a window positioned adjacent the hour numeral.

A second rotor is roted one step a day and positions a numeral to be exposed by the window in an upright position wherever the window is positioned.

The rotor indicating the month cooperates with twelve stops positioned one-twelfth of a revolution apart. The rotor is released from a stop by the mechanism which moves one step a day. The stops are positioned so that release takes place after a predetermined number of days determined by the number of days in a month. Means are provided between the rotor which moves in increments of one-twelfth of a revolution, and the rotor which moves one step a day so that when the one rotor moves to indicate a new month, the rotor indicating the day moves back to its starting position with the numeral one (1) exposed in the window.

The said stops include a special stop for February so configurated that for the month of February in a leap year, the movement to the next month occurs after twenty-nine days rather than at twenty-eight.

3,373,559
BALANCE STAFF ASSEMBLY
Thomas Baehni, Neuchatel, Switzerland, assignor to Baehni & Cie S.A., Bienne, Switzerland, a corporation of Switzerland
Original application Nov. 1, 1962, Ser. No. 234,624. Divided and this application Oct. 10, 1966, Ser. No. 621,368
1 Claim. (Cl. 58—115)

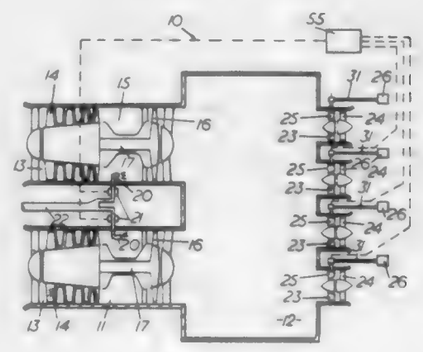


An assembly of a balance staff with at least one of the elements of a movement constituted by a balance wheel and a spiral hairspring, said balance staff having a radial slot and a collar spaced from the slot; the hairspring fitting in the slot and glued thereto; the balance wheel fitting around the staff and being glued thereto at a point intermediate the collar and the spring. The glue preferably is an epoxy-based resin.

3,373,560
JOINER LINK
Charles J. Manney, Kenmore, Raymond M. Robinson, Clarence, and Dennis Molnar, Kenmore, N.Y., assignors to Columbus McKinnon Corporation, Tonawanda, N.Y.
Continuation-in-part of application Ser. No. 326,966, Nov. 29, 1963. This application Apr. 18, 1966, Ser. No. 543,282
7 Claims. (Cl. 59—85)

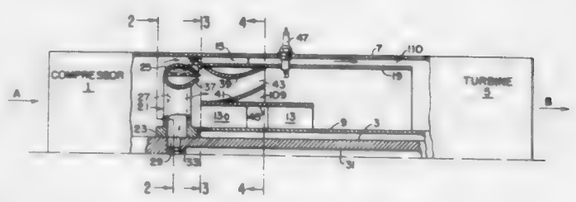
2. A joiner link assembly comprising, in combination,
a pair of generally U-shaped link halves each of which terminates at one end in a single leg and at its other end in a spaced pair of legs with such legs of each pair being provided with aligned openings, the legs of the correspondingly opposite ends of said link halves being interdigitated with all of the openings therein in alignment,
a pin extending through the openings in said interdigitated legs and hingedly interconnecting said link halves,
spring clip means embracingly locked on said pin within that space between the interdigitated ends of the link halves, said spring clip means being of a diameter slightly greater than the maximum diameter of said pin and having a total width axially of the pin which is less than about half the axial width of said space,
and collar means slidably received on said pin within the confines of said space, said collar means and said spring clip means being of a collective width substantially equal to the axial width of said space so as to minimize axial shifting of said pin, and said collar means being of a diameter substantially greater than the diameter of said spring clip means to present a throat leading to said spring clip means which is deeper than it is wide.

3,373,561
GAS TURBINE POWERPLANT
Albert Jubb, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Oct. 14, 1966, Ser. No. 586,771
Claims priority, application Great Britain, Oct. 18, 1965, 44,102/65
7 Claims. (Cl. 60—39.15)



1. Powerplant comprising at least one gas turbine engine, a fuel supply therefor, a plenum chamber which is arranged to receive exhaust gases from the engine and which has a plurality of outlets through each of which the exhaust gases may be discharged, a plurality of free power turbines which are respectively mounted in the outlets, and control means, responsive to changes in the rotational speeds of the free power turbines, for effecting adjustment of the fuel supply to the engine, said control means comprising outlet area adjustment devices for altering the effective areas of the respective outlets so as to adjust the rotational speeds of the respective free power turbines, and means interconnecting the outlet area adjustment devices so that increases and decreases in one said area are respectively accompanied by decreases and increases in any other said area, whereby the total effective area of all the outlets, prior to the said adjustment of the fuel supply, is maintained substantially constant.

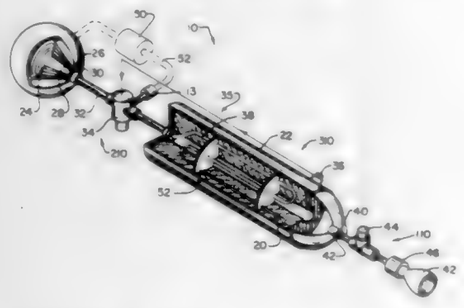
3,373,562
COMBUSTION CHAMBER FOR GAS TURBINES AND THE LIKE HAVING IMPROVED FLAME HOLDER
Alex F. Wormser, Marblehead, Mass., assignor to Wingaersheek Turbine Co., Inc., Lynn, Mass., a corporation of Massachusetts
Filed Mar. 17, 1966, Ser. No. 535,147
12 Claims. (Cl. 60—39.72)



The specification discloses an improved combustion chamber for gas turbines and the like which includes a novel flame holder. The flame holder includes a pair of opposed concentric cylinder members which form an annular passage between them. This annular passage is divided by partition plates into a plurality of passages ex-

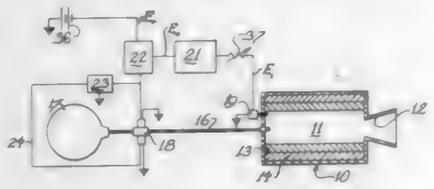
tending from the entrance to the exit end of the flame holder. The passages are inclined at an angle with respect to the axis of the combustion chamber. A pair of opposed air foil sections are provided in each passage to shape the passage such that the entrance end has about twice the area of the exit end. Alternate passages turn the fluid passing therethrough radially inwardly or radially outwardly. A portion of one of the airfoils which narrows the passage from the entrance to the exit end forms a bluff trailing surface which provides eddys to stabilize the flame. This novel flame holder provides a combustion chamber in which more fuel can be burned in a given volume i.e. a combustion chamber having greater combustion intensity. Further the walls of the combustion chamber will remain at a relatively low temperature and thus have a longer life than conventional combustion chambers. The complete specification should be consulted for a full description of the invention.

3,373,563
RADIOISOTOPE SUBLIMING SOLID PROPULSION SYSTEM
James A. McCabe, Fort Forth, Tex., assignor to General Dynamics Corporation, Fort Worth, Tex., a corporation of Delaware
Filed Dec. 16, 1965, Ser. No. 514,268
6 Claims. (Cl. 60—203)



A gas generating device in composite unit form consisting in combination of a radioisotope material to provide a heat source, a vessel containing subliming solid propellant exhibiting a relatively low molecular weight in the vapor phase, and a pressure or temperature regulated radioisotope flow control loop, the device having control means for directing the resultant high temperature thrust gases.

3,373,564
PROCESS AND APPARATUS FOR CONTROLLING ROCKET ENGINES AND THE LIKE
Joseph F. Maybin, Birmingham, Ala., assignor to Hayes International Corporation, a corporation of Delaware
Filed Apr. 26, 1966, Ser. No. 545,287
8 Claims. (Cl. 60—204)



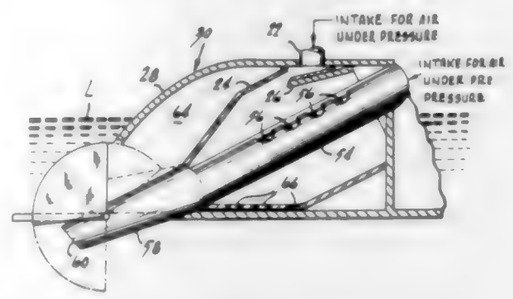
1. The process of obtaining a control signal for an engine of the type wherein a fluid under pressure is utilized to produce the force which operates the engine when the total impulse produced by said force reaches a predetermined value which comprises:

(a) obtaining an analogue signal corresponding to the pressure of the fluid in the engine,

(b) integrating said analogue signal with respect to time to obtain a second signal analogous to the total impulse produced during the time interval of integration, and

(c) producing a control signal when said second signal reaches a predetermined value.

3,373,565
PULSATION-DAMPING STRUCTURE FOR HYDRAULICALLY PROPELLED BOATS
Joseph T. Yeager, Sr., Mercer County, N.J. (37 Stevenson Ave., Trenton, N.J. 08619)
Filed July 13, 1965, Ser. No. 471,616
5 Claims. (Cl. 60—222)



1. A boat propulsion mechanism comprising:

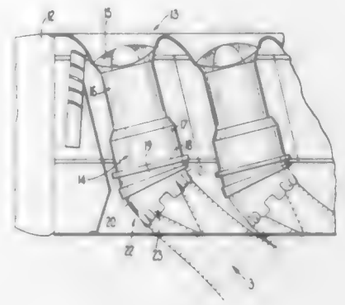
(a) an elongated duct mountable in a boat hull, said duct having an intake end connectable to a source of water under pressure and an underwater outlet through which water forced under pressure through the duct may issue as a propelling jet;

(b) a compartment extending about the duct for part at least of a length of the duct, said duct having ports in free communication with the compartment, said compartment constituting means into which water may flow from the duct, and from which water may return to the duct through said ports, to provide substantially surge-free, continuous water movement through the duct; and

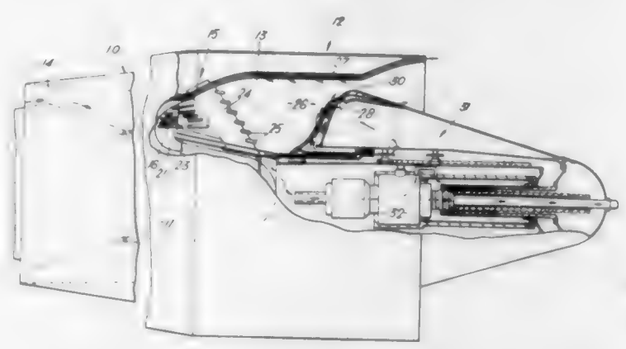
(c) means to direct air under pressure into said compartment, and to maintain the air so forced under compression against water flowing into the compartment through said ports, whereby to relieve strain upon the compartment walls and further reduce surge and pulsation of water flowing through the duct, said means to direct air under pressure into said compartment including an air conduit disposed above water level and having an intake and an outlet, means within said air conduit for effecting flow of air through the conduit inlet to the outlet, an air duct connected between the outlet of the conduit and said compartment, and gate valve means arranged to permit flow of air from the air duct into the compartment, while preventing back flow of air from the compartment through the air duct.

3,373,566
GAS TURBINE JET ENGINE POWERPLANT HAVING A JET NOZZLE WITH A PLURALITY OF NOZZLE MEMBERS
Francis Jeffrey Colville, Sutton-in-Ashfield, Nottingham, and George Samuel Kitson, Aspley, Nottingham, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Oct. 5, 1966, Ser. No. 584,474
Claims priority, application Great Britain, Oct. 19, 1965, 44,323/65
3 Claims. (Cl. 60—232)

Jet nozzles for aircraft vertical lift engines, the nozzles having a plurality of nozzle members located on a curved, rotatable, common duct and having an elliptical downstream end configuration. The oppositely located nozzle members adjacent the minor axis of the ellipse have their downstream ends inwardly inclined towards each other. When two or more such engines are vertically mounted side by side in an engine bay, the jet efflux from each engine will not impinge on the jet nozzle of the adjacent engine.



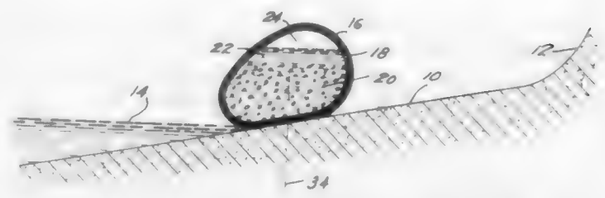
3,373,567
JET PROPULSION POWERPLANT WITH AFTERBURNING COMBUSTION EQUIPMENT
Jack Palfreyman, Tansley, near Matlock, and Herbert Frank Smith, Allentown, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Apr. 27, 1966, Ser. No. 545,607
Claims priority, application Great Britain, May 11, 1965, 19,936/65
13 Claims. (Cl. 60—264)



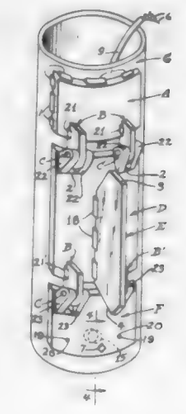
A powerplant having first and second combustion equipment in flow series, fuel being burnt in the second combustion equipment in hot gases supplied from the first combustion equipment through perforated flow-dividing walls of a multiple diffuser duct upstream of the second combustion equipment.

3,373,568
SYSTEM FOR RECLAMATION OF LAND
Lloyd Hornbostel, Jr., 1801 Chippewa Trail, Beloit, Wis. 53511
Filed Sept. 13, 1965, Ser. No. 486,706
5 Claims. (Cl. 61—5)

System for the reclamation of land by placing spaced elongated flexible sealed bags filled with a mixture of aggregate and water along the shore line in overlapping relationship. The bags are made from a plastic material and may be covered by a nylon netting and have anchors at their opposite ends for the attachment of anchoring cables, anchoring the bags to the shore to extend with their longest dimensions parallel to the short line. The bags may be anchored in staggered relation with respect to each other with two advance bags lapped at the ends thereof by a trailing bag spaced from the two advanced bags to take care of an on-shore wash. The bags also may be angularly disposed with respect to the shore line and extending in spaced parallel staggered relationship with respect to each other in positions orthogonally with respect to the direction of the wash, where the wash is a long-shore wash.



3,373,569
ARTICULATED PILE STABILIZER AND ANCHORING DEVICE
William O. Backman, 2120 Seminary St., Napa, Calif. 94558
Filed Nov. 1, 1966, Ser. No. 591,148
8 Claims. (Cl. 61—53.68)



1. An articulated pile stabilizer and anchoring device comprising:

(a) a support plate secured to a pile;

(b) a primary stabilizing fluke having one end pivotally secured to said plate and adapted to lie adjacent to the surface of the pile;

(c) an auxiliary fluke having an end pivotally secured to the other end of said primary fluke and adapted to lie adjacent to the pile surface;

(d) frangible means securing said auxiliary fluke to the pile;

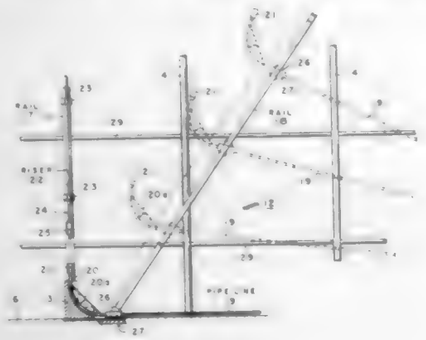
(e) means between said auxiliary fluke and said pile for forcing said auxiliary fluke outwardly and for breaking said frangible means; and

(f) stop means on said primary fluke for abutting the support plate to limit the pivotal movement of said primary fluke about its pivotal connection to said plate and for limiting the pivotal movement of said auxiliary fluke about its connection to the primary fluke.

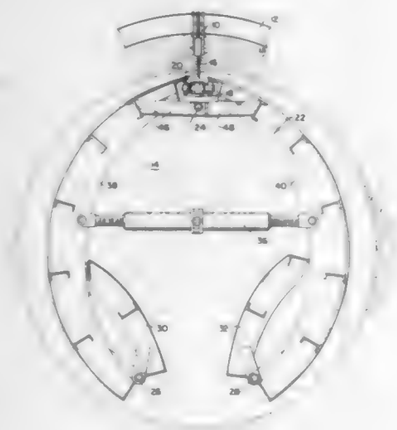
3,373,570
METHOD AND APPARATUS FOR INSTALLING UNDERWATER PIPELINE
Robert G. Hindman, New Orleans, La., assignor to Esso Production Research Company
Filed Feb. 7, 1966, Ser. No. 525,411
13 Claims. (Cl. 61—72.3)

Slack in laying underwater pipelines in deep water is

compensated for by having the pipeline riser and the pipeline extend in two diffurent directions which converge for guidingly lowering the riser and the pipeline from a floating or fixed support in the deep water.



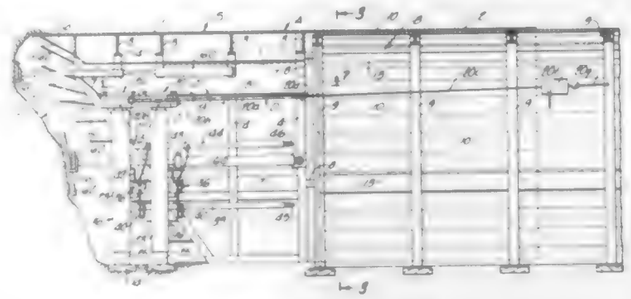
3,373,571
APPARATUS FOR HANDLING STEEL FORMS IN TUNNELS
William M. Records, San Antonio, Tex., assignor to Ewing-Records & Associates, Inc., Converse, Tex., a corporation of Texas
Filed Jan. 6, 1966, Ser. No. 519,030
1 Claim. (Cl. 61—84)



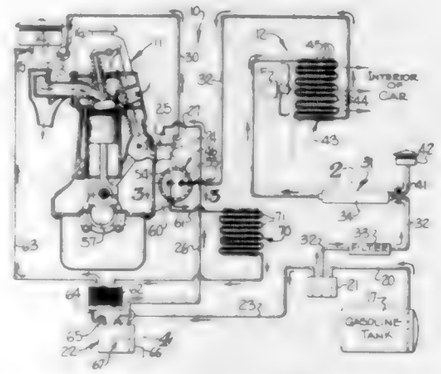
Concrete forms, particularly collapsible steel forms movable longitudinally upon rollers in tunnel construction.

3,373,572
METHOD OF DRIVING TUNNELS
Maxwell F. Kemper, 3701 Overland Ave., Los Angeles, Calif. 90034
Original application May 23, 1963, Ser. No. 282,771. Divided and this application Oct. 12, 1965, Ser. No. 511,007
9 Claims. (Cl. 61—85)

1. A method of driving an elongate, arched shield into the ground in the formation of a tunnel comprising: positioning the shield so that one end thereof may be progressively driven into the ground; providing on each side of the longitudinal center line of the shield and adjacent said end and each side of the shield a plurality of supports in contact with the ground and with the upper portion of the interior of the shield at longitudinally spaced locations on the shield; applying a force for moving said shield longitudinally relative to said supports to advance the shield into the ground; removing the supports one at a time from contact with the ground: moving each support longitudinally of the shield to a new position when free of the ground while other of said supports on opposite sides of said center line remain in contact with the ground; and reengaging each support with the ground following repositioning thereof.

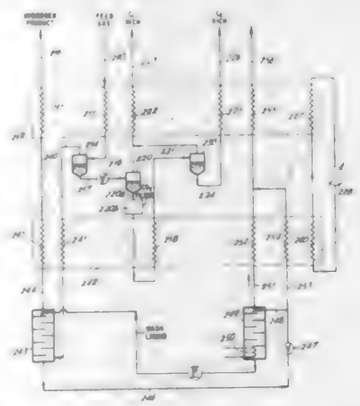


3,373,573
FUEL EVAPORATION REFRIGERATION SYSTEM
Walter J. Nickel, Charlotte, N.C., assignor to Leola M. Nickel, Charlotte, N.C.
Filed Jan. 31, 1967, Ser. No. 612,897
7 Claims. (Cl. 62—7)



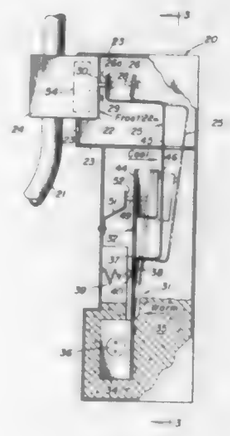
A refrigerating system comprising an internal combustion engine and a refrigeration-producing apparatus evaporating fuel from the engine supply of volatile liquid fuel for use as the refrigerant therein, and including a pump operated independently of the engine intake manifold vacuum for circulating the refrigerant through the refrigeration-producing apparatus.

3,373,574
RECOVERY OF C_2 HYDROCARBONS FROM GAS MIXTURES CONTAINING HYDROGEN
Theodore F. Fisher, Buffalo, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed Apr. 30, 1965, Ser. No. 452,220
11 Claims. (Cl. 62—20)



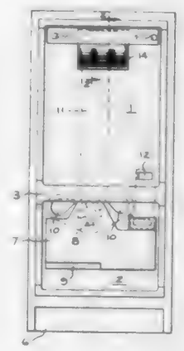
A process for separating methane and C_3 hydrocarbon condensibles from hydrogen by cooling to liquefy the hydrocarbons, throttle expanding the liquefied condensibles, and partially rewarming the latter for 15–70% evaporation before separating the methane vapor.

3,373,575
SYSTEM FOR DEFROST CONTROL OF REFRIGERATORS AND THE LIKE
James K. Nelson, Des Plaines, Ill., assignor to Borg-Warner Corporation, a corporation of Illinois
Continuation of abandoned application Ser. No. 575,648, Aug. 29, 1966. This application Jan. 9, 1967, Ser. No. 608,132
8 Claims. (Cl. 62—80)



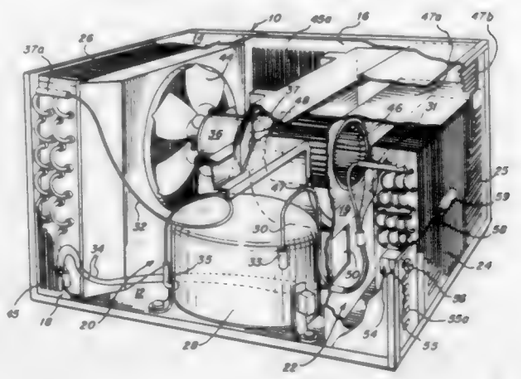
This invention discloses defrosting control in which an ice sensing probe periodically contacts a surface to determine whether ice has been built up upon the surface. The probe is heated upon initial contact with the surface to melt any ice upon the surface and subsequently allowed to cool so that the ice can be frozen. If the probe adheres to the surface, thereby indicating a need for defrosting, appropriate defrost devices such as an electrical heater are actuated to defrost the surface.

3,373,576
SINGLE EVAPORATOR, SINGLE FAN REFRIGERATOR INCLUDING CONTROL MEANS
Gerald F. Dodge III, Louisville, and Howard D. F. True, Jr., Fern Creek, Ky., assignors to General Electric Company, a corporation of New York
Filed Aug. 31, 1966, Ser. No. 576,320
2 Claims. (Cl. 62—180)



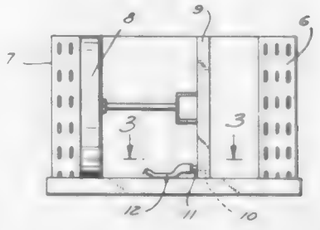
A refrigerator comprising a fresh food storage compartment and means for supplying below freezing air to the compartment including a refrigeration system and a mixing chamber for mixing the refrigerated air from the system with compartment air and introducing the mixture into the compartment. Control means responsive to the temperature of the mixed air includes a thermal mass for preventing short cycle "off" periods of operation of the refrigeration system.

3,373,577
AIR CONDITIONER CONTROL
Raymond H. Bohman, Galesburg, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,418
3 Claims. (Cl. 62—180)



A thermostatic control system for an air conditioner which provides automatic operation of the unit throughout the entire air conditioning season. The control system controls turn-on and turn-off of the air circulating fan and of the refrigeration compressor responsive to the temperature of the air in the enclosure being conditioned.

3,373,578
CONDENSATE DRAIN TUBE
Francis Feeney, Philadelphia, Pa., and Raymond J. Gorenflo, Ridgewood, N.J., assignors to Fedders Corporation, Edison, N.J., a corporation of New York
Filed Jan. 31, 1967, Ser. No. 612,996
4 Claims. (Cl. 62—189)

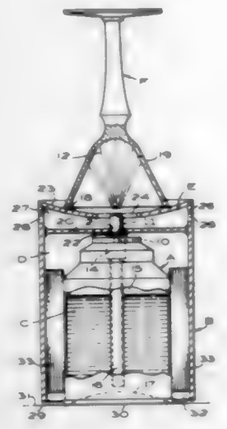


An apparatus for transferring condensate from the room side to the outdoor side of a room air conditioner while preventing the transfer of air from the outdoor side to the room side. A condensate drain tube for passing condensate water from the room side to the outdoor side of a room air conditioner which, by means of a water seal and flapper valve, prevents the transfer of air from the outdoor side to the room side.

3,373,579
DEVICE FOR CHILLING AND FROSTING DRINKING GLASSES
George Joseph Federighi, Belvedere, Calif. (% Stero Chemical Mfg. Co., 70 13th St., San Francisco, Calif. 94103)
Filed Nov. 12, 1965, Ser. No. 507,469
4 Claims. (Cl. 62—293)

The invention relates to a portable device for chilling glasses and consists of a portable pressurized liquid re-

frigerant container having a vertically displaceably spray nozzle and a holder surrounding the container. The holder has formed therewith a platform for holding glasses



to be chilled and a portion for engaging the nozzle. Downward movement of the platform and holder actuates the nozzle to spray refrigerant onto the glass.

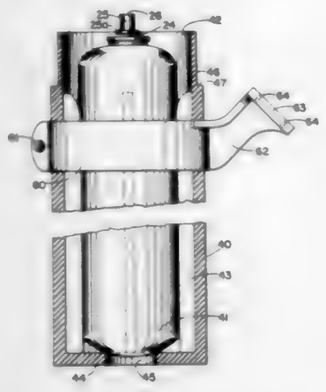
3,373,580

PORTABLE AND SELF-CONTAINED APPARATUS FOR CHILLING AND FROSTING BEVERAGE GLASSES

George J. Federighi, 103 Jamaica, Tiburon, Calif. 94920

Continuation-in-part of application Ser. No. 507,469, Nov. 12, 1965. This application Oct. 17, 1966, Ser. No. 587,039

12 Claims. (Cl. 62—293)



A portable and self-contained apparatus for chilling and frosting beverage glasses including a housing for centering and retaining a conventional container of low pressure, nontoxic liquid refrigerant such as "Freon," having an axial self-sealing valve and nozzle. The housing has a cover platform through which the container nozzle partially projects thereabove and engages a portion of the nozzle in non-sealing engagement so as to open the valve and permit the refrigerant to escape through the nozzle and vaporize. The glasses are chilled and frosted by inverting a glass and placing the bowl thereof over the nozzle with the rim of the bowl on the cover platform and exerting a downward pressure to open the valve nozzle and spray the inside of the bowl with refrigerant. The cover platform is also relieved at intervals beneath the rim so that the interior of the bowl is always at atmospheric pressure. The sublimation of the refrigerant upon release from the nozzle cools the glass of the bowl thereby reducing the temperature of the ambient air on the outside of the bowl to cause frosting on the outside without any residue of the refrigerant or otherwise on the inside. The whole frosting is accomplished in a matter of seconds, and the valve closes upon release of the pressure of the glass against the cover platform. The preferred form of cover platform has an upstanding peripheral wall to confine the ambient air and hasten and intensify the frosting.

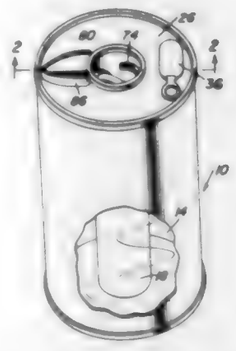
3,373,581

CONTAINER ARRANGEMENT WITH COOLANT THEREIN

James R. Strader, Fort Wayne, Ind., assignor, by mesne assignments, to John Robert Wray, Jr.

Filed Aug. 31, 1966, Ser. No. 576,390

9 Claims. (Cl. 62—294)



A container assembly having a chamber for a consumable beverage and a chamber for a coolant which changes state in response to pressure change for cooling the consumable product. The chambers may be concentrically arranged to form a combined structure or in the form of a separate container for the consumable product.

3,373,582

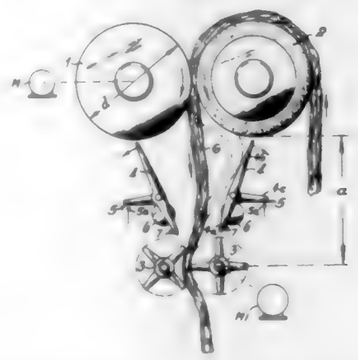
SAFETY DEVICE, ESPECIALLY FOR USE IN CONNECTION WITH THE WET SQUEEZING OF TEXTILES

Karl-Peter Lopata, Krefeld-Urdingen, Germany, assignor to Joh. Kleinewefers Sohne, Krefeld, Germany

Filed May 19, 1966, Ser. No. 551,326

Claims priority, application Germany, May 20, 1965, K 56,171

7 Claims. (Cl. 68—264)



1. A squeezing mechanism, which includes: a pair of rotatable squeezer roller means for passing therebetween and squeezing wet textile material, motor means operatively connected to said squeezer roller means for selectively driving the same, rotatable pulling means arranged below said squeezer roller means in spaced relationship thereto for grasping squeezed textile material and exerting a pull thereon in the direction away from said squeezer roller means, and control means including means interposed between said rotatable pulling means and said squeezer roller means and operable to reduce the speed of said squeezer roller means in response to squeezed textile material passed through between said squeezer roller means tending to wind back on one of said squeezer roller means.

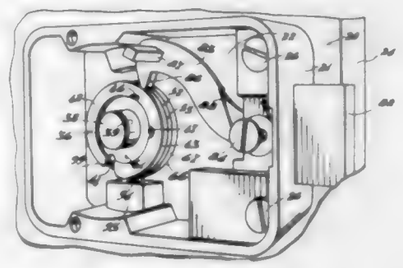
3,373,583

COMBINATION LOCK WITH NORMALLY MASKED DRIVER GATE

Joseph J. Parrock, Milford, Ohio, assignor to The Mosler Lock Company, Milford, Ohio, a corporation of Ohio

Filed Dec. 28, 1965, Ser. No. 517,017

18 Claims. (Cl. 70—303)



A combination lock having a shutter which normally blocks the driver gate at all driver positions, so as to prevent contact of the fence with the tumblers except when the shutter is opened to expose the driver gate. The shutter is openable only by a spring loaded snap action, and the fence cannot gradually or controllably be engaged with the tumbler peripheries.

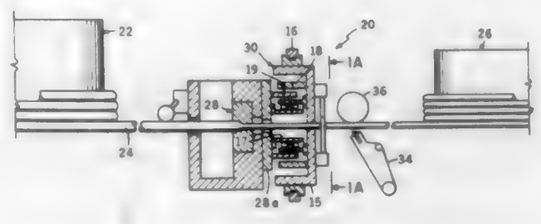
3,373,584

MEANS FOR IDENTIFYING DEFECTIVE WIRE AND FOR REJECTING ARTICLES MADE THEREFROM

John W. Rundt and Walter F. Green, Canton, Ohio, assignors to The Timken Roller Bearing Company, Canton, Ohio, a corporation of Ohio

Continuation of application Ser. No. 66,830, Nov. 2, 1960. This application July 15, 1964, Ser. No. 382,841

2 Claims. (Cl. 72—10)



1. Means for marking defective wire and the like comprising means for propelling a wire in a predetermined direction, means mounted adjacent to the moving wire for detecting defects therein, said last named means including electromagnetic means generating an electromagnetic field in the wire, said field being affected by defects in the wire as the wire moves past to produce signals in response to said field variations, means responsive to the signals above a predetermined magnitude for cutting a flat surface slice substantially parallel to the longitudinal axis of the wire in locations of the defects, said means for cutting including a cutter member movable to a position in cutting engagement with the wire in response to the signals above said predetermined magnitude, and a backup roller engaging the opposite side of the wire from the cutter member.

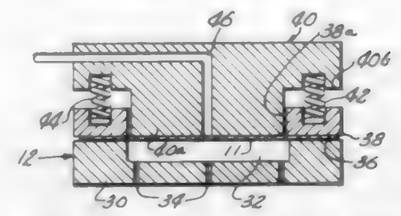
3,373,585

SHEET METAL SHAPING APPARATUS AND METHOD

Thomas D. Reynolds, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey

Filed Sept. 21, 1964, Ser. No. 397,766

9 Claims. (Cl. 72—57)



A process and apparatus for drawing a sheet metal blank, the process comprising positioning the blank across a die cavity, forcing the blank into the cavity while holding the cavity surrounding portions thereof against the die with sufficient force to only partially restrain the lateral movement of these portions of the blank into the cavity, and thereafter forcing the blank further into the cavity while holding the cavity-surrounding portions thereof with a force sufficient to substantially completely restrain the lateral movement of these portions. The apparatus comprises a first member including a die having a cavity and a second member including a blank holder and a punch. The forward end of the punch is sized to fit partially into the die cavity and spring means extends between the punch and the blank holder. Means is provided for applying a fluid pressure between the forward end of the punch and the blank to force the partially deformed blank further into the cavity.

3,373,586

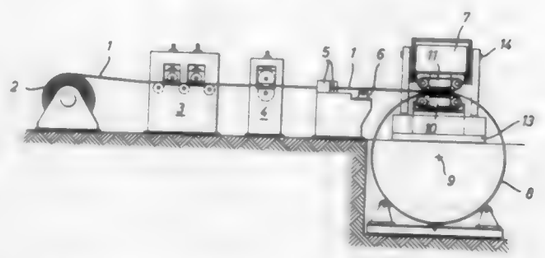
HELICAL SEAM PIPE MAKING MACHINE

Kurt Sengel, Friedrichshafen, Germany, assignor to Driam A.G., Zurich, Switzerland

Filed Oct. 14, 1963, Ser. No. 316,082

Claims priority, application Germany, Oct. 17, 1962, D 40,084

10 Claims. (Cl. 72—135)



1. A continuous method of raising woven, knitted, and non-woven fabrics comprising the steps of

feeding a quantity of moisture to a fabric and passing said moistened fabric through a raising passage containing card points to partially raise the fabric, and

repeating at least once the above-mentioned step by feeding to the fabric a predetermined increased quantity of moisture, with respect to said quantity of moisture fed in the preceding step, recycling said partially raised fabric through the raising passage for further raising thereof, whereby to obtain a more uniform raising and also to improve the total raising effect.

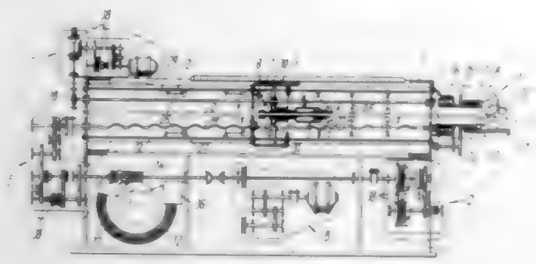
3,373,587

AUTOMATIC TUBE BENDING MACHINES

Vladimir Nikolaevich Shubin, Pervomaiskaja 1, Apt. 103; Alexei Fedorovich Barsov, Zagarodnoje Chaussee 4, Apt. 52; Raimond Lvovich Novobratsky, B. Komsomolsky Pereulok 5, Apt. 33; Vladimir Alexeevich Poshchishchailo, 1-st Jaroslavskaja Ulitsa 21–a, Korpus 24, Apt. 57; and Samuil Moiseevich Poljak, Tankovy proezd 1, Apt. 55, all of U.S.S.R.

Continuation-in-part of application Ser. No. 288,210, June 17, 1963. This application Dec. 8, 1966, Ser. No. 600,178

2 Claims. (Cl. 72—158)



An automatic tube bending machine in which a bending head is mounted on the frame so as to be capable of turning movement about an axis aligned with the geometric axis of a billet holder. A common drive is provided for the adjustable displacement of the bending means associated with the bending head, the pushing of a billet into the bending means and the turning of the bending head, respectively.

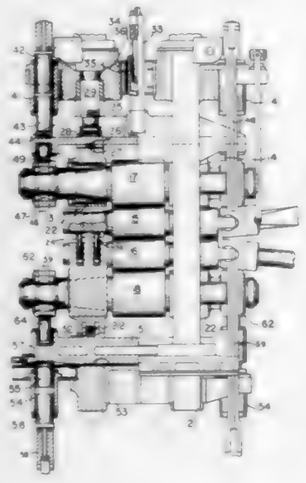
3,373,588

CROWN CONTROL FOR ROLLING MILL

Morris Denor Stone, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 17, 1965, Ser. No. 480,398

2 Claims. (Cl. 72—237)



The invention relates to a rolling mill having a housing in which there is formed a window. The rolls of the mill are provided with bearing chock assemblies which are received in the window of the housing. Outward of the bearing chock assemblies, the rolls are engaged by piston cylinder assemblies designed to apply a bending force on the rolls to bend them in a direction to increase the crown of the rolls. The bending forces generated by the piston cylinder assemblies are isolated from the housing by providing rigid beam members arranged between the bearing chock assemblies and the housing insuch a manner that the bending forces are self-contained, and wherein the improvement comprises providing piston cylinder assemblies designed to apply a bending force on the rolls to decrease the crown of the rolls, the last-mentioned piston cylinder assemblies being carried in the beam members so that the resultant forces thereof are taken by the beam members and not by the housing of the mill. In addition piston cylinder assemblies are provided between the bearing chock assemblies to resist the bending loads of the cylinders that exert a pressure to decrease the crown.

3,373,589

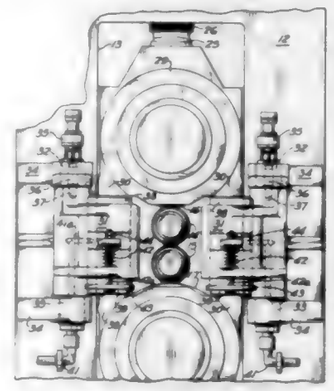
ROLL BENDING DEVICE FOR ROLLING MILL

Jeremiah Wagner O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 19, 1965, Ser. No. 457,000

Claims priority, application Great Britain, June 4, 1964, 23,286/64

10 Claims. (Cl. 72—238)



In a rolling mill having a pair of rolls in which there is provided force applying means, such as piston cylinder assemblies for imposing a force on the ends of the rolls in which the invention comprises a pivotal support carried on the housings of the mill for at least one of the force applying means. This provides a support for the piston cylinder assemblies in the form of a gate whereby the assemblies can be very quickly swung into and out of an operative position.

3,373,590

MULTI-ROLL STANDS FOR THE COLD-ROLLING OF THIN, HARD STRIPS

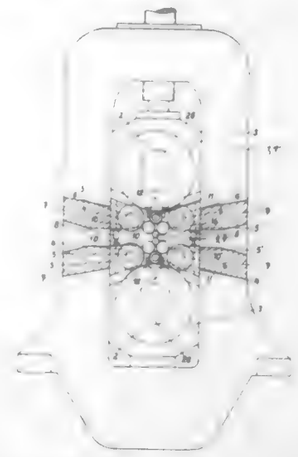
Hans Joachim Knappe, Dusseldorf, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company

Filed June 14, 1965, Ser. No. 463,686

Claims priority, application Austria, June 23, 1964, A 5,396/64

3 Claims. (Cl. 72—243)

A multi-roll stand for the cold-rolling of thin, hard strips with an upper backing roll and a lower backing roll provided with driving means, two sets of upper supporting rollers and two sets of lower supporting rollers journalled on lateral supporting girders, with each of the supporting rollers bearing against one of the backing rolls for the frictional transmission of power, two upper intermediate rolls arranged between the two upper sets of supporting rollers and two lower intermediate rolls arranged between the two sets of lower supporting rollers, upper and lower reversing rolls bearing on the upper and lower backing rolls respectively and on the two upper and two lower intermediate rolls respectively, and two working rolls, one upper and one lower, each supported and frictionally driven by two of the intermediate rolls.



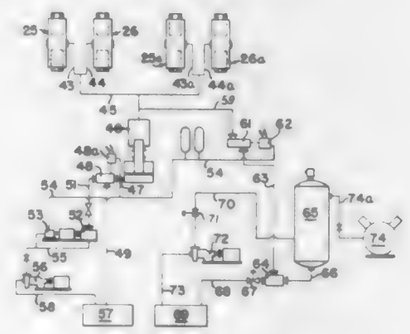
3,373,591

FLUID CONTROL SYSTEM FOR A ROLLING MILL

Jeremiah Wagner O'Brien, Frank Joseph Gleve, and Bert J. Lamport, Pittsburgh, Pa., assignors to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 9, 1965, Ser. No. 478,354

7 Claims. (Cl. 72—245)



In a rolling mill having piston cylinder assemblies for imposing a bending moment on at least one of the rolls to deflect the roll and thereby to change its crown, a fluid control system adapted to rapidly decompress the pressure in the cylinder employed to bend the roll so that the roll may be positioned by the screwdown of the mill and wherein the screwdown will not have to work against the roll bending force. The fluid control system comprises an intensifier, the high pressure side of which is connected to the piston cylinder assemblies to which side is also associated a decompression valve for selectively decompressing the high pressure. The low pressure side of the intensifier is fed from a second supply circuit.

3,373,592

SEVERING OF AN EXTRUSION DISC AND AN EXPULSION DISC FROM AN EXTRUSION RESIDUE AND AN EXTRUSION SKIRT IN A METAL-EXTRUSION PRESS

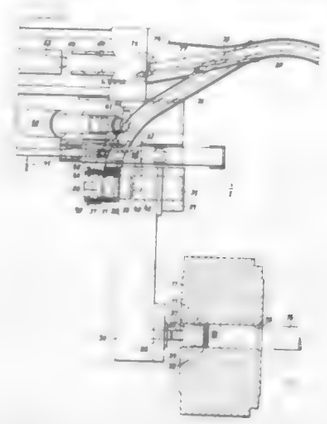
Helmut Robra, Mulheim (Ruhr), Otto Behrendt, Dusseldorf-Eller, and Winfried Steyvers, Dusseldorf-Oberkassel, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company

Filed Nov. 10, 1965, Ser. No. 507,116

Claims priority, application Germany, Dec. 1, 1964, Sch 36,185

5 Claims. (Cl. 72—255)

Means for automatically severing the dummy block and the scavenging block of a metal extrusion press from the extrusion residue and the extrusion skirt, wherein a tool slide conveys the extrusion residue, with the extrusion skirt, the dummy block and the scavenging block from the extrusion axis of the press to a reception cylinder, whereupon the extrusion residue, with the extrusion skirt and the dummy block are pushed into the reception cylinder, while the scavenging block remains in a receiving aperture, the reception cylinder then being swung about an axis inclined at an angle of about 45° to a means for severing the dummy block from the extrusion residue and the extrusion skirt.



3,373,593

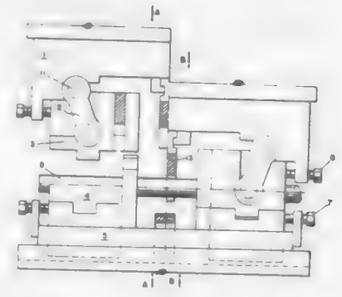
FORGING MACHINE FOR UPSETTING OR SIMULTANEOUS UPSETTING AND BENDING

Tadeusz Rut, Nowe Zagorze 14, Poznan, Poland

Filed May 7, 1965, Ser. No. 453,993

Claims priority, application Poland, May 8, 1964, P 104,504; Sept. 2, 1964, P 105,627

5 Claims. (Cl. 72—399)



1. A device for upsetting, as well as upsetting with simultaneous bending driven by a press, provided with a punch holder, a base, between which sets of die tools are placed, whereby the lower die tools are slidably mounted on the base and the upper ones fixed to the punch holder by means of inclined pivoting links, provided with bearings in the punch holder and in the upper die tools, characterised by this, that it is provided with keepers (14) for the forged piece (8), pivotally mounted in the lower die tools (4).

3,373,594

APPARATUS FOR FORMING A RAILWAY CAR

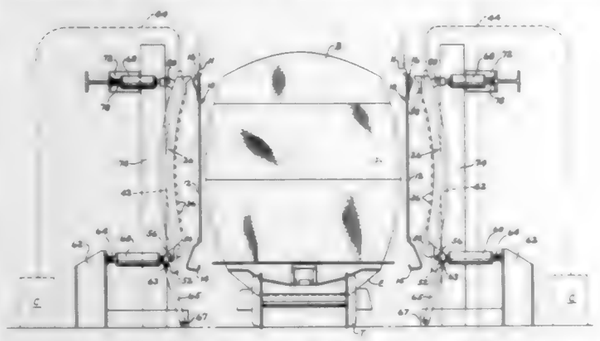
Thomas Lane, Crown City, Ohio, assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Aug. 6, 1965, Ser. No. 477,753

5 Claims. (Cl. 72—399)

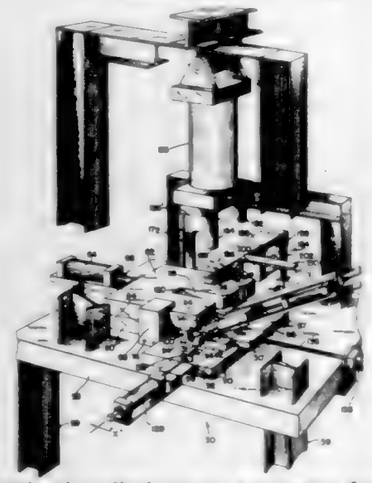
Apparatus for folding a generally flat side sheet against bulkheads in a railway car including a vertically extending pusher structure having a concave inner contour which contacts and folds the side sheet into an arcuate contour.

Pins on the pusher structure contacting the side sheet are biased outwardly by fluid pressure means and are mounted for longitudinal relative movement. A separate



side still pusher is carried by the pusher structure and is mounted thereon for relative pivotal movement for engaging a side still secured to the side sheet.

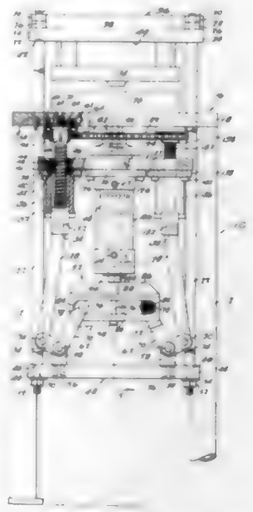
3,373,595
COMBINED SPIKE AND ANCHOR MEMBER AND MANUFACTURE THEREOF
Foster E. Harris, Harrison Township, Montgomery County, Ohio (300 Heikes Ave., Dayton, Ohio 45405)
Filed Dec. 10, 1964, Ser. No. 417,448
13 Claims. (Cl. 72—403)



This application discloses an apparatus for manufacturing a combined spike and anchor member. Such combined member has a spike which has a pointed end and a curved upper end, a sidewise anchor arm to rest on top of the lower flange of a railroad rail, and a forward hook member to hook around the edge of such lower flange. The apparatus bends a rectangular cross-sectioned pointed bar by various steps to produce the combined spike and anchor member. The straight spike portion of the member is driven through a hole in a tie plate beneath the rail. The tie plate rests on a railroad tie so that the horizontal arm of the anchor part rests on top of such lower flange of the railroad rail and the forward hook of the anchor part is hooked over the edge of such lower flange. The various components of the apparatus for performing the bending steps on the bar are shown in the drawings.

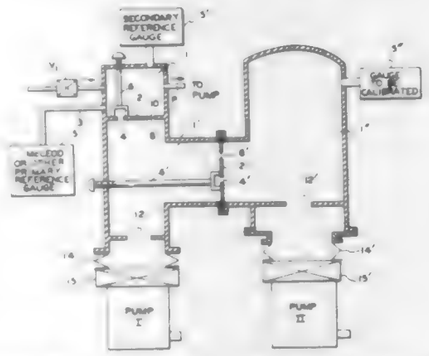
3,373,596
HYDRAULIC PRESS
Gerd M. Moeller and Alfred H. K. Haeussler, both of 5841 W. 107th St., Chicago Ridge, Ill. 60415
Filed June 18, 1965, Ser. No. 465,042
7 Claims. (Cl. 72—446)

A press comprising a support, a bed fixed on the support, a ram movably mounted on the support facing the bed and adapted to move toward and away from the bed, rod means slidably engaged on the support and fixed to the ram, an upper pressure plate positioned at the side of the bed remote from the ram, means for adjusting the upper pressure plate toward and away from the bed, a lower pressure plate positioned at the side of the upper



pressure plate remote from the bed and spaced from the upper pressure plate, means articulating the lower pressure plate to the upper pressure plate, and a hydraulic cylinder fixed to the upper pressure plate having a piston rod operatively connected to said articulating means.

3,373,597
VACUUM CALIBRATION APPARATUS
John C. Simons, Jr., 206 Conant Road, Weston, Mass. 02193
Filed June 23, 1965, Ser. No. 466,269
20 Claims. (Cl. 73—4)

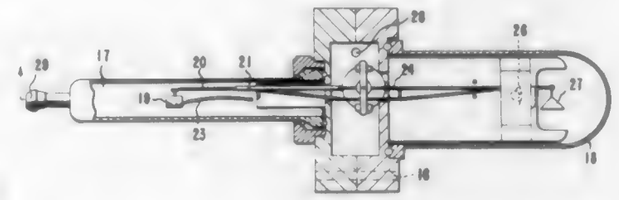


Apparatus for calibration of vacuum gages to as low as 10^{-7} torr. The device consists of a series of chambers interconnected through a series of accurately defined orifices. Each chamber is connected to a diffusion pump of known capacity. Thus if the pumping rate, orifice size and pressure in the preceding chamber are known the pressure in any given chamber can be readily computed. A knife edged slot orifice is utilized because of its predictable effect upon the molecular flow between chambers. Means are provided to change the range of pressure in any chamber.

3,373,598
THERMAL GRAVIMETRIC ANALYZER
Donald R. Johnson and Raymond W. Tabeling, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,437
3 Claims. (Cl. 73—15)

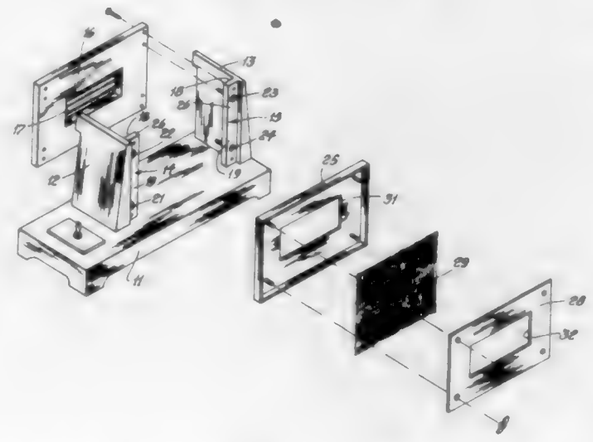
An apparatus for measuring the changing weight of a sample as a function of time and temperature comprising

a support, a chamber mounted on the support, a weight-responsive means mounted in the chamber having at least one horizontally disposed arm adapted to receive a sample at the extremity, means responsive to the weight-responsive means for measuring the temperature of the sample and openings in the chamber adapted to pass a gas over the sample in a substantially horizontal direc-



tion. The horizontally disposed arm preferably comprises a first member adapted to receive the sample at one of its ends and a second member of similar material connected to the opposite end of the first member, the connection being effected by an expansion clip which compensates for any change in length of the first member with changes in temperature.

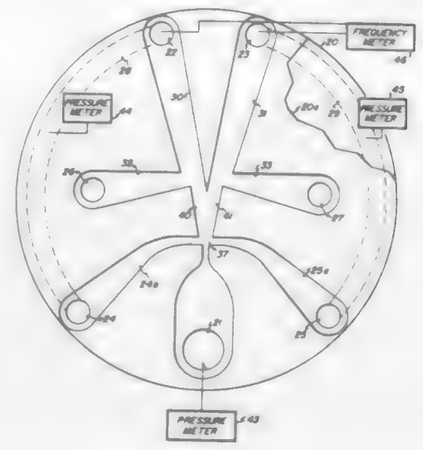
3,373,599
HEAT TEST APPARATUS
George S. Higginbottom, Matawan, N.J., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 27, 1965, Ser. No. 428,594
4 Claims. (Cl. 73—15)



A heat test apparatus is proposed to test planar specimens of textiles, rubber, plastics, metals, wood and finishes by radiating the specimens with infrared radiation. The specimens are located in a double frame which is magnetically attached to upright flanged supports so as to locate the double frame at a spaced distance from a second plate carrying infrared generating means in an opening at its center.

3,373,600
METHOD FOR DETERMINING FLUID CHARACTERISTICS UTILIZING FLUID STREAM OSCILLATING DEVICES
Lael B. Taplin, Livonia, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Continuation of application Ser. No. 346,131, Feb. 20, 1964. This application Oct. 13, 1966, Ser. No. 596,365
3 Claims. (Cl. 73—32)

A method for determining the characteristics, such as density, quality, enthalpy, and bulk modulus of a fluid, the principal components of which are known, in which the fluid is passed through a fluid oscillator and the frequency of oscillation is measured. The average pressure of the fluid at a predetermined location in the oscillator is also measured. These two measurements are then usa-

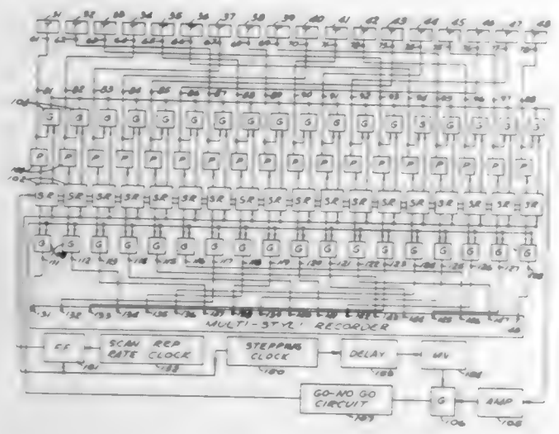


ble, along with the calibration constant of the oscillator and other known constants, in well known formulas to obtain the desired characteristics.

3,373,601
DEVICE FOR THE ANALYSIS OF THE SINKING SPEED OF BLOOD CORPUSCLES IN A CALIBRATED TUBE
Stanislaus Monn, 115 Schulstrasse, 8105 Regensdorf, Zurich, Switzerland
Filed Aug. 2, 1965, Ser. No. 476,404
Claims priority, application Switzerland, Aug. 5, 1964 10,326/64
7 Claims. (Cl. 73—61.4)

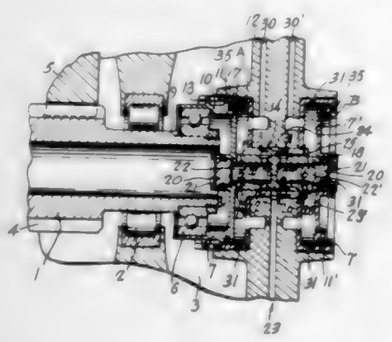
A device for filling an elongated, hollow calibrated tube for the purpose of analyzing the sedimentation rate of blood corpuscles, having a resilient body which has an elongated recess therein opening outwardly at one end thereof, the diameter of said recess being slightly greater than the outer diameter of said calibrated tube. The body has annular sealing means adjacent the open end thereof, the diameter of said sealing means being less than the outer diameter of said calibrated tube. When said recess is filled with blood and the calibrated tube is inserted through the open end of the body and moved toward the other end thereof, the outer surface of said tube will sealingly engage said sealing means and the blood in said recess will be displaced into the interior of said calibrated tube.

3,373,602
ELECTRONIC SCAN ULTRASONIC INSPECTION SYSTEM
John A. Wendt, Park Ridge, and Bernard J. Lefebvre, Schaumberg, Ill., assignors to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 30, 1964, Ser. No. 414,760
5 Claims. (Cl. 73—67.5)



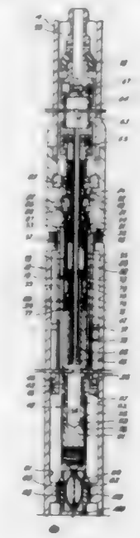
An ultrasonic inspection system, especially for testing relatively flat material, comprising a plurality of transducers positioned above the material in spaced across, facing relation to it. The transducers are pulsed to generate ultrasonic pulses in a staggered order, so that no two adjacent transducers pulse consecutively. A gating circuit is connected to the transducers to enable each transducer to transmit electrical signals corresponding to echo pulses received by that transducer from the material as a result of only its own generated pulse to a certain channel of a multi-channel recording device. Each transducer is connected to a separate channel of the recording device, and each channel is positioned to correspond to the position of the transducer to which it is connected. Thus, when each transducer has been pulsed once, a fairly detailed indication is recorded on the device of a cross-section of the tested material.

3,373,603
TORQUEMETER WITH POSITIVE AND NEGATIVE READING
Roy A. Chapman, Greenfield Park, Quebec, Canada, assignor to United Aircraft of Canada Limited, Longueuil, Quebec, Canada
Filed Mar. 28, 1966, Ser. No. 537,851
11 Claims. (Cl. 73—136)



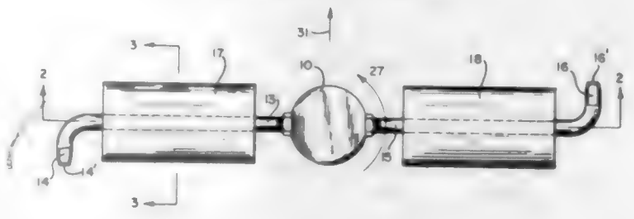
A torquemeter for measuring positive and negative torque transmitted by a shaft through helical gearing. The shaft is movable axially in either direction depending on the magnitude of torque transmitted. A hydraulic spool valve arrangement located axially at the end of the shaft provides counter pressure against the axial movement of the shaft due to the torque transmitted, the amount of counter pressure applied providing an indication of the torque transmitted by the shaft. The counter pressure is provided when movement of the spool valve passes hydraulic fluid to one of two pistons connected to the shaft to balance the movement of the shaft.

3,373,604
FORMATION PRESSURE-TESTING APPARATUS
Roy L. Dudman, Sugar Land, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Feb. 14, 1966, Ser. No. 527,259
6 Claims. (Cl. 73—152)



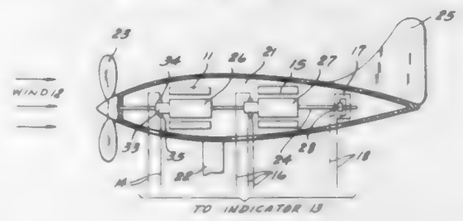
As exemplary of one embodiment of the invention disclosed herein, apparatus including an enclosed chamber at atmospheric pressure or a pressure lower than anticipated formation pressures and a normally-closed valve is adapted to be positioned in a full-bore packer. Thereafter, with the packer set, opening of the valve will place the well annulus below the packer in communication with the enclosed chamber and reduce the pressure in the annulus. In addition to collecting a sample of formation fluids in the chamber, where suitable pressure-measuring devices are associated with the apparatus, a so-called "dry test" can also be performed by the apparatus even though the tubing string is full.

3,373,605
AIR SPEED INDICATING APPARATUS
John L. Beilman, Lancaster, N.Y., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York
Filed Feb. 21, 1966, Ser. No. 529,001
5 Claims. (Cl. 73—182)



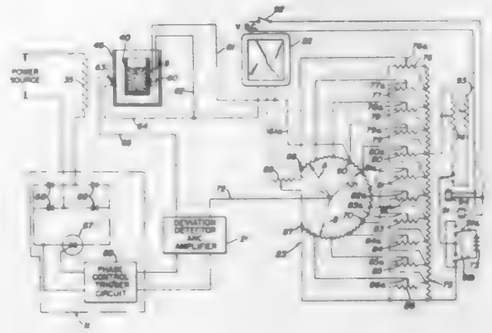
A true air speed indicating instrument having two rotating arms driven by a constant speed motor, velocity sensors on the tips of the arms and air foils having opposite angles of incidence mounted severally on each of the arms.

3,373,606
MULTIPURPOSE WIND INSTRUMENT
Guido Novello Guidelli Guidi, % SIAP, Via Massarenti 412/2°, Bologna, Italy
Filed Oct. 13, 1965, Ser. No. 495,583
Claims priority, application Italy, Oct. 14, 1964, 7,382/64
16 Claims. (Cl. 73—189)



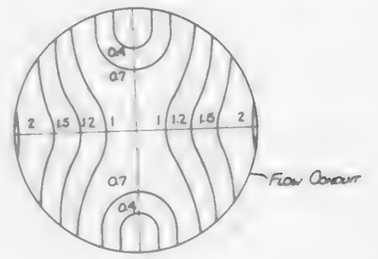
A wind sensing and indicating arrangement for providing information with regard to the parameters of wind. A propeller or similar wind-responsive object is located in the path of the wind and rotated thereby. This rotation is mechanically transmitted to electrical generators in which voltages are induced as a result of this mechanical rotation due to the action of the wind. One such electrical generator supplies an output signal proportional to the velocity of the wind. Another or second electrical generator provides an output signal representative of the wind direction. A third electrical generator transmits an output signal indicative of the duration of time of the action of the wind. Through these three electrical generators, therefore, the parameters of the wind are specified. All three electrical generators are driven by a common shaft by the wind sensing or wind-responsive member. Compensating elements are included in the circuitry interconnecting the electrical generators with corresponding indicators, so as to assure precise indications and readings. All electrical signals and all energy required for the operation of the instrument, of the present invention, is supplied only by the wind. No external power supplies are used for the purpose of operating any of the electrical generators or indicators associated with the outputs of the generators.

3,373,607
CALORIMETER APPARATUS AND METHOD OF DIRECTLY DETERMINING ENTHALPY
Robert A. Schoenlaub, Columbus, Ohio, assignor to Harrop Precision Furnace Company, a division of Harrop Ceramic Service Co., Columbus, Ohio, a corporation of Ohio
Filed Jan. 29, 1965, Ser. No. 430,512
9 Claims. (Cl. 73—190)



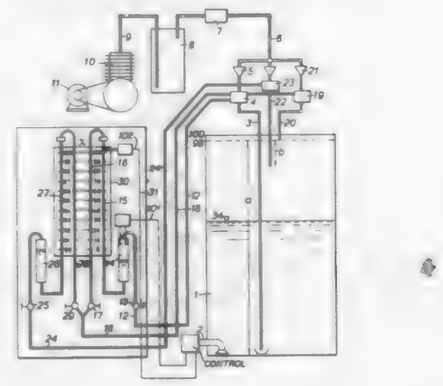
Direct determination of enthalpy is effected by calorimetric apparatus which maintains a constant rate of heat transfer over an extended temperature range. The constant rate of heat transfer is electrically controlled by means of an electronic circuit which compares an actual temperature differential in the heat transfer elements of the calorimetric apparatus with a predetermined desired temperature differential and applies any detected difference to apparatus controlling the rate of heat transfer.

3,373,608
ELECTROMAGNETIC FLOWMETER
Broder Ludwig Ketelsen, Gross Ellerhausen, Germany, assignor to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 547,137, Oct. 15, 1964. This application Mar. 8, 1966, Ser. No. 532,664
14 Claims. (Cl. 73—194)



An electromagnetic flowmeter in which two electrodes are disposed at diametrically-opposed positions of a flow conduit through which passes the fluid to be measured, a magnetic coil being provided to establish a magnetic field in said conduit to produce a signal across the electrodes, which field has a non-uniform configuration so as to render the signal insensitive to changes in the velocity profile of the fluid.

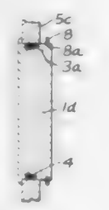
3,373,609
SYSTEM FOR MEASURING THE HEIGHT OF THE LIQUID LEVEL IN TANKS
Per Rohrt Sundby, Midtasen 52, Ljan, Oslo, Norway
Filed July 19, 1965, Ser. No. 472,839
Claims priority, application Norway, July 22, 1964, 154,101; Sept. 14, 1964, 154,749
9 Claims. (Cl. 73—299)



An apparatus for measuring the height of the liquid level and consequently the liquid quantity in a tank, said apparatus comprising a first and second pressure sensitive means located at varying levels in the tank, as well as a liquid manometer means responsive to each of said pressure sensitive means, and located outside said tank. The ratio of the specific gravities of the liquids in the

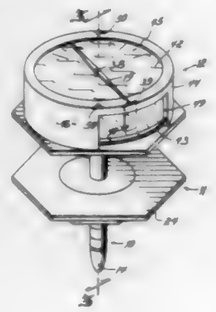
manometer means, and therefore the deflections of each of said manometer means in response to a given change in height of the liquid level in said tank, are equal to the ratio between the vertical distances of the respective pressure sensitive means from the highest desired liquid level in the tank.

3,373,610
SIGHT WINDOW FOR MACHINES AND CONTAINERS
Ortwin Stieber, Nassau, Bahamas, assignor to Tepro Technical Production Company Limited, Nassau, Bahamas
Filed Mar. 6, 1964, Ser. No. 349,878
Claims priority, application Switzerland, Oct. 2, 1963, 12,088/63
3 Claims. (Cl. 73—334)



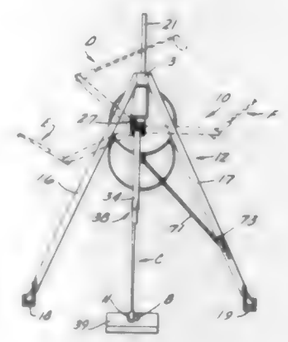
1. For insertion into an opening of a wall, especially of a container: light transparent disc means having a peripheral surface portion provided with peripheral groove means, one side of said disc means being provided with radially extending flange means radially protruding beyond said peripheral surface portion, the depth of said groove means increasing in the direction toward said flange means, and elastically deformable sealing ring means arranged in said groove means and in non-compressed condition having an outer diameter in excess of the outer diameter of said peripheral surface portion, said sealing ring means having an inner diameter so as tightly to engage the bottom of said groove means, the width of said groove means exceeding the extension of said ring means in the direction of the width of said groove means.

3,373,611
STEAK THERMOMETER
David H. Trott, % Crossbow, Inc., 8120 Blue Ash Road, Cincinnati, Ohio 75236
Filed Mar. 4, 1966, Ser. No. 531,729
7 Claims. (Cl. 73—352)



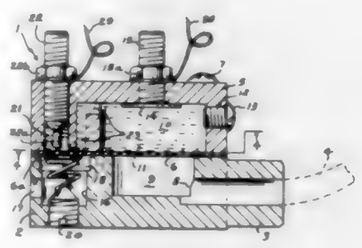
A steak thermometer having an elongated probe and a temperature-indicating mechanism at one end of the probe, the thermometer including an adjustable stop for setting the depth of penetration of the probe, the thermometer further including a windowed viewing device for determining the attainment of a pre-selected temperature by the appearance or disappearance of a heat responsive pointer.

3,373,612
MECHANICAL GOLFER
William H. Thompson, Escondido, and William J. Glasson, Solana Beach, Calif., assignors to Goldcraft Incorporated, Escondido, Calif., a corporation of California
Filed Dec. 27, 1965, Ser. No. 516,347
26 Claims. (Cl. 73—379)



A mechanical golfer having a club arm rotatably mounted upon a frame, the club arm having wrist means hinged freely on the free end of the club arm for pivotal movement with respect thereto within the radial plane. Grip means are provided on the wrist means for rolling movement about the axis of the club handle. Motor means move the club arm and the club in correspondence to the golfer's backswing and automatically release the arm at the end of such backswing. Potential energy storing means then drive the club arm and the club downwardly through the foreswing with the club arm being braked so as to decelerate same during the followthrough portion of the swing.

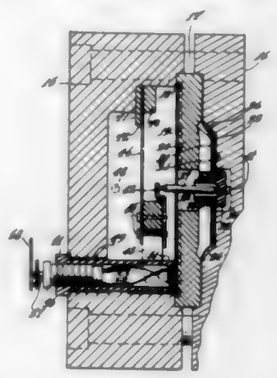
3,373,613
PRESSURE TRANSDUCER
Henry B. Whitmore, Rte. 5, Box 369, San Antonio, Tex. 78211
Filed July 26, 1966, Ser. No. 568,074
7 Claims. (Cl. 73—398)



1. A pressure transducer comprising a dielectric casing having an upper body portion, a lower body portion, a flexible dielectric diaphragm clamped between the upper and lower body portions, said lower body portion having an annular fluid pressure chamber therein opening downwardly, closed at its upper end by a first portion of said diaphragm and a pressure fluid inlet conduit from the exterior, opening into said fluid pressure chamber, adapted to be connected to a fluctuating fluid pressure, said lower body portion having a smaller spring chamber extending downwardly therein in spaced parallel relation to the fluid pressure chamber closed at its upper

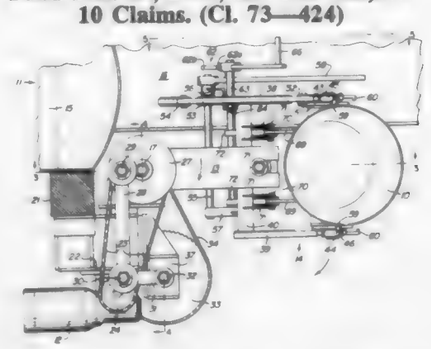
end by a second portion of said flexible dielectric diaphragm, compression spring means in said spring chamber yieldably impinging said second diaphragm portion for urging the same upwardly, spring adjusting means in said lower body portion for adjusting the impinging pressure of said spring means against said second diaphragm portion for deflecting the same upwardly, said upper body portion having an annular electro-conductive liquid receiving chamber therein extending upwardly from and closed by said first diaphragm portion in concentric opposed relation to said fluid pressure chamber, an electric contact terminal concentrically fixed in said annular electroconductive liquid receiving chamber in spaced relation above said first diaphragm portion, said upper body portion having a second smaller electroconductive liquid receiving chamber therein extending upwardly from and closed by said second diaphragm portion, a second electric contact terminal adjustably fixed in said second electroconductive liquid receiving chamber, extending downwardly into predetermined spaced relation above said second diaphragm portion, said upper body portion having an electroconductive liquid passage formed therein extending between said first-mentioned electroconductive liquid chamber and said smaller second electroconductive liquid chamber in predetermined closely spaced relation to said second diaphragm portion arranged to be increased and decreased in cross-sectional area by downward and upward deflection of said second diaphragm portion by movement of an electroconductive liquid when contained in said liquid chambers, for varying said cross-sectional area of the electroconductive liquid between said liquid chambers to vary the electric potential between said electric contact terminals in said electroconductive liquid chambers.

3,373,614
DIFFERENTIAL PRESSURE GAUGE
Robert D. Neyer, Oreland, Pa., assignor to Yarway Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1965, Ser. No. 503,891
6 Claims. (Cl. 73—407)



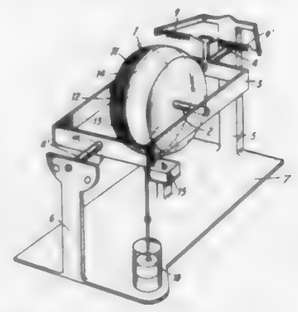
In the present differential pressure indicator of the type utilizing coupling between magnet and spiral armature to bring the indication outside of the pressure vessel, the spiral armature is cantilever mounted with adjustment from the outside at one end, the magnet is narrowed down in the axial direction of the armature to one-sixth the pitch of the armature at its flat face, the pressure diaphragm has a constant effective operating area, for which there is positive securing against slipping, improved edge mounting means, clamping plates for stiffening the central portion and prevention of displacement beyond operative positions, the magnet is mounted to a resilient element biased against diaphragm movement and external adjustable linkage alters the gauge range without disturbing its zero position.

3,373,615
DOUBLE PIVOTING TARE BUCKET SAMPLING APPARATUS
Joseph M. Silver and Harry Lane, Ogden, Utah, assignors to Ogden Iron Works Company, Ogden, Utah, a corporation of Utah
Filed Feb. 21, 1966, Ser. No. 528,872
10 Claims. (Cl. 73—424)



Apparatus for periodically taking samples from a flowing stream of material, for example, a tare sample from a flowing stream of sugar beets, by moving a sampling receptacle such as a tare bucket through the flowing stream from one side to the other side and returning it to its starting point for repeat sampling. The apparatus is characterized by an arm mounted for oscillation about a fixed pivot axis and by a second arm pivotally connected to the first arm for rotation. The second arm carries the sampling receptacle, and drive means are provided for rotating the second arm completely around its pivotal connection with the first arm. Thus, as the first arm oscillates, the second arm carries the sampling receptacle through a complete circle, during at least a part of an oscillation of the first arm, enabling the sampling to be carried out within a minimum amount of space.

3,373,616
GYROSCOPIC INSTRUMENT WITH MEANS FOR INTRODUCING ITS ANGULAR DATA INTO A DIGITAL COMPUTER
Pierre Henri Dugay, Asnieres, France, assignor to D.B.A., Paris, France, a French company
Filed Oct. 16, 1964, Ser. No. 404,416
Claims priority, application France, Oct. 18, 1963, 951,084, Patent 1,380,644
5 Claims. (Cl. 74—5.6)

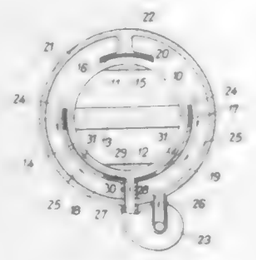


A gyroscopic instrument with means for introducing its angular output quantities into a digital computer.

3,373,617
GYROSCOPIC INSTRUMENT
Martin Lässig, Kiel-Hasseldieksdamm, Germany, assignor to Anschutz & Co., G.m.b.H., Kiel-Wik, Germany, a limited-liability company of Germany
Filed Mar. 23, 1966, Ser. No. 536,724
Claims priority, application Germany, Mar. 25, 1965, A 48,742
11 Claims. (Cl. 74—5.46)

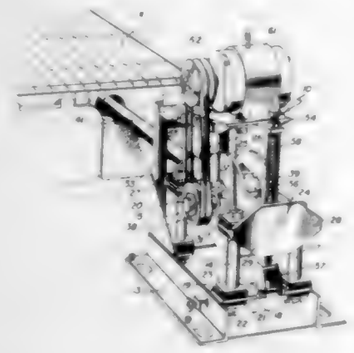
1. In a gyroscopic instrument, the combination comprising a hollow sphere, at least one motor-driven gyro-

scope mounted within said sphere, a vessel having an inlet and an outlet and surrounding said sphere at a distance therefrom providing for a gap between the outer surface of said sphere and the inner surface of said vessel, a liquid filling said vessel, guide means on said vessel outside of said gap constituting a passageway leading from said outlet to said inlet, a motor-driven pump included in



said passageway for circulating the liquid through said gap and through said passageway, current-supplying means including conductive electrode portions of said surfaces for supplying electrical energy to said gyroscope through the liquid in said gap, said inlet being so located that the stream of liquid entering said gap therethrough is operative to keep said sphere floating within said vessel, and cooling means for cooling said passageway.

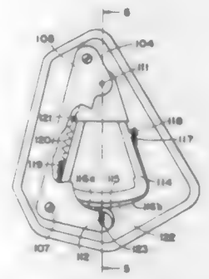
3,373,618
DRIVE FOR STOKER
Earle C. Miller, Worcester, Russell C. Rivers, Boylston, and Michael J. Ivanisin, Worcester, Mass., assignors to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Aug. 12, 1965, Ser. No. 479,189
7 Claims. (Cl. 74—87)



This invention relates to a drive for a stoker and, more particularly, to apparatus arranged to produce an oscillation of a resiliently-mounted stoker to bring about the movement of solid fuel along its surface.

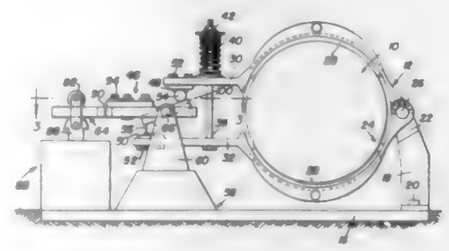
3,373,619
INSTRUMENT MOVEMENT
Kenneth L. Tate, Howard R. Jaquith, Harold S. Hopkins, and Nathaniel B. Nichols, Rochester, N.Y., assignors to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Original application Sept. 27, 1961, Ser. No. 141,127, now Patent No. 3,256,740, dated June 21, 1966. Divided and this application Oct. 4, 1965, Ser. No. 529,610
10 Claims. (Cl. 74—89.2)

A tape drive, for transforming relatively small deflections of a moving part into relatively large deflections of an indicator or the like, includes a sector having a cylindrical surface and being deflectible about the axis of the cylindrical surface. A cylindrical segment is coaxially fixed to a rotatable shaft mounted parallel to the axis of the sector's cylindrical surface. The cylindrical surface of the sector and the segment are substantially tangent. A flat flexible tape is secured at one end to the sector, passes over the cylindrical surface of the sector, between sector and segment, and thence over the segment, lying flat on the surfaces of the latter and having its other end secured to the segment. Another flat flexible tape has one end secured to the segment, passes around the segment as if a combination of the first tape, goes between segment and sector, and thence along the cylindrical surface of the sector, having its other end secured to the sector. The tapes run parallel to each other so that if the sector is deflected, one tape can be wound upon the segment for the major part of a revolution



thereof, while the other tape is correspondingly unwound from the segment. Of the four tape ends, three are rigidly fixed in place, while the fourth is fixed in place by a spring. The shaft is mounted in bearings, one on each side of the general plane of the sector. The one bearing is an ordinary bearing allowing the shaft to rotate only. The other bearing is a slot whose length lies along a radius of deflection of the sector. The slot allows irregularities in the tape and surfaces of segment and sector to deflect the shaft along the slot against the pull of the spring which tensions the tapes and draws the segment against the cylindrical surface of the sector with only a thickness of tape separating sector and segment surfaces. The normal play in the first mentioned allows the necessary deflection of shaft toward or away from the cylindrical surface of the sector.

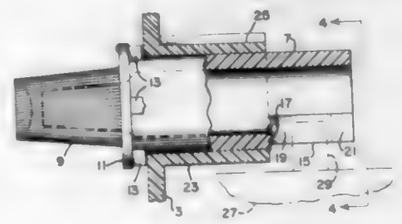
3,373,620
BRAKE ACTUATING MECHANISM
Edgar A. Jordan, 2510½ Gettle St., Klamath Falls, Oreg. 97601
Filed Mar. 8, 1966, Ser. No. 532,776
8 Claims. (Cl. 74—96)



1. A motion transmitting assembly adapted to apply force in generally opposite directions on a pair of members disposed in spaced apart relation, said assembly comprising a lever arm pivotally supported at one end for oscillatory movement about a first axis through a plane adapted to generally parallel said opposite directions, an

elongated abutment member pivotally supported intermediate its opposite ends for movement about a second axis generally paralleling said first axis and extending transversely of said abutment member, and abutment means carried by said lever and operable to adjustably limit pivotal movement of said abutment member in one direction, said abutment member including opposite end portions thereof disposed on opposite sides of a plane disposed normal to the longitudinal centerline of said lever arm adapted to engage said pair of members to urge the latter apart upon pivotal movement of said lever arm in a direction causing rotation of said abutment member in a direction opposite to said one direction.

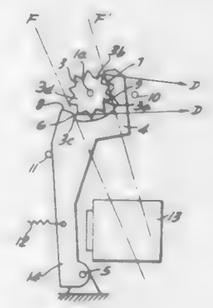
3,373,621
ACTUATOR KNOB AND SWITCH ARRANGEMENT FOR A RADIO RECEIVER
Glenn R. Mundschenk, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 27, 1966, Ser. No. 545,757
8 Claims. (Cl. 74—104)



A rotatable actuator knob assembly including spaced, transversely extending fingers operatively engaging a slide switch actuating lever, while at the same time captivating the actuator knob assembly in a cabinet.

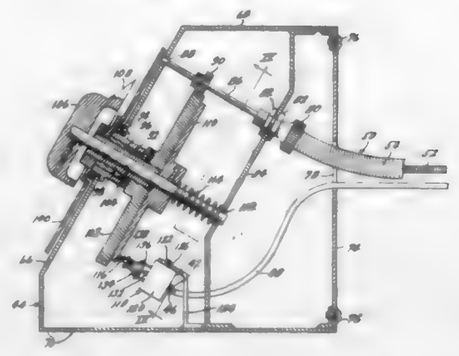
The present invention relates to an actuator knob and switch arrangement for radio receivers and like devices and more specifically to a rotatable actuator knob suitable for actuating an inexpensive slide switch in such a receiver.

3,373,622
STEPPING TRANSMISSION
Erich Stautmeister, Marburg, Germany, assignor to Alfred Engelmann, Wennefostel, Germany
Filed May 21, 1965, Ser. No. 457,783
11 Claims. (Cl. 74—143)



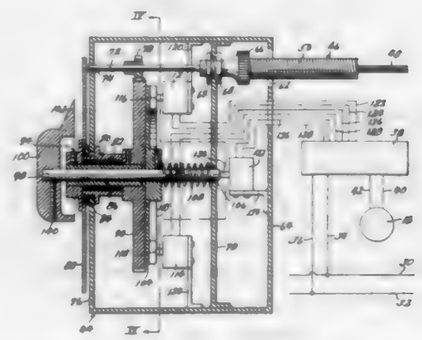
A reciprocating pawl has a face successively engaging the teeth of a stepping wheel and inclined to the path of pawl movement to produce a great turning angle of the stepping wheel. The pawl is reciprocated by an electromagnet and a spring, and has two engaging faces slanted at different angles to the path of movement of the pawl in accordance with the characteristics of the electromagnet and spring. In a modified embodiment, one engaging face is angular or curved to vary the force required of the electromagnet.

3,373,623
REMOTE CONTROL DEVICE
Robert D. Gutting, Topeka, Kans., assignor to The Home-O-Nize Co., Muscatine, Iowa, a corporation of Iowa
Filed Dec. 23, 1966, Ser. No. 604,423
12 Claims. (Cl. 74—388)



1. In combination with a power-operated apparatus having an electric motor for driving said apparatus and an operative electric circuit including said motor, a remote control device comprising a cabinet, an operating member carried rotatably in said cabinet, means interconnecting said apparatus to said operating member whereby the latter is rotated in synchronization with the former, a second operating member carried rotatably in said cabinet, means interconnecting said operating members whereby said second operating member is normally rotated by said first operating member but being manually disengageable to permit independent rotation of said second operating member, an electric switch included in the electric circuit of said motor and mounted in said cabinet, and a switch operating member carried by said second operating member and positioned to engage and open said switch at one point in the rotation of said second operating member.

3,373,624
REMOTE CONTROL APPARATUS
Robert D. Gutting, Topeka, Kans., assignor to The Home-O-Nize Co., Muscatine, Iowa, a corporation of Iowa
Filed Dec. 23, 1966, Ser. No. 604,468
10 Claims. (Cl. 74—388)



1. In combination with a power-operated device having a rotatable drive shaft and having a reversible prime mover operable to turn said drive shaft, a remote control apparatus comprising:

(a) a frame,
(b) a first member carried rotatably in said frame,
(c) means interconnecting said drive shaft with said first member whereby the latter is rotated in timed synchronization with the former,
(d) a second member carried rotatably in said frame,

(e) means interconnecting said first and second members whereby the latter is normally rotated by the former, but which is manually disengageable to permit independent manual rotation of said second member,

(f) a pair of actuating devices carried by said frame and interconnected to said prime mover, said actuating devices functioning when operated to cause operation of said prime mover in respectively opposite directions, and

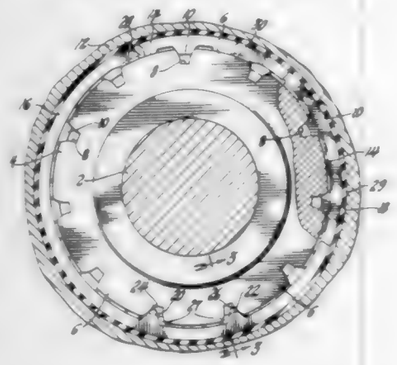
(g) operating means carried by said second member and operable as said second member is rotated to engage and operate said actuating devices selectively, said second member having a single angular index position in which its operating means do not engage either of said actuating devices and said prime mover is therefore not actuated, said operating means engaging and operating one of said actuating devices whenever said second member is positioned between said index position and a cross-over point angularly spaced from said index point, and engaging and operating the other of said actuating devices when said second member is positioned in the remainder of the full circle of revolution of said second member, said actuating devices being operable to cause operation of said prime mover, and hence rotation of said second member, in a direction to return said second member to its index position by rotation thereof in respectively opposite directions.

3,373,625

BACKLASH REDUCING MECHANISM

Robert C. Keller, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 19, 1966, Ser. No. 573,692
12 Claims. (Cl. 74—409)



1. A mechanism for reducing relative rotation between members splined to each other, said mechanism including a connecting member having a plurality of spaced projections thereon, each of said projections extending into an aligned groove between adjacent splines of one of said members, and means for biasing each of said projections into engagement with a spline face and away from engagement with the next adjacent spine face.

3,373,626

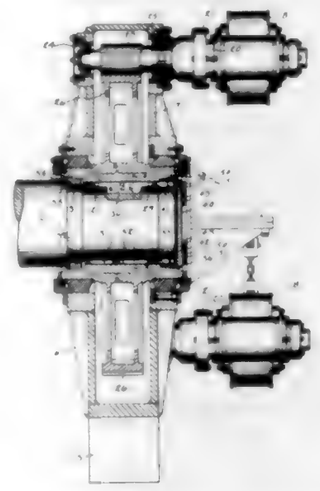
MOUNTING ASSEMBLY FOR SHAFT MOUNTED GEAR DRIVE UNIT

George P. Maurer, Wauwatosa, and Allyn E. Phillips, Brookfield, Wis., assignors to The Falk Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Sept. 22, 1966, Ser. No. 581,280
4 Claims. (Cl. 74—421)

1. In combination with (1) a shaft mounted gear drive unit including a hollow shaft member, a gear attached to the hollow shaft member, and speed reduction gearing driving said gear, and (2) a first shaft on which the gear drive unit is to be supported;

a pair of spaced supporting rings on the first shaft, each ring having an inner surface contacting the first shaft and a tapered peripheral surface contacting an interior portion of the hollow shaft member, each such interior portion of the hollow shaft member being tapered to mate with the tapered peripheral surface of its abutting supporting ring, and the balance of the hollow shaft member except for such portions being spaced from the periphery of the first shaft;



means establishing a driving connection between the hollow shaft member and the first shaft; and

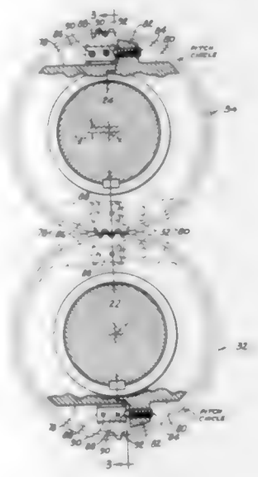
a locking plate attached to the first shaft and having a marginal portion extending beyond the periphery of the first shaft, said locking plate including an opening through which said means establishing a driving connection can be inserted into position with the locking plate attached to the first shaft.

3,373,627

ADJUSTABLE SYNCHRONIZATION GEARS FOR SERPENTINE SLITTING MACHINE

Alfred Wesstrom, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed Jan. 27, 1966, Ser. No. 523,451
5 Claims. (Cl. 74—440)



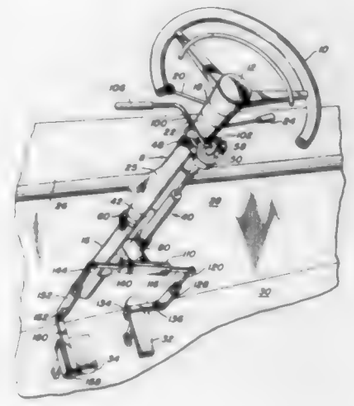
Adjustable driving and driven mesh gears rotatable about parallel axes having a variable spaced relationship wherein each gear is provided with two part gear teeth and adjusting means connected thereto for adjusting one part relative to the other part to vary the circular thickness of the two part gear teeth. The adjustable one part of the driving and driven gear teeth are arranged in reverse relative arrangement to permit varying the circular thickness of the teeth of each gear by a desired amount to eliminate backlash or unwanted clearance between the teeth of each gear in both directions of rotation of the driving gear.

3,373,628

HAND CONTROL FOR MOTOR VEHICLES

Louise Lake, New York, N.Y., and George H. Mortimer, Montclair, N.J., assignors, by mesne assignments, to Louise Lake Enterprises, Inc., Mount Kisko, N.Y., a corporation of New York

Filed Apr. 1, 1965, Ser. No. 444,650
16 Claims. (Cl. 74—484)



4. A manual control for operating the brake pedal and accelerator pedal of motor vehicles having a steering column comprising a fixed housing and a steering wheel rotatably mounted on the upper end of the housing, said control comprising:

(a) a drive shaft having upper and lower ends,

(b) means for mounting the drive shaft vertically on said vehicle and along said fixed housing for oscillation about its axis,

(c) a lever secured at one end to the upper end of said drive shaft for imparting said oscillation thereto and having a handle on its other end movable adjacent and generally parallel to the under side of said steering wheel whereby the operator's hand may rest on the steering wheel while moving the handle,

(d) means including a horizontal shaft operatively connected to the lower end of said drive shaft for translating the oscillations of the drive shaft into oscillations of said horizontal shaft about a horizontal axis,

(e) means secured to said horizontal shaft including a lost motion linkage at one side of said horizontal shaft to operate the brake pedal and a lost motion linkage at the other side of said horizontal shaft to operate said accelerator pedal.

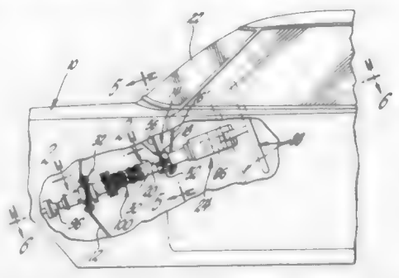
3,373,629

STEERING COLUMN ASSEMBLY

Robert D. Wight, Walter W. Maltman, and Thomas C. Powell, Saginaw, and Harold M. Olds, East Lansing, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 29, 1966, Ser. No. 546,312
12 Claims. (Cl. 74—492)

8. In a steering mechanism for a vehicle of the type having spaced support means mounting a steering jacket, steering shaft means including telescopically related sections extending through and rotatably supported by the steering jacket, a manual steering instrumentality secured to one steering shaft section and a steering gear device secured to another steering shaft section, the improvement comprising providing a portion of the steering jacket with an axially extending series of peripheral perforations to form an energy absorbing lattice of interconnected strip elements arranged to yield in generally radial direction to axially shorten the steering jacket upon the application thereto of a predetermined axially directed force.

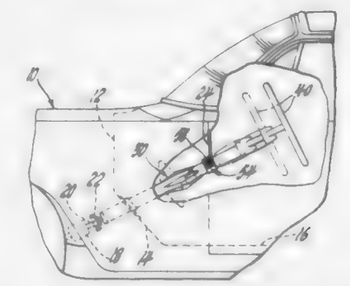


3,373,630

STEERING COLUMN ASSEMBLY

Byron T. Heurtebise, Milford, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 29, 1966, Ser. No. 546,313
9 Claims. (Cl. 74—492)



7. In a vehicle steering mechanism of the type including a steering gear and telescopic steering shaft means operatively connected to the steering gear, an energy absorbing support jacket mounted adjacent both of its ends on the vehicle and enclosing and rotatably supporting said steering shaft means, said jacket being provided intermediate its ends with circumferentially spaced axially extending slots defining a plurality of energy absorbing strip elements arranged to yield in generally radial direction under a predetermined impact force on said jacket.

3,373,631

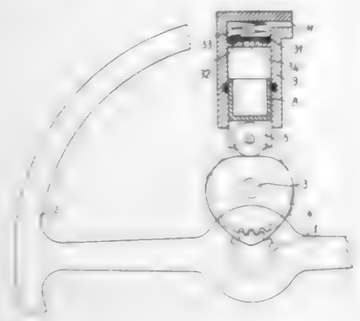
SERVO-STEERING SYSTEMS FOR AUTOMOBILE VEHICLES

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a corporation of France

Filed Oct. 22, 1965, Ser. No. 501,377
Claims priority, application France, Mar. 16, 1965, 9,475, Patent 87,497
1 Claim. (Cl. 74—495)

A steering arrangement for an automotive vehicle comprising a steering shaft rotatably mounted upon the vehicle. A steering wheel is fixed to said shaft for rotating said shaft. A second shaft is rotatably mounted upon the vehicle extending parallel to the steering shaft having a cam thereon. Means are operatively connected to both said shafts for rotating said second shaft and said cam by the steering shaft at reduced speed. A thrust piston frictionally engages the cam and such piston is disposed in a cylinder receiving a variable pressure fluid from a supply system to exert a resistance against rotation of the cam.

A valve cooperates with a seat disposed inside the cylinder to open only in the direction of return whereby fluid may

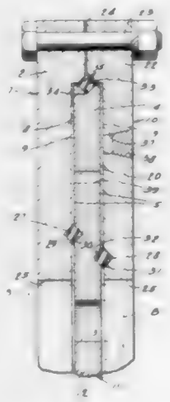


return to the supply system and a calibrated orifice in the valve allows the fluid to enter the cylinder during the return movement of the steering shaft.

3,373,632
PLASTIC CONTROL CABLE
James R. Jeromson, Jr., Willoughby, and Donald A. Boyce, Chesterland, Ohio, assignors to The Weatherhead Company
Filed Jan. 21, 1966, Ser. No. 522,168
5 Claims. (Cl. 74—502)

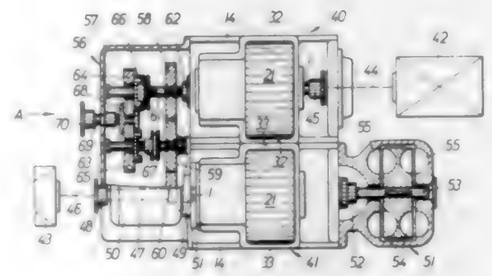
A push-pull flexible control cable assembly for remote operation of a device is arranged so that the control cable forms a reinforcement for the shaft and knob portions of the assembly to resist bending upon application of axial forces. One end of the control cable is doubled back upon itself and radially offset with respect to the remainder of the control cable for substantially the entire length of the shaft portion of the assembly and is completely encapsulated therein. The point where the control cable begins to double back upon itself defines an eyelet to permanently lock the control cable to the axial movement of the knob.

3,373,633
VISCOUS TORSIONAL VIBRATION DAMPERS
Charles F. Desmond, Williamsville, and Rollin Douglas Rumsey, Buffalo, N.Y., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 503,578
15 Claims. (Cl. 74—574)



A torsional vibration damper has an attachment hub with a radially extending circular damper disk and mounting flange portion on which is relatively rotatably supported an inertia mass comprising complementary members secured together and defining a working chamber within which viscous damping coupling medium is retained, and a spaced relation between the working faces of the disks and inertia mass is maintained by combination dynamic sealing, bearing and spacing ring means.

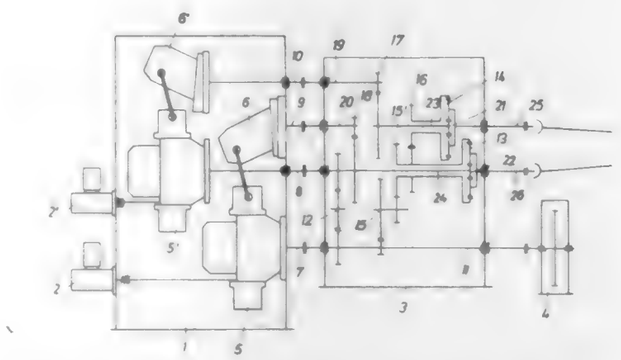
3,373,634
COMPACT TRANSMISSION
Manfred Schrag, Heidenheim (Brenz), Germany, assignor to Voith Getriebe KG., Heidenheim (Brenz), Germany
Filed Feb. 18, 1965, Ser. No. 433,753
Claims priority, application Austria, Feb. 25, 1964, A 1,584/64
3 Claims. (Cl. 74—661)



The present invention relates to a hydrodynamic transmission with torque converter and mechanical transmission part in which the guide wheel housing together with the bearing housing for the mechanical transmission part forms a self-supporting unit in the form of one work piece.

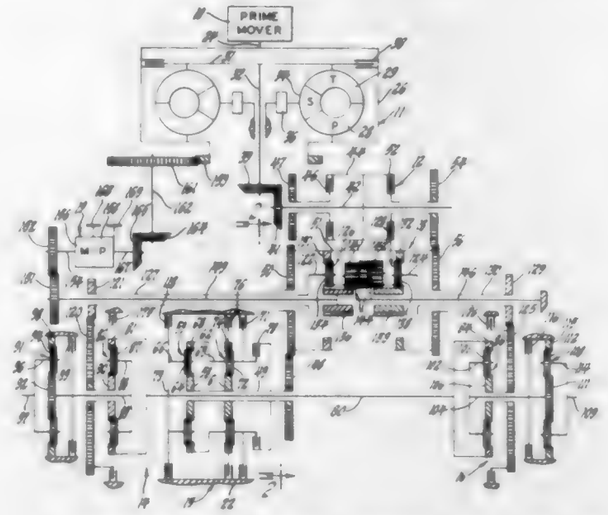
According to the invention the said housing is provided with longitudinal flanges to permit combining said transmissions to self-supporting duplex transmissions.

3,373,635
DRIVE MECHANISM FOR TWO ROLLING FRAMES OF A TUBE REDUCING ROLLING MILL
Hans Meurer, Monchen-Gladbach, Germany, assignor to Mannesmann-Meer Aktiengesellschaft, a corporation of Germany
Filed Apr. 9, 1965, Ser. No. 447,109
2 Claims. (Cl. 74—665)



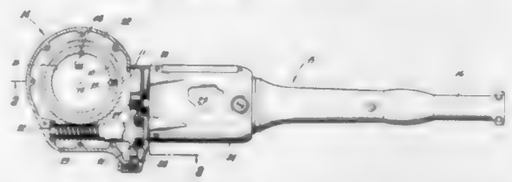
Drive means for tube reduction rolling mills that comprise a hydro double gearing with pumps and motors, a mechanical double gearing including planetary gearing, gear wheels in driving connection with the mechanical double gearing and with the pumps, and output shafts in driven connection with the mechanical gearing and driving the rolls of the rolling frames in the proper assigned direction.

3,373,636
VEHICLE TRANSMISSION INCLUDING STEERING BY DRIVING
William G. Livezey, Robert M. Tuck, and Marion D. Smith, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,570
26 Claims. (Cl. 74—720.5)



A single input, dual output, vehicle power train having an input driven hydrostatic unit controlling a differential gear unit which is cooperable with a multiple speed ratio gear unit to provide single and dual input drive to a pair of output differential gear units for straight vehicle drive and to provide single and dual input differential drive to the output differential gear units for steering.

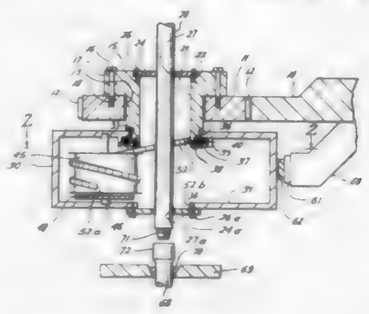
3,373,637
MULTIPLE PURPOSE PORTABLE ROTARY DRIVE UNIT
Howard N. Behnke, Monterey Park, Calif., assignor to Collins Machinery Corporation, Monterey Park, Calif., a corporation of California
Filed Jan. 14, 1966, Ser. No. 520,737
6 Claims. (Cl. 81—57)



The disclosed portable power drive assembly incorporates a rotary drive socket having a peripheral ring gear to which drive is transmitted by a motor via speed reducing gearing. The motor is carried by an arm integral with a housing supporting the socket, and the socket receives and retains an adapter to which drive is transmitted via a key in adapter and socket grooving. A holder may be provided to extend from the arm for attachment to work to resist counter-rotation of the arm about the work axis, and the holder provides a lost motion connection to permit adjustment.

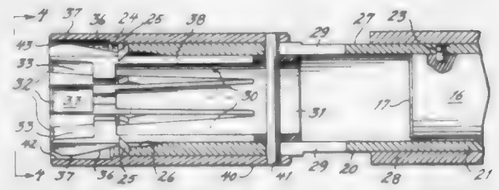
3,373,638
PIPE TONGS
Thomas R. Dunnam, 5870 Westover St., Houston, Tex. 77033
Filed Jan. 6, 1967, Ser. No. 607,783
5 Claims. (Cl. 81—57)

The disclosure of this application relates to pipe tongs which are adapted to securely grip a pipe disposed therethrough, yet which will not compress or bottleneck the pipe and which will result in a minimum of scarring of the exterior surface of the pipe. Pipe tongs are primarily used



in making up and disconnecting threaded pipe connections of petroleum and other wells, but may have other uses.

3,373,639
AUTOMATICALLY ADJUSTABLE SOCKET WRENCH
Leonard Van Dalen and Horace C. Disston, Jr., Westmont, N.J., assignors to Seaboard Tools, Cherry Hill, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 524,205, Feb. 1, 1966. This application June 22, 1967, Ser. No. 647,979
6 Claims. (Cl. 81—112)



The instant invention is essentially concerned with an automatically adjustable socket wrench including a plurality of cylindrically arranged jaws retractably slidable into a generally cylindrical closer for radial contraction, and extendible therefrom for radial expansion, and wherein the closer is provided with internal projections entering between adjacent jaws, and the jaws are configured to avoid overstressing the jaws and the projections, whereby reaction torque is effectively distributed over the structure.

3,373,640
APPARATUS FOR MACHINING GEOMETRIC CONES
John H. Allen, Sr., Pasadena, and Orrin A. Wobig, Seabrook, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 28, 1965, Ser. No. 517,157
5 Claims. (Cl. 82—14)

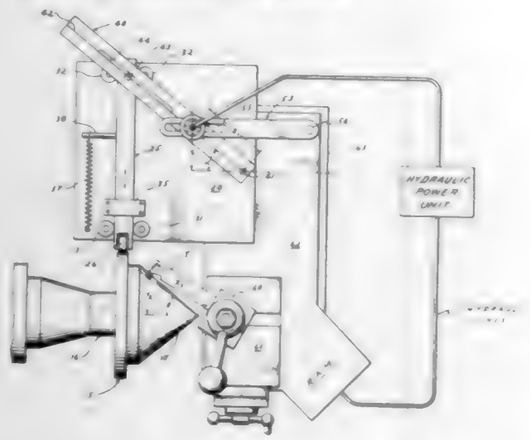
1. For use with a lathe comprising a rotary spindle and having a lathe carriage mounted for movement in the direction of the spindle axis and a cross-slide mounted on the lathe carriage for transverse movement relative thereto, a lathe attachment apparatus for machining geometric cones, said apparatus comprising:

a workpiece;

a pattern cam having the cross sectional configuration of the geometric cone which is to be machined, said cam and workpiece being mounted on the lathe spindle with the cam disposed coaxial with the spindle axis, whereby the cam and workpiece are rotatable by rotation of said spindle;

cam follower means disposed in engagement with the peripheral edge of the cam, whereby a reciprocating lineal motion will be imparted to the cam follower means by rotation of the cam;

a tracer bar guide mounted for pivotal movement about a pivot fixed with respect to the lathe body and slidably and pivotally connected to said cam follower means, whereby reciprocating lineal motion of the cam follower means imparted by rotation of the cam is converted to oscillatory pivotal movement of the tracer bar guide, said tracer bar guide having a straight guide surface thereon which is coplanar with the axis of said tracer bar pivot;

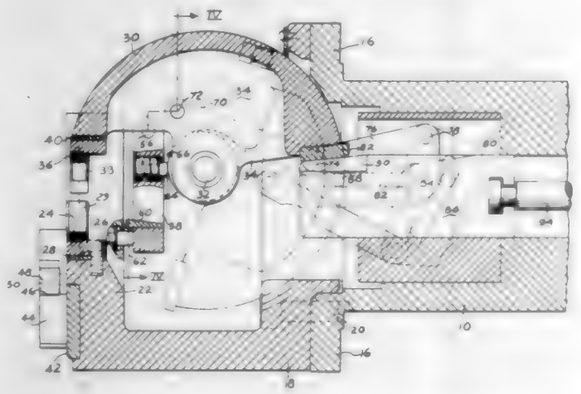


a tracing stylus fixedly mounted with respect to the lathe cross-slide and disposed in engagement with the guiding surface of said tracer bar guide, whereby the tracing stylus is adapted to follow said guide surface as the lathe carriage is driven towards the workpiece;

a cutting tool mounted on the cross-slide and positioned with its cutting edge applied to the workpiece at the rotary axis thereof; and

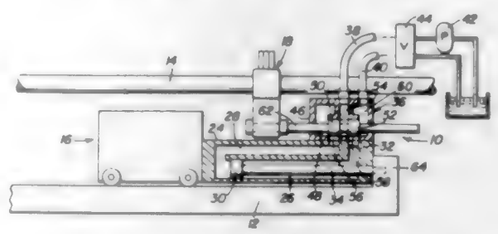
lathe tracer attachment means for moving said cutting tool in direct correspondence with the movement of said tracing stylus whereby as the lathe carriage is moved towards the workpiece, it is machined by the cutting tool to the form of a geometric cone having a cross sectional configuration corresponding to the shape of the pattern cam and a taper which corresponds to the angular position of the tracer guide bar relative to the lathe spindle axis.

3,373,641
CHUCK CONSTRUCTION
Otto Hermann, Cincinnati, Ohio, assignor to The R. K. Le Blond Machine Tool Co., Cincinnati, Ohio, a corporation of Delaware
Filed Apr. 22, 1965, Ser. No. 449,991
12 Claims. (Cl. 82—40)



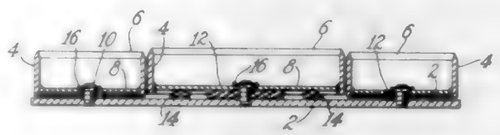
A chuck for holding the end of a crankshaft while the pin portions of the crankshaft are machined. The chuck includes a stationary jaw and a pivoted jaw. The pivoted jaw is operated by an arm which is connected through a lost motion linkage to a slidable block. The slidable block, which is connected to a reciprocating fluid motor, also carries a wedge for locking the pivoted jaw closed. The stationary jaw carries adjustable drive members for engagement with the chuck.

3,373,642
HYDRAULICALLY REGULATED WORKPIECE ACCELERATING DEVICE
Richard M. Simpson, Twinsburg, Ohio, assignor to Ferro Dynamics, Inc., a corporation of Ohio
Filed Feb. 9, 1966, Ser. No. 526,213
5 Claims. (Cl. 83—76)



1. In a system for controlling the movement of a massive device to perform an operation on a continuously moving workpiece engageable by a signal controlled clamp, an acceleration control mechanism connected to said device for imparting movement thereto comprising, a housing connected to said device having a fluid chamber elongated generally in a direction parallel to the path of movement of said workpiece, a piston slidably received in said chamber, frame means fixedly mounting said piston and guiding movement of said housing along a path generally parallel to said chamber, a source of fluid under pressure, servo valve means mounted on the housing and connecting said source to the fluid chamber for displacement of the device relative to the piston, and valve actuating means connecting the valve means to the clamp for varying the pressure of the fluid in said chamber in response to engagement of the clamp with the workpiece.

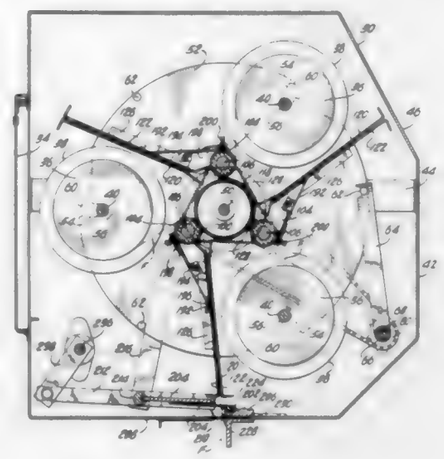
3,373,643
APPARATUS FOR PUNCHING OUT WORKPIECES
Ernst Maximilian Spengler, Offenbach, Germany, assignor to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey
Filed Feb. 11, 1966, Ser. No. 526,863
9 Claims. (Cl. 83—620)



Apparatus for punching out workpieces from sheet material, the apparatus including a support and punching means mounted on the support. Means are provided for attaching the punching means to the support so that the punching means is movable in directions normal to the plane of the support and in directions other than normal to the plane of the support.

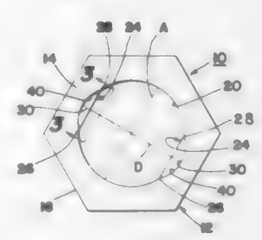
3,373,644
MAGAZINE FOR DISPENSING PHOTOGRAPHIC FILM
John L. Bjelland, Glen Head, N.Y., assignor to Powers Chemco, Inc., Glen Cove, N.Y., a corporation of New York
Filed Oct. 29, 1965, Ser. No. 505,645
7 Claims. (Cl. 83—650)

The invention provides a film dispening magazine for dispensing photographic film in variable lengths from a selected one of a plurality of rolls of film. The magazine may be used by itself or as a part of a photomechanical



camera. External control means are provided for the selection of one of the rolls, for feeding the film from the selected roll and for severing the desired length of film.

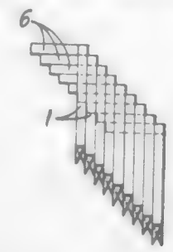
3,373,645
REVERSIBLE SELF-THREADING NUT
Robert J. Holton, Rocky River, Ohio, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Dec. 10, 1965, Ser. No. 512,529
9 Claims. (Cl. 85—32)



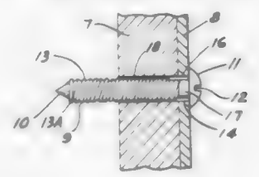
A reversible, self-threading fastening device adapted for assembly with a threadless member including a body having an opening therethrough. The opening has a continuous axially extending surface having a plurality of projections which extend radially into the opening and are formed from the material of the body removed from recessed portions made in the axially extending surface. The projections are formed so that the upper and lower surfaces merge to form a linear edge which is adapted to cut into a threadless member and which edge terminates at its opposite ends in the axially extending surface.

3,373,646
STAPLE
George H. Ehlert, 2095 Olive Ave., Lakewood, Ohio 44107
Filed Mar. 24, 1966, Ser. No. 537,103
5 Claims. (Cl. 85—49)

A staple cartridge comprising a plurality of like one-piece staples, each staple provided with a pair of spaced substantially parallel leg sections which have penetrating points at the free ends. A cross bar connects the other ends of the legs, each cross bar in the cartridge being substantially parallel to the cross bars of adjacent staples. A planar head portion extends from one side of the cross bar beyond the legs at substantially right angles to the same, and being of substantial area and portions of adjacent staples in the cartridge comprising the heads being in juxtaposition with the heads generally parallel and the staples being adhered together whether by means of the legs or heads, or both as circumstances may dictate.

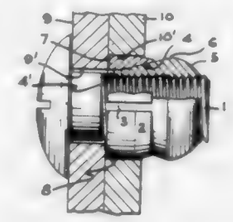


3,373,647
COIL SPRING EXPANSION FASTENER
Duane M. Sherock, 32190 Five Mile Road, Livonia, Mich. 48154
Filed Mar. 8, 1966, Ser. No. 532,810
1 Claim. (Cl. 85—64)



This application discloses a fastening device consisting of a threaded element having an expansion spring wound concentrically thereon, the spring having an axial extension and return portion at one end and a loop at the opposite end, the extension and return portion being arranged to hold the spring against rotation and the loop being arranged to move along the threaded member upon rotation thereof, to expand radially and contract longitudinally the spring, when rotated in one direction and to expand longitudinally and contract radially the spring, when rotated in the opposite direction.

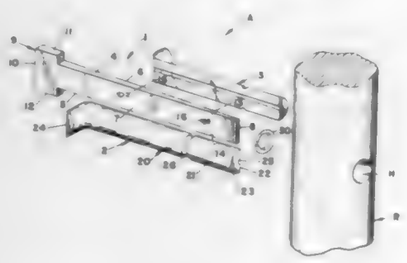
3,373,648
FASTENERS WITH EXPANSION SLEEVE
Kenneth H. Pitzer, Los Angeles, Calif. assignor of two-thirds to Paul M. Gross, Tarzana, Calif.
Continuation of application Ser. No. 276,030, Apr. 26, 1963. This application June 22, 1966, Ser. No. 559,692
6 Claims. (Cl. 85—67)



1. A fastener adapted to be inserted into an orifice of a work piece and removed from said orifice by manipulation of only one end of said fastener, comprising a threaded shaft, means to rotate said shaft positioned at one end of said shaft, a bushing positioned on said shaft, said bushing being expansible radially of said shaft, said bushing including an elastically deformable female slit ring mounted on said shaft, said female ring having an interior conical surface and an exterior cylindrical

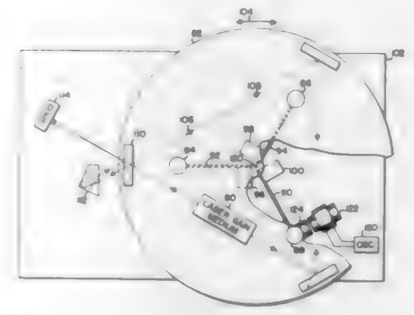
surface, said female ring having a flat roughened annular surface adjacent to said rotatable means, said annular surface extending substantially perpendicular to said shaft having a diameter no greater than the diameter of said female ring, and thrust means mounted on said shaft to exert an axial thrust on said female ring, said last named means including a male member mounted on said shaft, said male member having a conical exterior surface mating with the interior conical surface of said female ring, said female ring positioned between said rotating means and said male member and said female ring being split by a single slot extending the full length of said female ring and from the interior to the exterior surfaces of said female ring, said thrust means adapted to exert an axial force on said bushing to move said male member into said female member and thereby exert a radial force on said slit female ring, said male and female conical surfaces making substantially equal acute angles with the axis of said shaft and said angles being substantially greater than the angle of repose of said elastically deformable female slit ring, said annular surface being adapted to engage an inner facing surface of a contiguous surface placed between said rotating means and said bushing so that the friction between said annular surface and said inner facing surface of said contiguous surface is such that the minimum frictional resistance in the train of friction between surfaces in said bushing in frictional engagement is located between said thrust means and said shaft on relative rotation thereof, whereby on placement of the fastener in a workpiece and on rotation of said rotatable means at said one end thereof in one direction the male member and the female ring are moved towards each other to radially expand said female ring, and on reverse rotation of said rotatable means the female ring contracts axially forcing said male member to move in a direction axially away from said female ring to reduce said radial force.

3,373,649
SPLIT FASTENER WITH LOCKING WEDGE
Steadmon O. Taylor, Fort Lauderdale, Fla., assignor to Inventions and Invention Consultants, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 501,920
5 Claims. (Cl. 85—79)



A cotter including a center wedge located intermediate a pair of cotter halves which are provided at their ends with outwardly projecting shoulders. The center wedge moves longitudinally intermediate the cotter halves from a withdrawn position wherein the cotter is transversely contracted to an inserted position wherein the cotter is transversely expanded. The cotter halves and center wedge are provided with outwardly opening indentations and notches, respectively, which register when the center wedge is in the withdrawn position in the formation of a peripheral groove, and a resilient ring is fitted within the groove for holding the cotter halves and center wedge in the withdrawn position. Nibs are formed on the center wedge which slidably engage longitudinal grooves in the cotter halves so as to preclude misalignment of the latter.

3,373,650
LASER ANGULAR RATE SENSOR
Joseph E. Killpatrick, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,171
8 Claims. (Cl. 88—14)

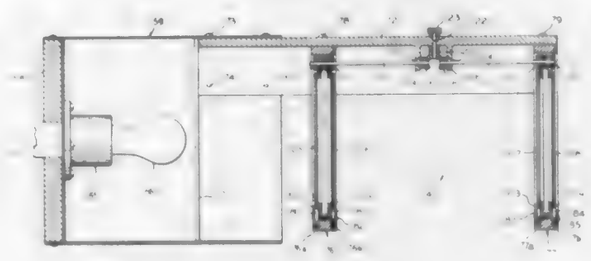


Bias system for laser gyroscope in which the gyroscope is electrically or mechanically oscillated so that it is effectively above the threshold rate a majority of the time including an optical system to compensate for this bias over short time intervals. Over longer time intervals the accumulated bias is relatively negligible.

3,373,651
INTERFEROMETRIC SPECTROMETER UTILIZING THREE FABRY-PEROT ETALONS IN SERIES
Julian E. Mack, Douglas P. McNutt, and Frederick L. Roesler, Madison, Wis., assignors to Design, Inc., Madison, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 290,287, June 21, 1963. This application Nov. 28, 1966, Ser. No. 597,480
15 Claims. (Cl. 88—14)

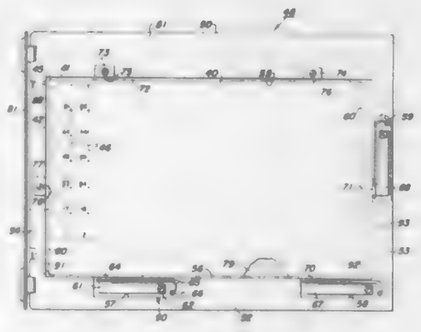
An interferometric spectrometer using three Fabry-Perot etalons in series. The spacings between the plates of the three etalons are different from one another, and are selected so that one peak of the transmittance curve of each etalon coincides in frequency with one peak of the transmittance curve of each other etalon, with all other peaks of the transmittance curves of the etalons being substantially non-coincident in frequency. The output of the spectrometer is detected by a phototube, and is recorded. The spectrometer can be "scanned"; that is, the transmittance curve center frequency can be varied so as to provide a spectral response curve for an input light source over a desired range of frequencies. This is done by means of an electro-pneumatic control system which varies the gas pressure between the etalon plates at a desired rate, while simultaneously precisely maintaining constant the pressure differentials between the etalons.

3,373,652
EDUCATIONAL POLARISCOPE APPARATUS FOR DETERMINING AND OBSERVING STRESS IN PHOTOELASTIC MATERIALS
Fredric E. Flader, Boca Raton, Fla., assignor to Scott Engineering Sciences Corp., Pompano Beach, Fla., a corporation of Florida
Continuation of application Ser. No. 300,503, Aug. 7, 1963. This application June 29, 1967, Ser. No. 655,986
4 Claims. (Cl. 88—14)



A device designed primarily for use as an aid to education in demonstrating the effects of stress in photoelastic material through which materials polarized light is passed at predetermined angles with respect to the stress being applied to the photoelastic material. The polariscope is designed for mobile laboratory use on a wide variety of materials with an almost infinite adjustment of polarizer and quarter wave plates are possible with respect to the photoelastic material.

3,373,653
MICROFICHE HOLDER
Russell R. Roberts, Ontario, and John P. Caldwell, Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,396
6 Claims. (Cl. 88—24)



1. A holding device for supporting a microfiche card in an electrostatographic reproducing machine having a microfiche handling mechanism adapted for moving the microfiche in the plane thereof

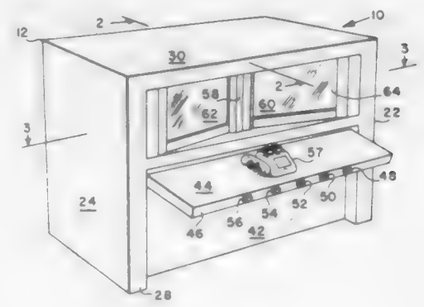
said holding device including a frame structure having four side members defining an opening of larger dimensions than the dimensions of the total image area of the microimages comprising the microfiche,

at least one of said side members having an element provided with a guide surface against which one of the side edges of the microfiche is adapted to abut whereby the microfiche may be precisely positioned relative to said side member,

at least one of the other two side members being provided with a movable force element engageable with another edge of the microfiche and adapted continuously to urge the microfiche against said card guide element,

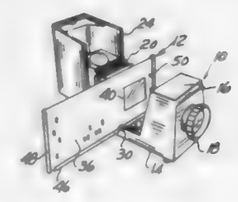
and a cover plate formed with an opening of approximately the same dimensions as the opening in said frame structure and adapted for positioning upon said frame structure with the openings therein in registry and with the microfiche therebetween.

3,373,654
DISPLAY VIEWING APPARATUS
Ann J. Carolan and William J. Carolan, Santa Cruz, Calif. (both of 1642 Ontario Ave., Sunnyvale, Calif. 94087)
Filed Oct. 6, 1965, Ser. No. 493,475
1 Claim. (Cl. 88—24)



A pair of back screen projectors are housed within a cabinet and connected for synchronous operation so that slides can be shown in pairs. Controls are provided for regulating the period and sequence in which images are displayed.

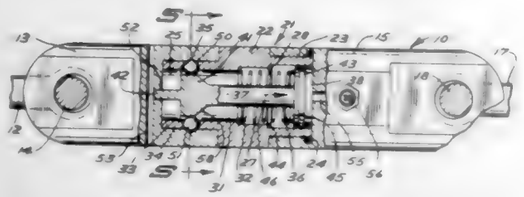
3,373,655
SLIDE PROJECTOR
Donald T. Nicholas, 6200 Crabtree Road, Birmingham, Mich. 48010
Filed Aug. 29, 1966, Ser. No. 575,672
2 Claims. (Cl. 88—26)



1. An improvement for a slide projector comprising a frame, a housing on said frame, an illuminating lamp disposed in said housing, a projection lens and a condenser lens forming a window for said housing between said illuminating lamp and said projection lens, said improvement permitting said slide projector to project an enlarged image of a microfilm transparency disposed off center in a window in a card, said improvement comprising: a pair of substantially parallel rails each mounted on each side of said window on said housing, a substantially rectangular card holder plate having bent-over edges disposed along one bottom long side and two short sides, said bent-over edges forming a channel along each of said sides adapted to be engaged by an edge of said card, a rectangular aperture dimensionally at least equal to said window and disposed relatively to the sides of said plate so as to substantially register with the position of the microfilm transparency in said card and a pair of U-channel shaped slide members disposed on

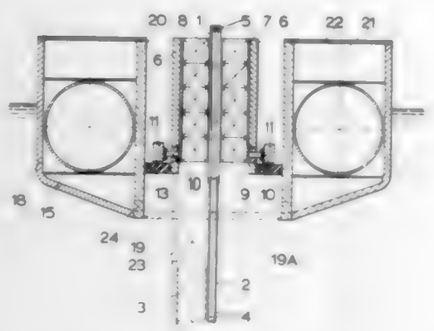
two sides of said rectangular aperture substantially parallel to the short sides of said plate and adapted to slidably engage said rails for fastening of said plate to said housing.

3,373,656
EXPLOSIVELY ACTUATED THRUSTER RELEASER
Marshall Sidney Kriesel, St. Paul, Minn., assignor to Aerospace Systems Company, Minneapolis, Minn., a corporation of California
Filed Apr. 18, 1966, Ser. No. 543,239
2 Claims. (Cl. 89—1)



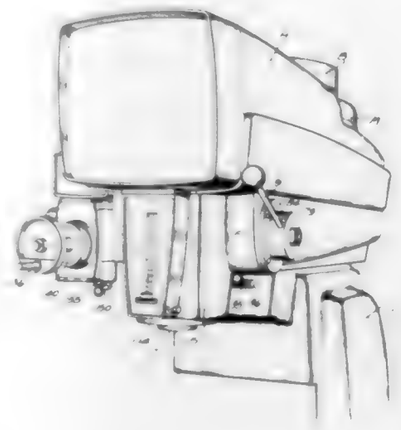
An explosively actuated releasing mechanism comprising two interlocking members held together by ball retainers wherein the ball retainers are released upon energization of an explosive charge acting on a piston and wherein the balls used as retainers cannot escape from the support when the separable item is released. In addition, the piston which releases the balls has an ejector finger which positively removes the separable item and insures that the two items will come apart.

3,373,657
OPEN WATER MISSILE AND CARGO LAUNCHING SYSTEMS
Joel B. Guin, 148 E. 48th St., New York, N.Y. 10017
Filed Dec. 28, 1964, Ser. No. 421,218
6 Claims. (Cl. 89—1.81)



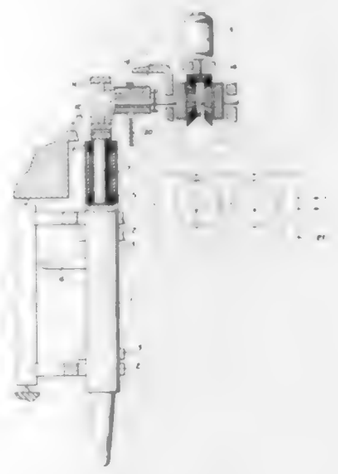
1. A missile launching system comprising:
A floating vessel, a cylindrical hollow beam having a plurality of extensible and retractable telescoping sections suspended downwardly into the water from said vessel, means mounting said hollow beam on said vessel, means for extending and collapsing said telescoping sections, a closed contanier for holding the missile to be launched, guiding means on said container and cooperating with the surface of said hollow beam sections, said closed container for said missile displacing a sufficient volume of water to thereby provide a buoyant missile launching container, means mounted on the lower end of said hollow beam for lowering said closed container for said missile and means for releasing the container whereby the container with the missile therein is propelled upward by the hydrostatic pressure of the surrounding water to thereby launch the missile.

3,373,658
METALWORKING MACHINE
Charles A. Larsen, Union Grove, Wis., assignor, by mesne assignments, to Gorton Machine Corporation, Racine, Wis., a corporation of Wisconsin
Filed Oct. 19, 1965, Ser. No. 497,821
11 Claims. (Cl. 90—14)



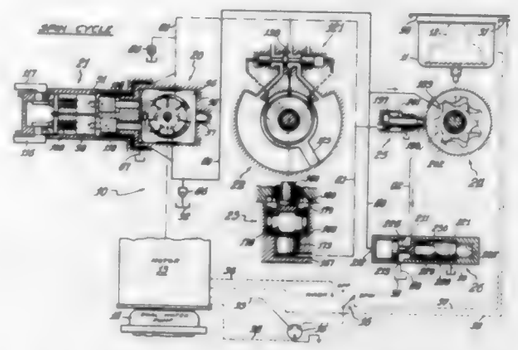
An improved down-feed mechanism including a planetary gear system, and, also, an adjusting and radial locating means for a spindle assembly of a metalworking machine.

3,373,659
TRACING MECHANISM FOR DUPLICATING MACHINE
Alexander Böhme, Langen, near Frankfurt am Main, Germany, assignor to Nassovia Werkzeugmaschinenfabrik G.m.b.H., Frankfurt am Main, Germany
Filed Jan. 17, 1966, Ser. No. 521,145
Claims priority, application Germany, Jan. 30, 1965, N 26,145
5 Claims. (Cl. 90—62)



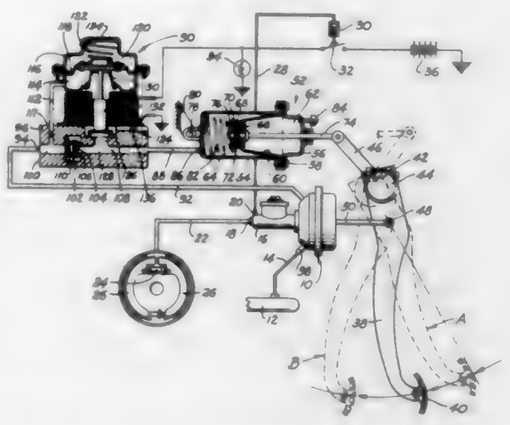
A measuring ring is turnably supported on the tracer of a duplicating tool machine and is engaged by an electrical roller contact on a measuring head. The turntable support of the ring permits movement of this advance control with respect to the tracer around each of two axes extending at right angles to each other.

3,373,660
FLUID DRIVE MECHANISM
Ronald H. Haas, Mount Prospect, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 13, 1965, Ser. No. 513,242
5 Claims. (Cl. 91—278)



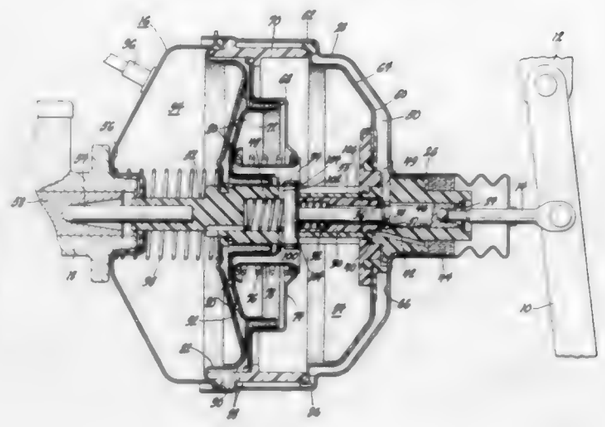
An improved fluid drive for the agitator of a clothes washer including a hydraulic vane type motor having fluid pressure responsive means to automatically move the vane between its terminal positions and including selectively operable arcuate ports whereby the stroke of the vane may be selectively varied.

3,373,661
BRAKE PEDAL POSITIONING DEVICE
Robert E. Reichard, 401 N. Bendix Drive, South Bend, Ind. 46628
Filed Sept. 1, 1965, Ser. No. 484,230
7 Claims. (Cl. 91—391)



1. In combination with a hydraulic brake system for a motor vehicle including a vacuum operated power brake device having a vacuum source connected thereto for normally developing braking pressures in said hydraulic brake system:
a brake applying means including a lever pivotally connected to said power brake device and carrying a rotatable pin spaced from said pivotal connection;
a fluid pressure motor operatively connected to said vacuum operated power brake devices such that the vacuum source communicated to said power brake device creates a pressure differential across a wall in said motor;
a link means operatively connected to said fluid pressure motor and to said rotatable pin such that said motor controls the rotation of said pin to raise and lower said brake applying means in the motor vehicle; and
means controlling the communication between said power brake device and said fluid pressure motor, which means reference the braking pressures and the vacuum source to raise said brake applying means upon failure of said vacuum source.

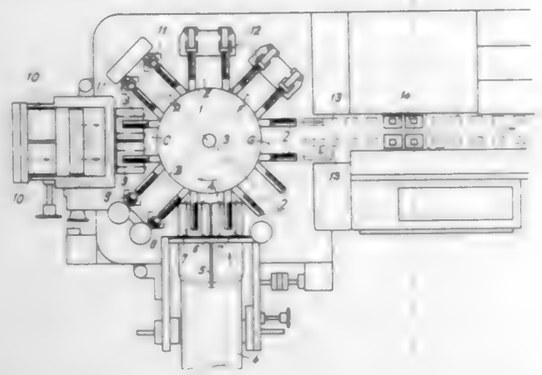
3,373,662
ZERO TRAVEL VACUUM SUSPENDED BRAKE BOOSTER
James A. Voll, Dayton, and George E. Kellogg, Miamisburg, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,345
2 Claims. (Cl. 91—434)



1. A brake booster comprising: a housing carried by a fixed portion of a vehicle; a vacuum inlet to said housing from a vacuum pressure source; an inlet into said housing for communicating atmospheric pressure thereinto; power piston means movably supported by said housing and adapted to transfer an output force to a brake master cylinder; valve means slidably disposed in said housing and arranged to selectively route vacuum and atmospheric pressures to portions of said housing in response to an input force, said valve means acting as a pilot for said power piston means during movement thereof; and a plurality of diaphragms peripherally carried by said housing and being centrally carried by said power piston means, thereby separating said housing into several compartments individually pressurizable, at least one of said diaphragms being responsive to atmospheric pressure and including means for imparting a force on said valve means thereby effectively increasing the input force necessary to obtain a given output force at the brake master cylinder, said last named means includes a pin slidably carried by said power piston means and responsive to movement of one of said diaphragms to impose a force on said valve means during an actuating movement thereof which is transmitted as a resistance to the actuating force acting on said valve means, said pin has a plurality of peripherally disposed resilient bumpers serving to retain said pin in said power piston means and as a shock absorber when contacted by said diaphragm during movement thereof in response to a pressure increase.

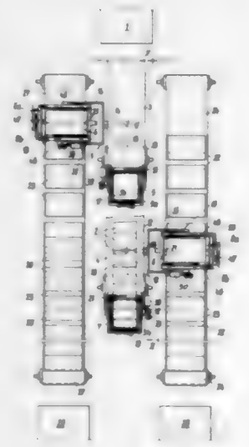
3,373,663
APPARATUS FOR MANUFACTURING PACKING CONTAINERS
Hans Heim, Neuhausen am Rheinfall, Switzerland, assignor to Schweizerische Industrie-Gesellschaft, Neuhausen am Rheinfall, Switzerland
Filed Apr. 19, 1967, Ser. No. 631,928
Claims priority, application Switzerland, Apr. 22, 1966, 5,865/66
1 Claim. (Cl. 93—44.1)
A machine for making packing containers is disclosed

in which an indexable mandrel wheel is provided with equi-spaced pairs of mandrels around which the containers



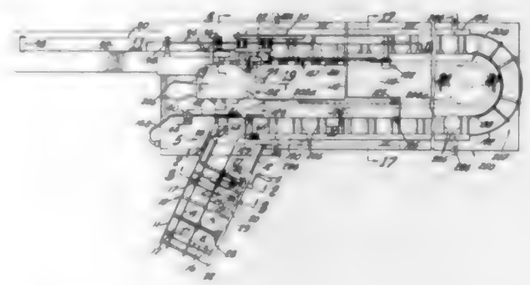
are formed at recessive stations so that two containers are in course of being formed at each station.

3,373,664
APPARATUS FOR PRODUCING CROSS-BOTTOM VALVE BAGS
Friedrich Franz Brockmüller, Lengerich, Westphalia, Germany, assignor to Windmoller & Holscher, Lengerich, Westphalia, Germany
Filed Feb. 5, 1964, Ser. No. 342,744
Claims priority, application Germany, Feb. 22, 1963, W 33,959
14 Claims. (Cl. 93—8)



In an apparatus for producing cross-bottom valve bags, which includes at least one tube-forming device and at least a pair of bottom-laying devices which are disposed laterally with respect to the tube-forming device, and in which the tubes are transported via a pair of superposed conveyor belts from the tube-forming device onto delivery tables where a predetermined number of them are stacked into bundles, an improved transfer system for stacking the tubes and transferring bundles of tubes to the pair of bottom laying devices, which comprises a pair of transfer devices each of which includes two delivery tables disposed at approximately right angles to one another which are mounted in a frame which is rockable about a vertical axis through the angle enclosed between them, and each of which is adapted to cooperate with one of the two superposed conveyor belts. A first one of the two delivery tables is thus positioned at the beginning of an operating cycle, underneath one of the superposed conveyor belts which transports tubes from the tube-forming device, and is rearwardly inclined so that it can receive a predetermined number of tubes from the tube-forming device. Thereafter this first one delivery table is pivoted by pivoting means into a horizontal plane and the two tables are rocked through an angle of approximately 90° so that the first delivery table is positioned over a conveyor belt for transporting the bundle of tubes to one of the pair of bottom-laying devices, whereas the other delivery table is now positioned underneath the conveyor belt which transports tubes from the tube-forming device, for receiving a predetermined number of tubes therefrom. Each of the delivery tables includes means for selectively releasing a bundle of tubes when it is positioned over the conveyor belt for transporting the bundle of tubes to one of the pair of bottom-laying devices.

3,373,665
CARTONING MACHINE FOR VERTICAL CARTON FLATS
Elbert L. Bivans, Glendale, Calif., assignor to Bivans Corporation, Los Angeles, Calif., a corporation of California
Filed Apr. 14, 1965, Ser. No. 448,101
12 Claims. (Cl. 93—53)



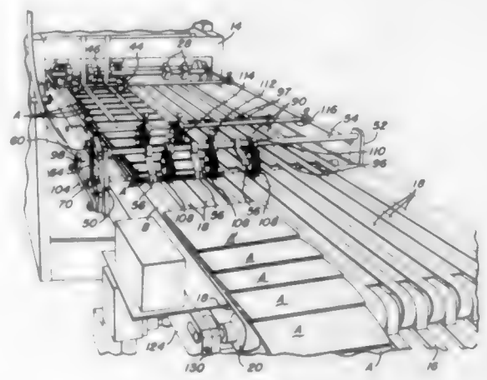
The cartoning machine of this invention provides a conveyer moving at constant speed with a carton transfer device for transferring an open carton in upright position to the moving conveyer. The flat cartons are stacked in a hopper in upright position. The cartons are opened in the course of transfer to the conveyer. The transfer device includes a vacuum cup holder for depositing the open carton on the conveyer while the conveyer is moving. The vacuum cup holder for the carton is on an arm having a pivot which moves on a feed stroke in the same direction as the conveyer, and on a return stroke, it moves in the opposite direction. The vacuum cup holder also moves between a position at the hopper for carton flats and a position at the main conveyer. One cam oscillates a radius arm about a fixed pivot, and the other cam has a link motion for oscillating the vacuum cup holder arm about a pivot carried by the outer end of the radius arm.

In order to resist movement of the carton both vertically and crosswise of the conveyer while supporting the carton for movement with the conveyer, the invention provides an inclined slot extending lengthwise of the conveyer in position to receive and support the top cover flap during travel of the carton on the conveyer.

3,373,666
BATCH DELIVERY MECHANISM
Charles P. Crampton, Hamilton, Ohio, assignor to The Hamilton Tool Company, Hamilton, Ohio, a corporation of Ohio
Filed Mar. 4, 1965, Ser. No. 437,087
16 Claims. (Cl. 93—93)

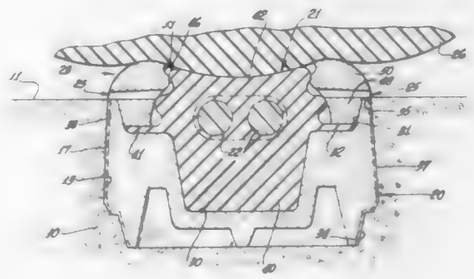
The machine is adapted to advance parcels of paper sheets deposited in echelon fashion upon a multiple-belt endless conveyor, and includes a counter-controlled stop finger which dips toward the conveyor periodically to intercept the leading parcel of a group of parcels, stopping

the group while the conveyor continues to advance. While the group is thereby held immobile by the stop finger, one or more elongate lift rails are elevated between the parallel belts of the conveyor, to lift the parcels slightly above the level of the conveyor surface which normally supports the parcels, thereby displacing the stopped parcels from the advancing influence of the conveyor. The



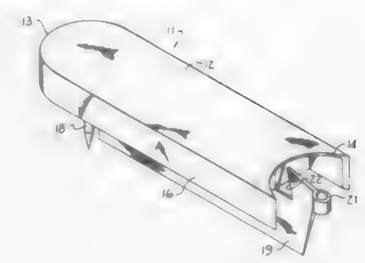
parcels pile up against the stop finger to an extent determined by the counter, thereby to produce a stack containing a predetermined number of parcels; and upon completion of the stack the stop finger is withdrawn, and the lift rails are lowered, permitting the parcels now in stacked formation to once again rest upon the moving conveyor for transport toward the discharge end of the conveyor.

3,373,667
ROAD SURFACE MARKER
Robert W. Taylor-Myers, 2580½ N. Beachwood Drive, Hollywood, Calif. 90028
Filed June 17, 1966, Ser. No. 558,382
8 Claims. (Cl. 94—1.5)



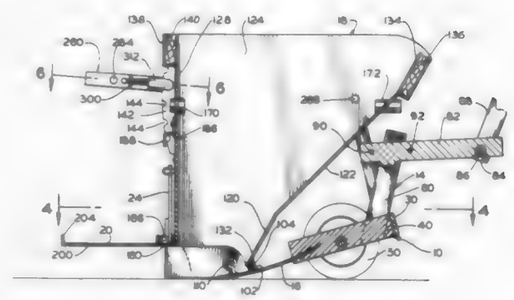
1. A road surface marker comprising:
(a) a base housing having an upper edge and adapted to be set into the pavement of the road with said edge substantially flush with the road surface, said base having a top-open cavity with a horizontal seat between said edge and cavity,
(b) an elastic, compressible, non-metallic core disposed in said cavity with an upper portion extending above said housing edge,
(c) light-reflecting means carried by said upper portion of the core and normally held thereby elevated above the level of the road surface,
(d) a flange around said core and disposed to rest upon said seat in the base housing, and
(e) a ring secured to the top of the base housing to clamp the mentioned core flange against the mentioned seat, said ring encircling the upper portion of the core, and provided with lateral thickened portions to guard said core and spaced on opposite sides of the light-reflecting means to expose the same to view.

3,373,668
INTERLOCKING STRUCTURES FOR EDGING, PAVING, OR THE LIKE
Robert R. Moore, 4010 East Ave., Hayward, Calif. 94542, and Edward Steffan, 18754 Crest Ave., Castro Valley, Calif. 94546
Filed Dec. 15, 1965, Ser. No. 513,927
10 Claims. (Cl. 94—31)



An interlocking structure in the form of tiles or brick which may be employed to construct walkways, borders or dividers for lawns and the like in a simple and straight forward manner is described. The interlocking structures include flat upper walls having marginal walls and strengthening ribs depending therefrom. The sidewalls and ribs are tapered at their lower ends so as to define knife edges which will readily penetrate into the ground when force is applied to the flat upper walls. The structures further include spikes which depend from the upper walls inwardly adjacent the marginal walls, and eyes project outwardly from the marginal walls that positions to receive these spikes of other identical structures. Each structure also includes recesses formed inwardly of its eyes adapted to receive the marginal wall of an identical similar structure when its spike is received in the eye of the former structure.

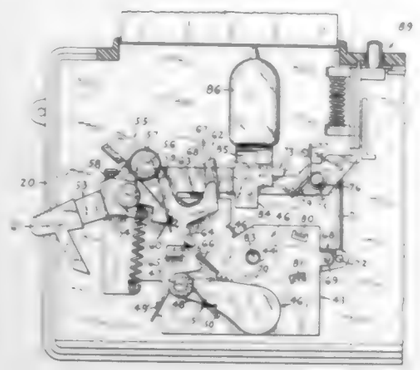
3,373,669
SPREADERS
Francis J. Schmitz, St. Louis County, Mo. (8905 Russell, Brentwood, Mo. 63117)
Filed Sept. 1, 1965, Ser. No. 484,170
5 Claims. (Cl. 94—44)



The invention disclosed herein provides a portable spreader suitable for attachment to the rear portion of a dump truck, adapted to receive the contents of the dump truck and apply the same to preselected surfaces a predetermined widths and predetermined depths, notwithstanding irregularities in the surface to be covered. The

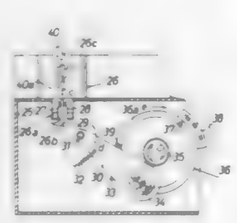
disclosure also provides a spreader which is portable about the job site and may be easily moved by one man and which may be towed behind a vehicle without damaging the surfaces over which it is towed, if so desired.

3,373,670
CAMERA
William L. Lawson, Forest Hills, N.Y., assignor to Whitehouse Products, Inc., Brooklyn, N.Y., a corporation of New York
Filed May 25, 1965, Ser. No. 458,592
5 Claims. (Cl. 95—11)



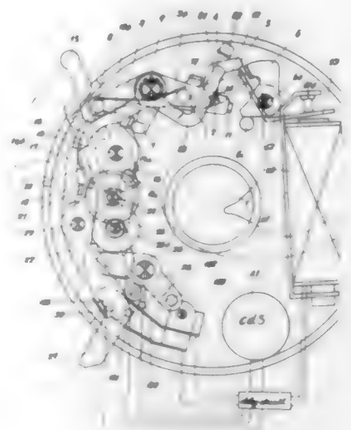
A camera having a shutter, a fixed aperture and a blade movable relative to the shutter and aperture. The blade has a plurality of spaced apertures of different diameter in position to be aligned with the fixed aperture. Means responsive to insertion of a flash bulb in the flash socket to move the blade to align a particular one of the spaced apertures with the fixed aperture. The camera main housing is provided with a door for affording access to the socket, release means being provided to release the door latch and eject a spent flash bulb from the socket.

3,373,671
CAMERA FOR DAYLIGHT AND FLASH PHOTOGRAPHY
Franz Jakob, Unterhaching, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed July 19, 1965, Ser. No. 473,006
Claims priority, application Germany, July 18, 1964, A 46,626
17 Claims. (Cl. 95—11)



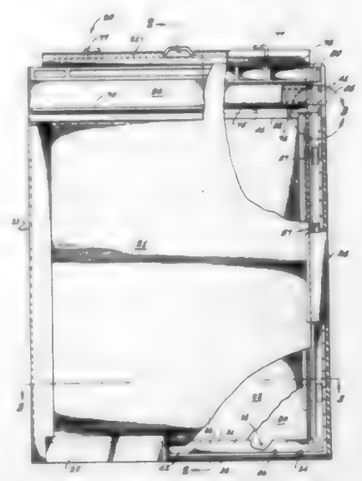
A camera having an objective with a stationary lens component of fixed focal length for daylight photography and a second lens component which moves into registry with the first component to reduce the focal length of the objective for photography in artificial light. The second component is moved into registry with the first component in response to attachment of an illuminating arrangement to the housing of the camera, in response to movement of a built-in reflector into operative position, or in response to insertion of a flash bulb into the socket of a built-in illuminating arrangement.

3,373,672
LENS SHUTTER
Yasunori Ichijo, Kanagawa-ken, and Yukio Nakamura, Chiba-ken, Japan, assignors to Kabushiki Kaisha Hattori Tokeiten
Filed June 30, 1964, Ser. No. 379,155
Claims priority, application Japan, July 3, 1963, 38/34,824
4 Claims. (Cl. 95—63)



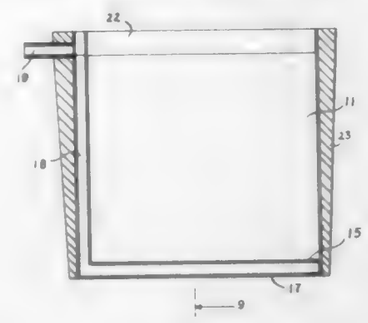
1. In a camera, a single blade means functioning both as a diaphragm and a shutter, said blade means having a normally closed position and being displaceable gradually away from said closed position to provide an exposure aperture of gradually increasing size, said blade means then being displaceable back to said closed position thereof for terminating the exposure, opening means operatively connected to said blade means for displacing the latter from said closed position thereof so as to provide an exposure aperture, retarding means operatively connected with said opening means for retarding the operation thereof to provide a predetermined rate of opening movement of said blade means in response to actuation thereof by said opening means, closing means operatively connected to said blade means for displacing the latter rapidly back to said closed position thereof, manually operable cocking means connected with said opening means for cocking the latter, release means operatively connected to said opening means to release the latter for operation after said opening means has been cocked, electromagnetic means coacting with said closing means to release the latter for closing said blade means upon energizing of said electromagnetic means, and photosensitive delay circuit means operatively connected with said electromagnetic means for energizing the latter in accordance with the lighting conditions, said photosensitive delay circuit means energizing said electromagnetic means in a relatively short period of time under conditions of great light intensity to provide a relatively small aperture and exposure time by way of said single blade means and said photosensitive delay circuit means energizing said electromagnetic means after a relatively long period of time under conditions of relatively low light intensity to provide a relatively large aperture and exposure time, and switch means operatively connected to said delay circuit means to close the latter for operation, said switch means being actuated by said release means for closing said delay circuit means when said release means is actuated to release said opening means for operation.

3,373,673
FILM HOLDER
Carroll C. Craig, 635 Muirfield Road, Los Angeles, Calif. 90005
Filed June 7, 1965, Ser. No. 461,618
6 Claims. (Cl. 95—66)



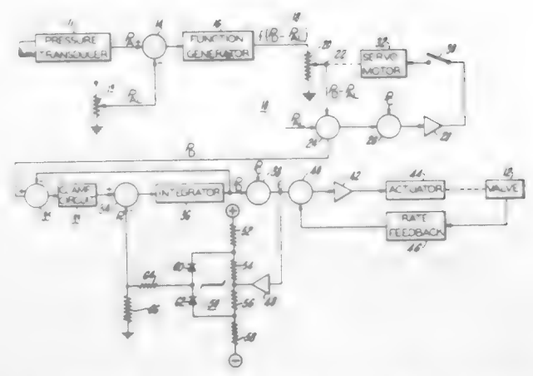
A film holder for cut film, formed with a metal septum to which are attached the plastic elements which, with the septum, make up the film holder. The plastic elements are interlocked with each other so that external blows, etc., will not cause them to separate and admit light to the light-sensitive material.

3,373,674
PHOTOGRAPHIC WASH VESSEL
Werner W. Buechner, 4407 Gladding Court, Midland, Mich. 48640
Continuation-in-part of application Ser. No. 52,524, Aug. 29, 1960. This application Feb. 3, 1964, Ser. No. 342,030
7 Claims. (Cl. 95—97)



1. An upright washing vessel for the washing treatment of photographic materials in sheet form in a flowing stream of fresh wash water, which washing vessel comprises a generally parallelepipedal receptacle formed by two major side walls, two end walls and a bottom section, said receptacle standing in operational position on its bottom section, and wherein said bottom section comprises at least one lower passageway extending essentially over the full length of the bottom section of the receptacle; an overflow passage in the top section of said receptacle at one of the major side walls and extending essentially over the whole length of said vessel; and sealing means which are adapted to permit essentially liquid tight sealing of the washing vessel in a compartment of a compartmented bath, when the wash vessel is inserted therein, so as to permit a stream of flowing wash water to flow in a predominantly vertical direction over essentially the whole horizontal cross section of the receptacle.

3,373,675
ELECTRONIC SCHEDULE GENERATOR TRACKING CIRCUIT AND RATE LIMITER
Stanley G. Best, Manchester, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 11, 1966, Ser. No. 564,226
11 Claims. (Cl. 98—1.5)

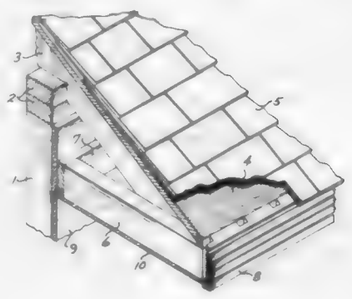


1. In a pressure regulator for an aircraft cabin wherein the flow of air through an outflow valve is modulated to pressurize the cabin throughout the ascent, cruise, and descent flight phases of the aircraft and wherein the cabin pressure regulator modulates the outflow valve by comparing a desired cabin pressure voltage with a voltage indicative of the actual cabin pressure to provide an error voltage for modulating the outflow valve in a direction to match the actual cabin pressure voltage to the desired cabin pressure voltage, the improvement comprising:

a deadband circuit coupled to the error voltage and producing a tracking voltage when the error voltage exceeds a predetermined absolute magnitude, and

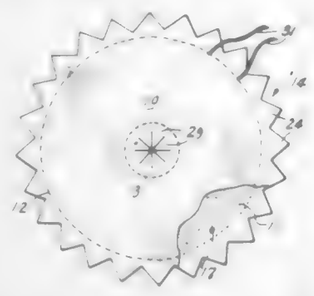
a feedback circuit responsive to the desired cabin pressure voltage and the tracking voltage for modifying the desired cabin pressure voltage in a direction to match the actual cabin pressure voltage.

3,373,676
EAVE VENTING SYSTEM UTILIZING A VENTILATED FASCIA MEMBER
Jon B. Dunnington, Mercer Island, and Douglas K. Babbit, Tacoma, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Mar. 6, 1967, Ser. No. 620,838
4 Claims. (Cl. 98—37)



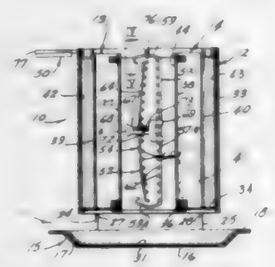
A vented eave construction utilizing a decorative fascia board having a series of protected slots cut part way through the thickness of the fascia board on one surface thereof and cutout portions on the opposite surface perpendicular to slots so that where the cutouts meet the bottoms of the slot walls, apertures result permitting air to flow through the fascia board.

3,373,677
FILTER BAGS FOR GROUND COFFEE
Anne P. Petrozzo, 8814 Colonial Road,
Brooklyn, N.Y. 11209
Filed Jan. 17, 1967, Ser. No. 609,851
3 Claims. (Cl. 99—295)



A relatively thin circular two-walled filter bag, prefilled or having an inlet for filling, having a central pierceable opening and preferably a pinked circumference. As a modification, a fillable bag having a radial tab extending from one or both walls of the inlet, of a length somewhat greater than the radius of the bag and having a second piercable opening near its end.

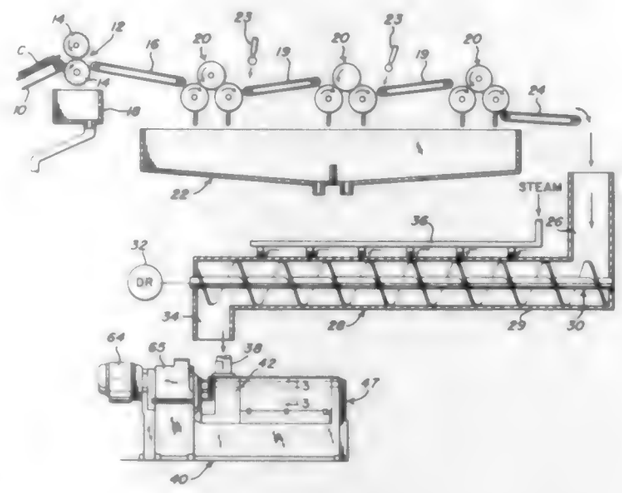
3,373,678
VERTICAL BROILER
Paul W. Miller, 827 W. South St.,
Kalamazoo, Mich. 49007
Continuation-in-part of application Ser. No. 400,639, Sept. 25, 1964. This application Jan. 3, 1966, Ser. No. 518,088
1 Claim. (Cl. 99—389)



A vertical broiler having spaced and substantially vertical charcoal beds surrounded by a sidewall and by a bottom wall having an opening between said beds. A base member supports the broiler and a receptacle which is spaced below the broiler. An upper closure member having a handle and a lower closure member supportable upon the base member are held against the broiler by connector means which extend from the top closure member to the receptacle or base member, whereby the entire assembly can be lifted by the handle.

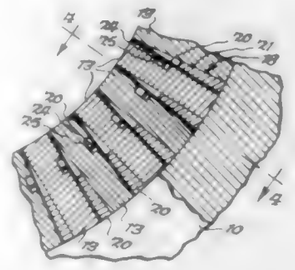
3,373,679
PROCESS FOR TREATING SUCROSE-BEARING FIBROUS MATERIALS
Alfred W. French, Piqua, Ohio, assignor to The French Oil Mill Machinery Company, Piqua, Ohio, a corporation of Ohio
Filed Sept. 27, 1965, Ser. No. 490,329
4 Claims. (Cl. 100—37)

Sugar cane material, raw cane or bagasse, is processed through a rolling mill or shredder to rupture the cells and expose the fibers, and then conveyed to a mechanical press having substantial drainage openings and capable of sustaining pressure on the material. Hot fluid such as steam is added to the material during the time it is being conveyed to increase its temperature to at least 160° F. and preferably to within a range of 180° F. to 200° F. The heated material is fed directly into



the press and liquid is expressed from the material with substantially reduced power required to drive the press.

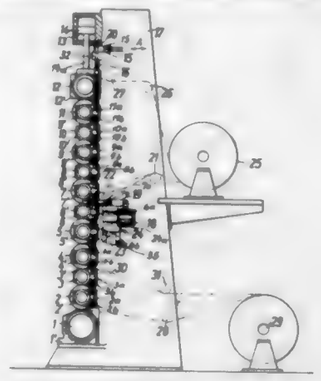
3,373,680
SPACERS FOR CAGE PRESSES
John W. Burnham, Piqua, Ohio, assignor to The French Oil Mill Machinery Company, Piqua, Ohio
Filed Jan. 27, 1966, Ser. No. 523,357
2 Claims. (Cl. 100—129)



This invention relates to improvements in spacers of the kind used between the cage or screen bars of continuous screw presses which are employed for expressing oil or other liquids from materials containing the same. These spacers are made entirely of stainless steel or other metal having high resistance to corrosion and ample strength to prevent deformation during the pressures to which they are subjected. These spacers comprise a body portion which is of uniform thickness throughout and of the thickness desired between the cage bars, and wedge-shaped pads welded to one side of the body portions of the spacers, and integral projections partly punched out of the body portions to extend into depressions formed in the screen bars.

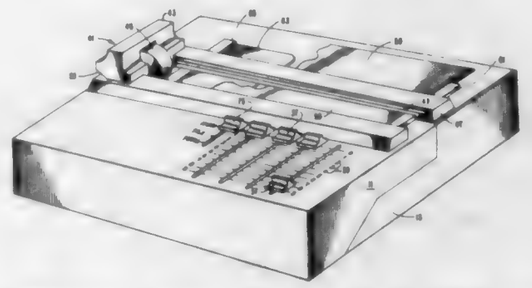
3,373,681
CALENDER
Heinz Jaegers, Duisberg-Buchholz, Germany, assignor to Joseph Eck & Sohne, Dusseldorf-Oberkassel, Germany
Filed Oct. 18, 1965, Ser. No. 497,489
Claims priority, application Germany, Oct. 16, 1964, E 27,965
9 Claims. (Cl. 100—163)

A calender having a plurality of calender rolls mounted on support means in a row adjacent each other and preferably one above each other with the axes of the rolls extending substantially parallel to each other and in such a manner that pressure applied to the uppermost roll of the row will be transmitted to the rolls beneath the uppermost



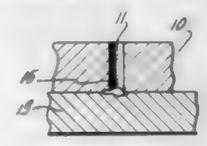
roll, and in which the calender is provided with lifting means permitting to lift the rolls, starting with the uppermost roll, successively from each other.

3,373,682
TRANSACTION RECORDER FOR PRINTING ON PRESSURE-SENSITIVE JOURNAL TAPE
Arthur M. Angel, 29 Silver Saddle Lane,
Rolling Hills Estates, Calif. 90274
Filed Jan. 17, 1966, Ser. No. 534,925
17 Claims. (Cl. 101—45)



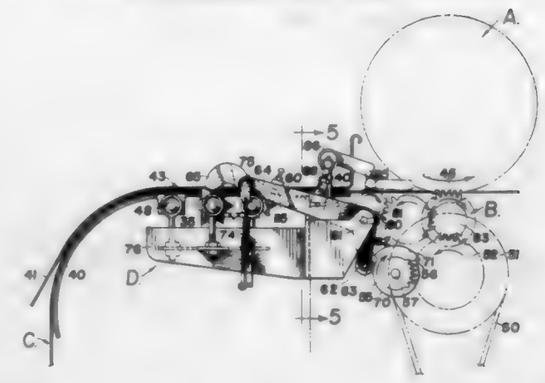
A transaction recorder is provided in which raised indicia on movably slidable print racks are selectively positioned adjacent a pressure-sensitive journal tape and one or more other superimposed record media forms are imprinted thereon by a manually movable imprint wheel. Return of the imprint wheel after imprinting advances the journal tape for the next transaction. The imprinted characters provided by the print rack indicia are in a form that is machine readable as well as being visually readable by a clerk or customer, and the imprinted tape and record media forms may be visually verified before advancement of the tape.

3,373,683
VISUAL IMAGING OF TRACK-ETCHED PATTERNS
Henry W. Alter, Danville, Calif., assignor to General Electric Company, New York, N.Y., a corporation of New York
Filed Oct. 20, 1966, Ser. No. 588,130
4 Claims. (Cl. 101—129)



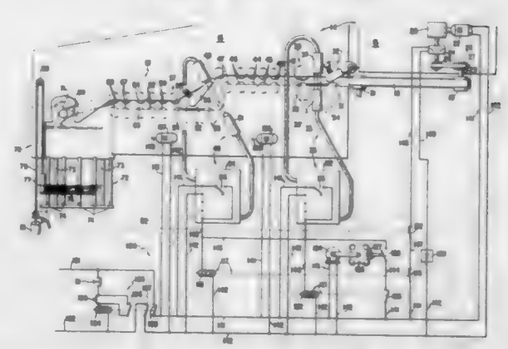
A method of making very small track-etched holes through a sheet visible to the unaided eye is described. Briefly, the track-etched sheet is placed in contact with a receptor sheet and a marking fluid is forced through the holes to produce dots on the receptor sheet which are large and intense enough to be seen.

3,373,684
APPARATUS FOR FEEDING PERFORATED WEB TO A PRINTING MACHINE
Norman G. Fisher, Rte. 3, Box 975,
Woodland, Calif. 95695
Filed Oct. 19, 1965, Ser. No. 497,700
8 Claims. (Cl. 101—228)



1. A device for feeding to a printing press, form material of the type having regularly spaced feed apertures formed in the outer margins of the form material, form material drive means mounted to sequentially engage the form material to drive said form material to the printing press, registration means engageable with the apertures of said form material to register said form at predetermined positions relative the printing press, timing means operable in timed relation with said printing press, actuating means responsive to said timing means, said actuating means connected to said feed means and to said paper registration means and operable in a first condition to actuate said form material feed means and release said form material registration means, and operable in a second condition to release said form material feed means and lock said form material registration means in a fixed position relative said printing press.

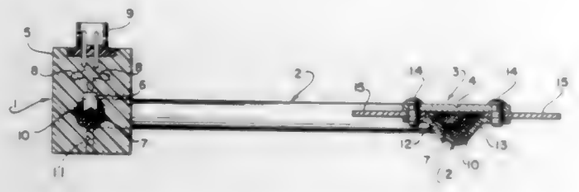
3,373,685
CONTROL MEANS IN MAIL SEPARATING CANCELLING AND STACKING MACHINES
Richard C. Adams, State College, Pa., assignor to Friden, Inc., Lewistown, Pa., a corporation of Delaware
Filed Jan. 11, 1966, Ser. No. 519,904
8 Claims. (Cl. 101—235)



A machine for handling and cancelling letter mail having a letter facing table, a belt driven conveyor operably associated with an electrically controlled clutch for feeding the letters to a unit comprising various sections for respectively reducing the mail flow from random flow to controlled flow and ultimately for reducing the letter flow to single letter flow, whereupon a cancellation mark is imprinted on each letter and the cancelled mail automati-

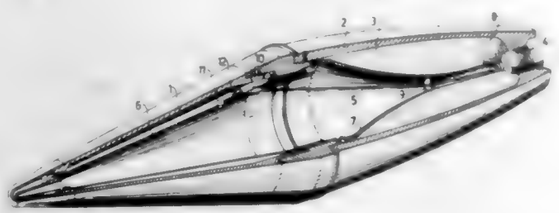
cally is stacked. An electrically controlled sensing system is operably associated with each of the flow controlling sections and with the electrically controlled clutch for interrupting, by switch means, the mail flow when a blockage of letters occurs at either of the sensing units.

3,373,686
EXPLOSIVE ACTUATOR
Jim W. Blain and Audley B. Leaman, Santa Cruz, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Mar. 1, 1965, Ser. No. 436,188
10 Claims. (Cl. 102—22)



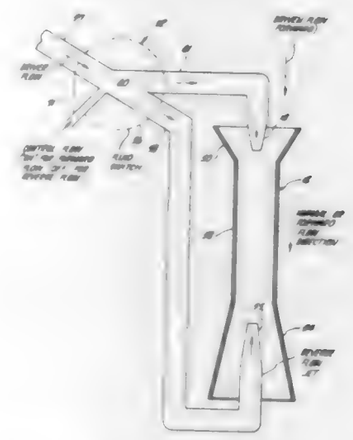
1. An explosive system comprising an explosive actuator having an explosive core and a radially expandable sheath surrounding said core, means adapted to detonate said core, and a body adjacent to said explosive actuator adapted to be acted upon and engaged by said sheath when said sheath is radially expanded by detonation of said core, said sheath remaining continuous when radially expanded.

3,373,687
WIRE MOUNTING FOR AN ELECTRIC FUZE OF A SHAPED-CHARGE PROJECTILE
Björn Herman Olof Simmons, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden
Filed Apr. 6, 1965, Ser. No. 446,006
Claims priority, application Sweden, Apr. 7, 1964, 4,260/64
6 Claims. (Cl. 102—56)



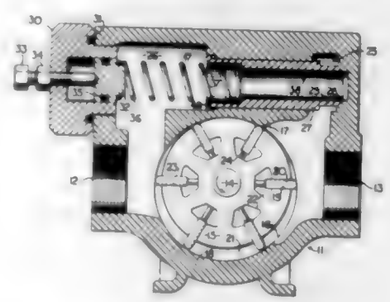
1. An explosive projectile with a shaped-charge, said projectile comprising an elongated metal shell; an elongated inner metal shell mounted within the outer shell electrically insulated therefrom and separated by a hollow space, said inner shell being disposed in a forward portion of the outer shell, the side wall of the inner shell being substantially parallel to the side wall of said outer shell portion; an electric fuze mounted in the rear end of said shell, said fuze having two external terminals, an electrically conducting connection between said terminals causing an activation of the fuze, one of said terminals being electrically and mechanically connected to said outer shell; an explosive shaped-charge in the rear portion of said outer shell, a generally conical liner mounted in said rear portion of the outer shell coaxially therewith and lining said charge to define a generally conical hollow space in said rear portion, the apex of the liner facing the fuze; and a conductor wire connecting said inner shell to the other terminal of said fuze, said wire extending tautly stretched through said generally conical space and being eccentrically disposed with respect to the center axis of the liner, metallic contact between said inner shell and said outer shell due to a deformation of at least one of the parallel side walls of the shells causing an electrically conducting connection between the terminals whereby the fuze is activated.

3,373,688
PUMPS
Charles L. Howard, San Jose, Calif., assignor to General Electric Company, New York, N.Y., a corporation of New York
Filed July 30, 1965, Ser. No. 476,108
6 Claims. (Cl. 103—3)



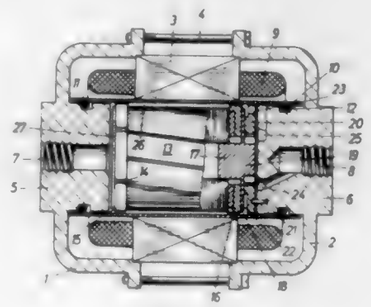
This discloses an improved jet pump capable of controllable reverse flow and in which the pump body is provided with at least one auxiliary driving fluid jet adapted to permit a controllable flow through the pump in the reverse direction from normal flow.

3,373,689
POSITIVE DISPLACEMENT PUMP
Virgil A. Brunson, Grand Rapids, Mich., assignor to Dover Corporation, Grand Rapids, Mich., a corporation of Delaware
Filed June 8, 1966, Ser. No. 556,040
10 Claims. (Cl. 103—42)



A positive displacement pump having a relief valve for bypassing liquid from the outlet side to the inlet side of the pump to limit the pressure on the outlet side, comprising a valve chamber having a cylindrical portion, a valve member having a cylindrical portion that has a sliding fit in such portion of the valve chamber so as to separate one end of the valve chamber from the other end, an open connection between one end of the valve chamber and the inlet side of the pump, an open connection between the other end of the valve chamber and the outlet side of the pump, a valve seat which is located in the end wall of such other end of the valve chamber and forms a connection between such other end of the valve chamber and the inlet side of the pump, an extension on the valve member which is of lesser transverse sectional area than said cylindrical portion of the valve member and which is engageable with the seat to close the connection between such other end of the valve chamber and the inlet side of the pump, and a spring which holds the extension against the seat in opposition to normal pump pressure acting upon the differential area and which is weak enough so that when the entire output of the pump is flowing through the valve, the unit pressure acting upon the increased area to hold the extension displaced from the seat is not substantially greater than the unit pressure which was required to start the displacement of the extension from the seat.

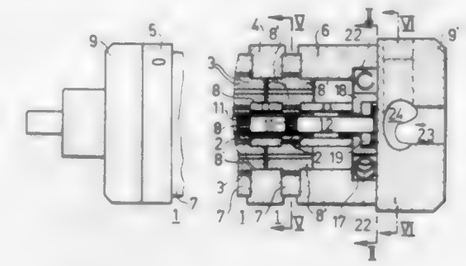
3,373,690
ELECTRICALLY DRIVEN POWER PUMP
Ladislaus Unger, Malsch, Kreis Karlsruhe, Germany, assignor to Otto Eckerle, Malsch, Kreis Karlsruhe, Germany
Filed Aug. 1, 1966, Ser. No. 569,347
Claims priority, application Germany, July 30, 1965, E 29,810
8 Claims. (Cl. 103—87)



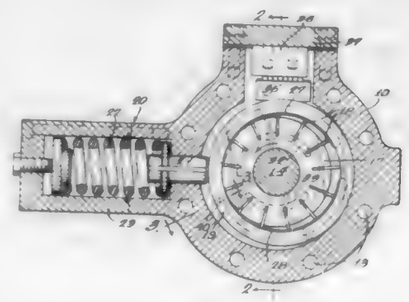
1. An electrically driven pump for liquid or gaseous fluids comprising an electric motor having a stator, a pipe positioned within the stator yoke, a rotor positioned concentrically within the pipe and axially displaceable therein, the rotor and pipe defining a fluid passageway therebetween, each end of the pipe being closed with a cap means, a positive displacement rotary pump means being positioned between one end of the rotor and the cap means respective thereto, the rotary pump means comprising a pump sealing surface mounted on the rotor for rotation therewith with a pump rotor means fixedly attached thereto, and a stationary pump element attached to the respective cap means and positioned for pumping cooperation with the pump rotor means.

3,373,691
GEARWHEEL TYPE DISTRIBUTOR PUMP
Arnold Kohler, Thalwil, Switzerland, assignor to Escher Wyss Aktiengeselischaft, Zurich, Switzerland, a corporation of Switzerland
Filed Apr. 28, 1966, Ser. No. 545,962
Claims priority, application Switzerland, June 3, 1965, 7,779/65
4 Claims. (Cl. 103—118)

1. In combination a gearwheel type distributor pump comprising at least two conveying elements for the distribution of supplied pressurized liquid to a number of liquid consumers, each conveying element consisting of at least two gearwheels arranged to engage one another; housing means for rotatably supporting and for enclosing said gearwheels; said housing means defining a common inflow chamber for the pressurized liquid being supplied to said conveying elements and individual discharge channels for the delivery of the liquid to said consumers; means for rotatationally fast interconnecting a group of said gearwheels comprising one gearwheel of each conveying element; and an automatic starting device connected to said group of gearwheels and designed to be actuated by the pressurized liquid to be supplied to said inflow chamber so as to rotate said group of gearwheels in their operational direction of rotation.



3,373,692
FLUID PUMP
Ernst F. Kleasig and Lazarus H. Dadian, Racine, Wis., assignors to Racine Hydraulics & Machinery, Inc., a corporation of Wisconsin
Filed Dec. 9, 1965, Ser. No. 512,625
4 Claims. (Cl. 103—120)

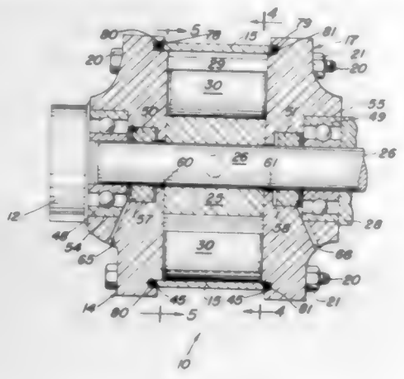


A variable volume hydraulic vane-type pump having a passage with an inlet connected to the space between adjacent pump vanes at a location blocked from the pressure zone of the pump and in advance of the suction port to release decompressed fluid from the space in advance of the suction port and avoid aeration of fluid in the inlet zone of the pump.

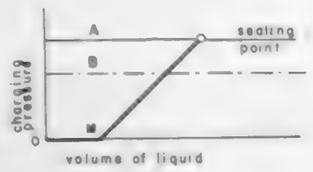
3,373,693
PUMPS
Gordon D. McKittrick, La Grange Park, Ill., assignor to Tractor Supply Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 500,926
6 Claims. (Cl. 103—136)

A rotary roller pump in which the main portion of the housing encompassing the roller impeller is a simple sleeve of right circular cross-sectional configuration and uniform inside and outside diameters. The end bells or covers of the pump are each formed with a flat planar internal surface and are each provided with an annular groove of right circular configuration in which a resilient O-ring or other sealing gasket is disposed. The sleeve constituting the central portion of the pump housing is clamped between the two end cover members with its end surfaces in engagement with the O-rings to afford a fluid-tight seal at each end of the pump housing. The

impeller of the pump is journalled in the end cover members, being eccentrically mounted with respect to the sleeve, the impeller including six or more radially movable impeller rollers that are approximately equal in length to the length of the casing member between the planar surfaces of the end cover members. The inlet and outlet ports are formed in the end cover members so that there are no apertures, passageways, or other deformations in the central sleeve member of the pump housing and the length of the pumping chamber can be increased simply by using a longer sleeve with an appropriately dimensioned impeller. Capacity of the pump can also be increased by mounting additional sections in end-to-end relation, again using simple sleeves of right circular cross-sectional configuration and uniform inside and outside diameters as the principal central elements in the pump housings.



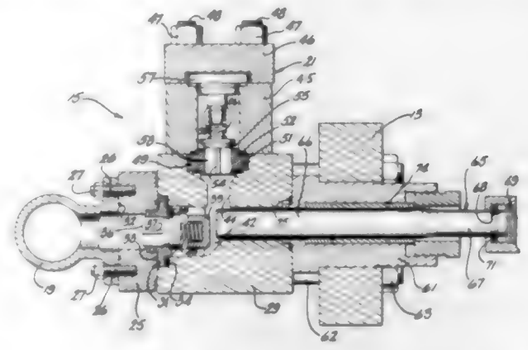
3,373,694
CYLINDER AND PISTON UNIT HAVING NON-COLLAPSIBLE DUAL ROLLING DIAPHRAGM
John F. Taplin, 15 Sewall St., West Newton, Mass. 02165
Filed Oct. 21, 1965, Ser. No. 499,570
12 Claims. (Cl. 103—150)



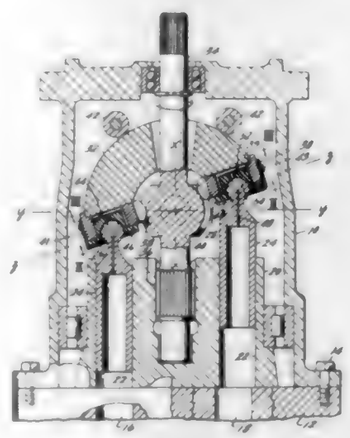
Disclosed below is a long-stroke-type reciprocating piston pump including rolling diaphragm means, i.e. diaphragm means having a rolling wall which rolls off the piston onto the cylinder when the piston is moved in one direction, and which rolls off the cylinder onto the piston when the latter is moved in the opposite direction. Such piston pumps are subject to pressure reversal and consequent collapse of the rolling diaphragm, tending to damage the latter. The piston pump disclosed below includes effective means precluding pressure reversal and collapse of the rolling diaphragm.

3,373,695
RECIPROCATING PISTON PUMP
Reinhard A. Yohpe, Battle Creek, Mich., assignor to Union Pump Company, Battle Creek, Mich., a corporation of Michigan
Filed Apr. 28, 1966, Ser. No. 545,914
8 Claims. (Cl. 103—153)

This reciprocating piston pump assembly was devised to overcome certain shortcomings of prior high pressure piston pumps resulting in lowered volumetric efficiency and fractures. This is taken care of by reducing the volume of the cylinder chamber between the inlet and outlet ports, by obviating the placing of the inlet port in the side of the cylinder block, and by making the outlet port smaller, in fact smaller than the head of the outlet valve, among other things. Also by placing the inlet port and inlet valve at the end of the piston cylinder, so as to extend into the cylinder chamber to help reduce its volume, with said inlet valve assembly removable in manner permitting removing the piston through the inlet valve assembly opening, for sterilization or other treatment, after releasing the piston from the operating mechanism.

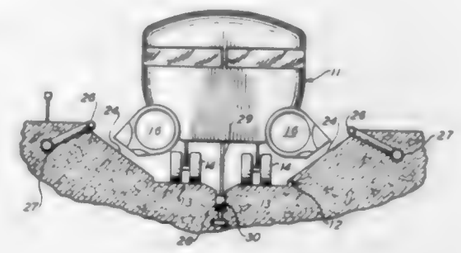


3,373,696
FLUID TRANSMISSION DEVICES
Howard Marion Geyer, Dayton, Ohio, assignor to General Electric Company, a corporation of New York
Filed May 12, 1965, Ser. No. 455,246
6 Claims. (Cl. 103—162)



1. A pump or the like comprising,
a pump body and a cam plate which are relatively rotatable,
said pump body having a plurality of circularly arranged chambers generally parallel to the axis of relative rotation,
said cam plate having a bearing surface facing said pump body and angled from a plane normal to the axis of relative rotation,
pistons respectively reciprocable in said chambers and projecting from one end thereof towards said cam plate,
said pistons having spherical ball ends,
caps having sockets respectively receiving said ball ends,
said caps further having flanges disposed in a common plane, which plane is coincident with the centers about which the ball ends are generated,
a wobble plate having opposed surfaces, one of which bears against the angled surface of the cam plate and the other of which is relieved to receive the portions of said caps outwardly of said common plane,
the other of the surfaces of said wobble plate providing a bearing surface engaged by the cap flanges on said common plane, and
means preventing relative angular movement between said wobble plate and said piston body about said axis of relative rotation whereby the plate is nutated relative to said piston body, during said relative rotation, as the pistons are reciprocated in said chambers, and thrust forces are transmitted between the pistons and cam plate with no tendency to tip the caps relative to said wobble plate.

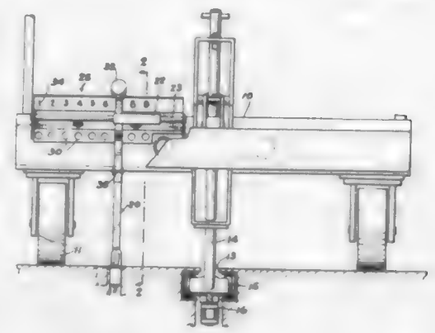
3,373,697
TRANSPORTATION SYSTEM
Robert A. Hartje, 341 Norwood Ave., South Plainfield, N.J. 07080
Filed Mar. 31, 1966, Ser. No. 538,998
6 Claims. (Cl. 104—23)



1. A transportation system comprising:
(a) a track;
(b) a generally horizontal wheel-bearing surface on the track;
(c) a guide-slot in the track;
(d) a pair of shoe-bearing surfaces on the track extending upwardly and outwardly from opposite edges of the wheel-bearing surfaces;
(e) a vehicle;
(f) retractable wheels on the vehicle engageable and disengageable with the wheel-bearing surface of the track;
(g) a guide on the vehicle extending into the slot;
(h) a plurality of shoes attached to the vehicle at opposite sides thereof and positioned for engagement with the shoe-bearing surfaces when the wheels are retracted from the wheel-bearing surfaces;
(i) passages in the shoes communicating with each successive shoe;
(j) means for raising the temperature of the shoes at the point of engagement with the shoe-bearing surfaces sufficiently high to turn water on those surfaces to steam;
(k) means to supply water to the shoe-bearing surfaces.

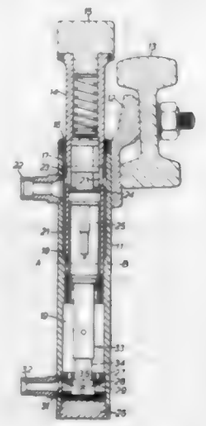
3,373,698
SIGNAL SETTING MECHANISM FOR TOW TRUCK CONVEYOR SYSTEMS
Leonard J. Bishop, Birmingham, Mich., assignor to Mechanical Handling Systems, Inc., Warren, Mich., a corporation of Michigan
Filed Apr. 5, 1966, Ser. No. 540,285
15 Claims. (Cl. 104—88)

1. For use in a tow truck conveyor system wherein a plurality of trucks are adapted to be moved along a track by engagement of means on the truck with a conveyor chain beneath the floor,
a signal setting mechanism comprising a probe,
means for mounting the probe in the front of the tow truck for movement transversely of the truck and for pivotal movement about an axis extending transversely of the truck,



and locating means for locating said probe transversely of the truck comprising a projection on one of said probe and said truck and an opening on the other of said probe and said truck,
said projection adapted to engage said opening,
said projection and said opening being spaced from the pivotal axis of said probe.

3,373,699
HYDRAULIC DEVICES FOR CONTROLLING THE SPEED OF WHEELED VEHICLES
David E. Bick and Colin R. Little, Cheltenham, England, assignors to Dowty Mining Equipment Limited, Ashchurch, Tewkesbury, England, a British company
Filed July 25, 1966, Ser. No. 567,535
Claims priority, application Great Britain, July 30, 1965, 32,685/65
7 Claims. (Cl. 104—162)



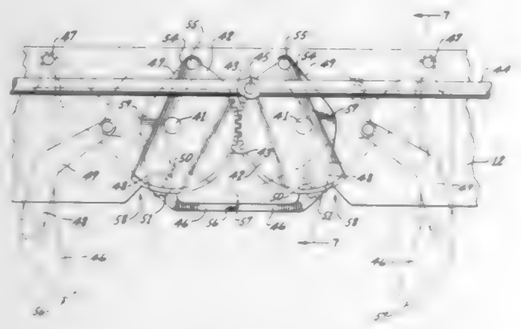
1. A telescopic hydraulic device for use on a railway track to influence the speed of railway vehicles by acting against the peripheries of vehicle wheels, comprising a cylinder member and a piston member together defining a variable volume chamber, a pressure-operated valve carried by one of said members and interposed between said chamber and a connector for an external source of low fluid pressure, the pressure-operated valve including bias means acting to open the valve at low fluid pressures within the chamber but yielding to close the valve when the fluid pressure across the valve from the chamber exceeds a predetermined value, a mechanically-operated valve carried by the other of said members and interposed between said chamber and a connector for an external

source of low fluid pressure, a telescopic hydraulic tappet carried by said one member and including a lock valve which is co-operable with the pressure-operated valve whereby the lock valve is closed when the pressure-operated valve is open, and whereby the lock valve is open when the pressure-operated valve is closed, the hydraulic tappet being operable during ultimate contraction movement of the piston and cylinder members, when the lock valve is closed so that the hydraulic tappet is maintained extended by fluid entrapped therein, to open the mechanically-operated valve, but being collapsible during such ultimate contraction movement, when the lock valve is open, whereby the mechanically-operated valve is not opened, supplementary valve means openable under high fluid pressure in the chamber to discharge fluid during contraction of the piston and cylinder members, and co-operable stop means formed on said one member and the mechanically-operated valve, said stop means being operable during ultimate extension movement of the piston and cylinder members to close the mechanically-operated valve if said valve was previously open.

3,373,700
RAILWAY CAR DOOR OPERATING MECHANISM

Ernst J. De Ridder, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Apr. 29, 1964, Ser. No. 363,452
5 Claims. (Cl. 105—240)

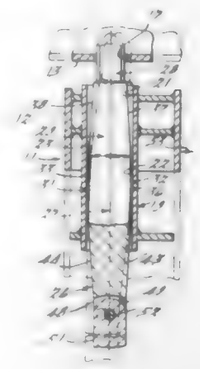


1. In a railroad car or the like, the combination comprising:
   (a) a railroad car having a bottom and opposed sides,
   (b) a pair of doors pivotally mounted for oscillation longitudinally of said car in order to close an opening in said bottom,
   (c) a pair of parallel shafts respectively mounted on each of the opposed sides of said car and extending laterally thereof with the axes of pairs of shafts in alignment and parallel to each other,
   (d) a pair of intermeshing gear segments, each segment mounted on a shaft of a pair of said shafts and rotatable therewith,
   (e) a plurality of link means each pivotally connected at one end to one of said gear segments and at the other end to a respective door,
   (f) and reversible power means connected to at least one of said gear segments and movable longitudinally of said car whereby upon actuation of said reversible power means said pairs of intermeshing gear segments are rotated thereby imparting pivotal motion to said pair of doors through said link means whereby said doors may be opened and closed,
   (g) said link means engaging an associated shaft in an overcenter position relative to the axis of said shaft when said doors are closed to provide a stop for said doors.

3,373,701
LATCH STRUCTURE FOR FREIGHT-BRACING APPARATUS

Jackson A. Shook, Northville, Mich., assignor to Evans Products Company, a corporation of Delaware

Filed Jan. 3, 1966, Ser. No. 518,204
15 Claims. (Cl. 105—376)

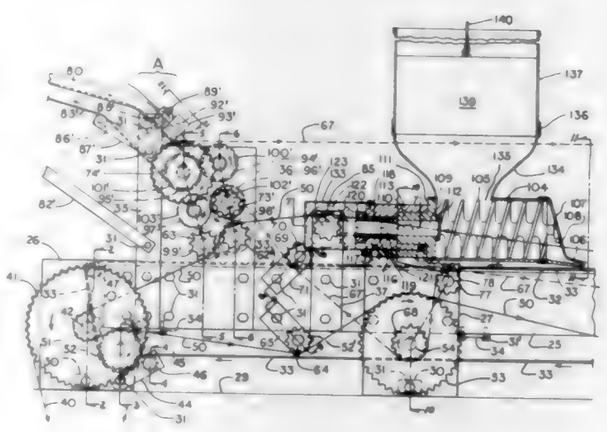


A freight-bracing bulkhead assembly embodying a latch structure for resisting galling under the influence of force loading comprised of a latch member and a supporting member. The supporting member supports the latch member for reciprocation along a nominal axis between latched and unlatched positions. The latch member has a latch part adapted to engage a cooperating latch member in its latched position and a shank portion. The supporting member defines a socket portion for guidingly engaging the shank portion of the latch member with sufficient clearance for tilting movement of the shank portion from the normal axis. The shank and socket portions have first surfaces at one end of one of the portions that are non-parallel in the normal position and in parallel abutting relation in the displaced position to increase the contact area between the portions upon tilting movement under the influence of force loading.

3,373,702
MACHINE FOR MAKING RAVIOLI

Gino R. Quilici, 1135 NE. 80th Ave., Portland, Oreg. 97213, and Charles V. Quilici, 4131 SE. Glenwood, Portland, Oreg. 97202

Filed Oct. 14, 1965, Ser. No. 495,818
12 Claims. (Cl. 107—1)

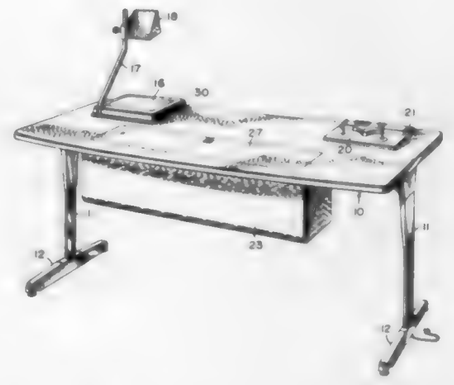


The machine comprises a long flat table, an endless, driven carrier belt having its upper lap supported and movable lengthwise along the table, pairs of rollers positioned to feed a lower sheet of dough onto the belt, filler supply means positioned to spread filler on the lower dough sheet, other pairs of dough feeding rollers positioned to lay an upper flat sheet of dough on the filler, means to sprinkle flour on the upper dough sheet, a die cylinder under which the dough sheets and filler pass and are pressed into squares and edge sealed, and a conveyor to carry away the product.

3,373,703
TEACHER DEMONSTRATION CONSOLE

Chester J. Barecki, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of Delaware

Filed Sept. 28, 1966, Ser. No. 581,625
6 Claims. (Cl. 108—50)



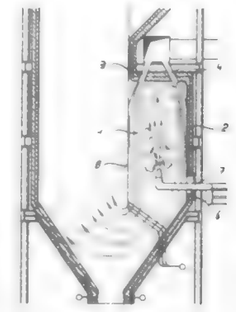
A slide projector cabinet is slidably mounted in an opening in the top of a table, the projector being provided with a transparency slide-receiving plate and carrying also a mast which extends above the cabinet and is provided at its top with a projector lens for directing the image from the slide projector rearwardly onto a screen or image-receiving surface. The cabinet is slidably mounted in the table opening and is provided with cooperating means for supporting it with the cabinet body extending below the table so that the lecturer can use the cabinet while sitting and alternatively in an elevated position with the main body of the cabinet above the table, and with the mast and lens also elevated proportionately so that the lecturer may use the elevated projector while standing. Latches are provided for automatically supporting the cabinet when it is raised to elevated position, and holding it upon the table when it is lowered.

3,373,704
METHOD OF AND FURNACE FOR BURNING FINE GRANULAR SUBSTANCES IN MOIST CONDITION

Richard Jung, Gummersbach, Germany, assignor to L. & C. Steinmuller G.m.b.H., Gummersbach, Germany

Filed May 9, 1966, Ser. No. 548,487
Claims priority, application Germany, May 15, 1965, St 23,827
6 Claims. (Cl. 110—7)

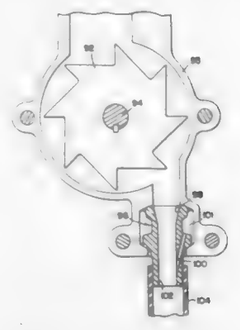
A method of and furnace for burning fine granular substances in moist condition characterized primarily in that combustion air is at an acute angle directed toward at least one of the respective adjacent front or rear walls in downward direction along said wall or walls, while a locally defined back and upward flow area of the combustion flow is created, and at least the by far major portion of the wet fine granular substance to be injected is, in the form of jets, in upward direction injected into the lower end of the back and upward flow area of the combustion air flow.



3,373,705
PLANTER

Harold V. Hansen, Cordova, and Virgil R. McCumber, Moline, Ill., assignors to Deere & Company, Moline, Ill. a corporation of Delaware

Continuation-in-part of application Ser. No. 236,606, Nov. 9, 1962. This application Apr. 30, 1965, Ser. No. 452,328
14 Claims. (Cl. 111—73)



1. A planter comprising a wheeled frame, a seed hopper mounted on the frame, said hopper having a plurality of seed selecting means, a plurality of furrow openers mounted on the frame, means interconnecting the seed selecting means with the furrow openers, said means including a plurality of impelling tubes, each of said tubes including a first portion that receives the seed from the associated seed selecting means and a second portion that discharges the seed, means leading away from the second portion of each impelling tube to the associated opener, each impelling tube being provided with passages in its walls, said passages being directed inwardly towards the second portion, and a surge chamber connected to a source of fluid pressure, said impelling tubes being carried by the surge chamber with said passages being in communication with said surge chamber.

3,373,706
STITCH FORMATION

George B. Armstead, Jr., Glastonbury, Conn., assignor to The Merrow Machine Company, Hartford, Conn., a corporation of Connecticut

Filed Apr. 12, 1965, Ser. No. 447,158
12 Claims. (Cl. 112—162)

A chain stitch seam is formed by forming a first sequence of stitches along a line, and simultaneously forming a second sequence of stitches in overlaying relation with, and along the same line as, the first sequence of

stitches. The stitches of the second sequence are positioned between the stitches of the first sequence along the length of the seam to give the seam the appearance, cover-

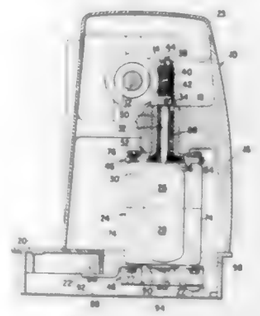
age, and strength of a seam formed from a single sequence of stitches each of a length one-half the length of the individual stitches of the seam of this invention.

3,373,707
LOOP TAKER FOR SEWING MACHINES
Stanley J. Ketterer, Morris Plains, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 7, 1966, Ser. No. 540,932
6 Claims. (Cl. 112—184)

A rotating loop taker for a lock stitch sewing machine is disclosed in which the loop taker body is formed with a flat planar bearing surface on which the bobbin case bearing flange rests. A bracket carried on the machine frame supports three bobbin case locating means each engaging the bobbin case flange and providing for constraint of the bobbin case radially, angularly and axially of the loop taker body.

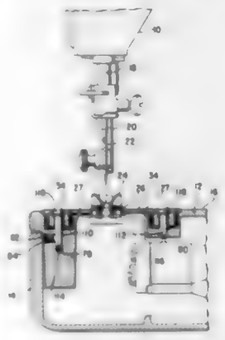
3,373,708
DRIVE MOTOR MOUNTING ARRANGEMENT
Jin Takahashi, Kaminokawa, Tochigi-ken, Japan, assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 17, 1966, Ser. No. 573,027
Claims priority, application Japan, Sept. 1, 1965, 40/71,283
3 Claims. (Cl. 112—220)

1. In a sewing machine having a frame, an electric drive motor including a housing mounted within said frame, a drive shaft journaled in said frame, a gear secured to said drive shaft, said motor including a spindle and a worm secured to the free end segment of the spindle, said worm being adapted to mesh with the drive shaft gear, means for adjustably mounting the motor on said frame, said means including a pair of bolts extending through the housing of said motor, a first bracket and a second bracket, means for utilizing said bolts releasably to clamp said first bracket to one end of



said motor and said second bracket to the opposite end of the motor, means for securing said first bracket to said sewing machine frame, said means for connecting said brackets to said motor including apertures formed in said brackets and adapted to receive said bolts, said apertures being enlarged to allow lateral movement of the bolts within the apertures thereby to allow lateral movement of the motor and attached worm which provides for adjustment of said worm relatively to said drive shaft gear.

3,373,709
SEWING MACHINE THROAT PLATE LOCATING AND SECURING MEANS
Jacob D. Gubbay, Dover, and Robert H. Stricker, Basking Ridge, N.J., and Hilmar Wittler, Karlsruhe-Hagsfeld, Germany, assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 23, 1965, Ser. No. 515,919
3 Claims. (Cl. 112—260)

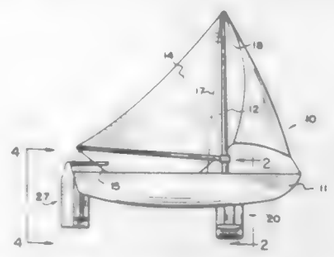


A device mounted in a cavity in the bed of a sewing machine for releasably securing a throat plate to the bed above the cavity. The device includes a ring-like magnet mounted in a [illegible] loosely mounted on a stud secured within the cavity beneath the throat plate, which throat plate is attracted to the magnet and thereby held in place on the bed.

3,373,710
HYDROFOIL BOAT
Amiram Steinberg, Ann Arbor, Mich.
(8 Vitkin St., Tel Aviv, Israel)
Filed June 1, 1966, Ser. No. 554,372
5 Claims. (Cl. 114—39)

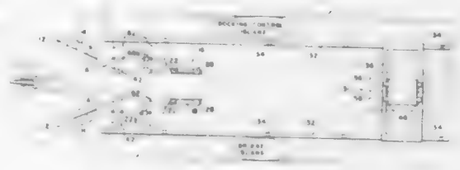
The hydrofoils of a hydrofoil-equipped sailboat are provided with a pair of ailerons which are linkage-controlled directly from the mast shrouds. Wind forces act-

ing upon the mainsail induce a tension in the windward shroud, which tension acts through a linkage to cause



the windward aileron to produce a negative lift and the leeward foil to produce greater positive lift, thus stabilizing the boat.

3,373,711
HANDLING SYSTEM FOR SEAPLANE ENGINES
John Bader, 2511 Woodley Road NW., Washington, D.C. 20008
Filed Dec. 29, 1958, Ser. No. 783,626
14 Claims. (Cl. 114—43.5)



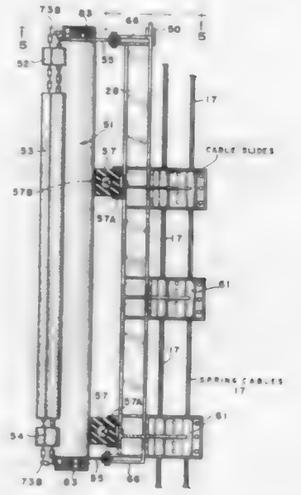
1. In a handling system for seaplane engines, a tender ship having a top deck, a hold, and a hatchway formed in the deck for communication between the deck and hold means for docking a seaplane on the deck, and means for removing an engine from the seaplane and depositing such engine in the hold, said last named means comprising a traveling bridge crane having centering means thereon, elevated guide rails for movably supporting the crane on the deck above the seaplane for movement between the seaplane and the hatchway, centering means on the hatchway cooperating with the means on the crane for centering the crane above the hatchway, means on the seaplane cooperating with the said means on the crane for centering the crane above the seaplane, and a hoist on the crane for raising an engine from the seaplane, transporting said engine upon movement of the crane to a position above the hatchway and for lowering said engine through the hatchway into the hold.

3,373,712
ANCHOR HAVING PIVOTABLE FLUKES
Edward H. G. Stokes, Droxford, Southampton, England, assignor to Armstrong Whitworth (Marine) Limited, Droxford, Southampton, England
Filed Apr. 6, 1966, Ser. No. 540,666
Claims priority, application Great Britain, Apr. 13, 1965, 15,670/65
5 Claims. (Cl. 114—208)

A stockless marine anchor of the kind comprising a crown, a shank pivotally mounted in the crown for limited pivotal movement about a transverse axis, two flukes formed integrally with said crown and projecting forwardly therefrom one on each side of said shank, said flukes comprising generally co-planar blades each having two mutually opposed sea-bed engaging surfaces, said blades being pointed in plan view at their forward ends and widening out towards a portion of maximum width adjacent the crown. The two sea-bed engaging surfaces on each side of the anchor are inclined one with the other

as viewed in lateral cross section to provide a dihedral angle between said surfaces to stabilize the anchor.

3,373,713
APPARATUS FOR USE WITH OFFSHORE MARINE STRUCTURES
Robert G. Hindman and John J. Bardgette, New Orleans, La., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Mar. 15, 1965, Ser. No. 439,688
8 Claims. (Cl. 114—220)

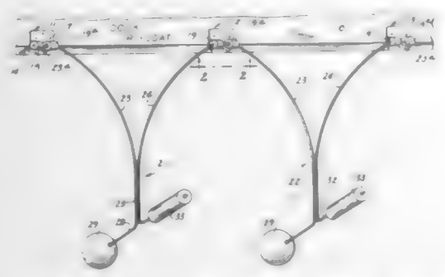


Apparatus for fending off vessels from a marine structure uses a sheath of rubberlike material fixed to a cylindrical base member by pins on the base member and L-shaped slots in the sheath. The structure may include elongated cylindrical members suspended around the sheathed member in spaced relationship therewith.

3,373,714
SMALL BOAT RESTRAINERS
Sterling Lenn Hart, 30 Windsor Terrace, White Plains, N.Y. 10601
Continuation of application Ser. No. 519,603, Jan. 10, 1966. This application Feb. 15, 1967, Ser. No. 616,389
6 Claims. (Cl. 114—230)

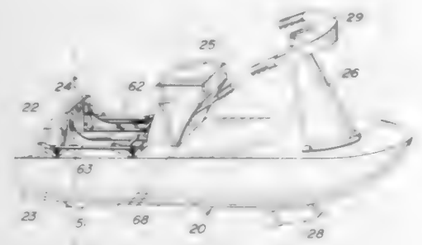
Means for restraining small boats tied to a dock from sidewise movement in the form, for each boat, of two opposed curved arms which together define a bow-shaped

enclosure in which the bow of the boat is confined, each such two arms constituting one arm of two mutually adjacent wishbone-shaped members pivoted at one end to the dock and having at their outer or common end a down-



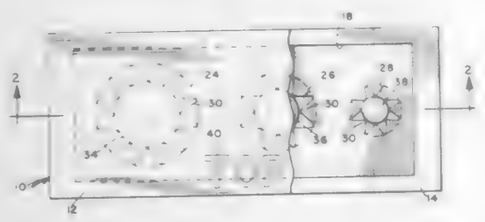
wardly extending float to float the member and upwardly extending fender means to engage the side of the boat.

3,373,715
POWERED TRIMARAN WITH RETRACTABLE PONTOONS
Cecil Edward Stacey, Grand Rapids, Mich. (9554 Myers Lake Road, Rockford, Mich. 49341)
Filed May 4, 1966, Ser. No. 547,482
3 Claims. (Cl. 115—70)



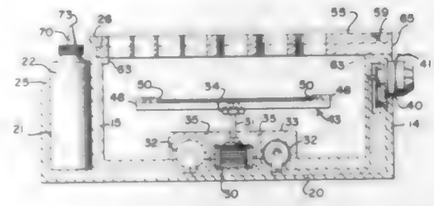
A boat having oppositely disposed hull extensions which are moved outwardly to increase the stability of the boat.

3,373,716
SHOCK INDICATING DEVICE
Eugene R. Williams, 4321 Niagara, San Diego, Calif. 92107
Filed Dec. 29, 1965, Ser. No. 517,323
5 Claims. (Cl. 116—114)



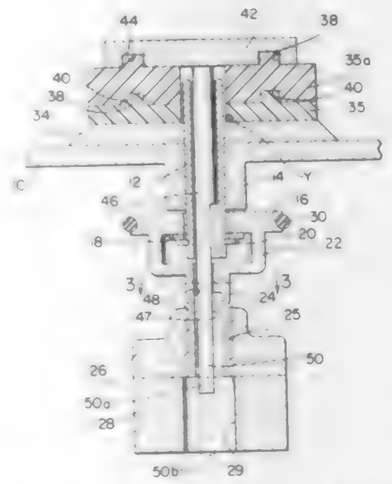
Shock indicating means for use with easily damaged apparatus comprising an inertial body ordinarily spherical, supported in a cavity of a block of material, on fingers extending from all sides of the cavity, a shock causing the inertial body to crush and permanently compress certain of the fingers which can later be inspected and measured to determine the degree and direction of the shock. Multiple units with inertial bodies of different weights, used with a single item of damageable apparatus, can be employed to respond to different intensities of shock, and the fingers can be differently configured for varying the sensitivity.

3,373,717
SPLASH PAINTING DECORATING DEVICE
Richard Morales, 367 Rutherford Ave., Redwood City, Calif. 94061
Filed Mar. 12, 1965, Ser. No. 439,219
6 Claims. (Cl. 118—6)



A splash painting decorating toy of the type having a rapidly-rotating table which receives the card is provided with a cover closure arranged to actuate a switch. When the cover is opened the switch is opened to stop the motor and hence reduce possibility of injury to the operator. The cover is apertured so that paints may be squeezed from plastic bottles to splash onto the rotating card to produce unusual and varying color patterns on the card.

3,373,718
CONSTANT PRESSURE, SOLID WAX-APPLICATOR
Charles W. Brouwer, East Greenwich, and Raymond V. Tata, Warwick, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Jan. 9, 1967, Ser. No. 608,160
3 Claims. (Cl. 118—78)

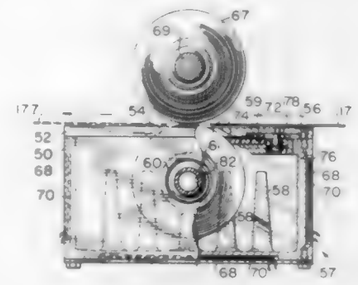


An improved yarn waxing device is disclosed which is operable to maintain a predetermined pressure on a strand during waxing thereof.

3,373,719
HOT MELT GLUE APPLICATOR
Lyman B. Furry, Danville, Ill., assignor to Montgomery Machine Service Inc., Danville, Ill., a corporation of Illinois
Filed Mar. 26, 1965, Ser. No. 442,948
2 Claims. (Cl. 118—202)

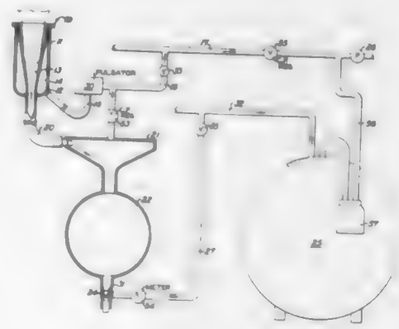
An improved hot melt glue applying apparatus capable of high speed operation without waste comprises one or more heated reservoirs for a hot melt glue and electrically heated knurled glue applicator wheels (with recessed knurling) rotating within the reservoirs. The reservoirs and glue applying wheels are both heated to maintain the glue in a fluid condition up to the point of application to the box or carton being processed. The reservoirs are

provided with a suitable arrangement of baffles and ribs to prevent the molten glue from splashing out during high speed operation. The apparatus preferably includes a storage hopper for cartons or boxes being processed



and continuous feed belts or other feed means for high speed movement of boxes or cartons through the apparatus. The hopper, feed mechanism, and glue applying means are adjustable to handle boxes or cartons of varying size.

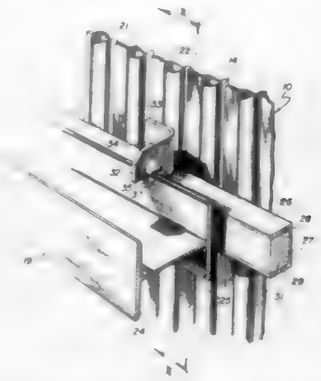
3,373,720
MILKING UNIT AND PROCESS
Lloyd P. Duncan, Washington, Mo., assignor to Zero Manufacturing Company, Washington, Mo., a company of Missouri
Filed Sept. 22, 1964, Ser. No. 398,192
27 Claims. (Cl. 119—14.02)



17. A method of deaerating and conveying milk from a milk-producing farm animal to a vacuum tank which comprises the steps of withdrawing milk from a farm animal directly into a claw, continually taking any gaseous fluid received with said milk in said claw by subjecting it to partial pressure substantially less than atmospheric pressure, continually draining said milk from said claw by gravity into a milk receiving pail, conveying milk from said milk receiving pail through a conduit to said vacuum tank by maintaining therein a partial pressure substantially less than said first mentioned partial pressure, and stopping said conveying of milk by closing said conduit whenever said milk receiving pail is substantially empty.

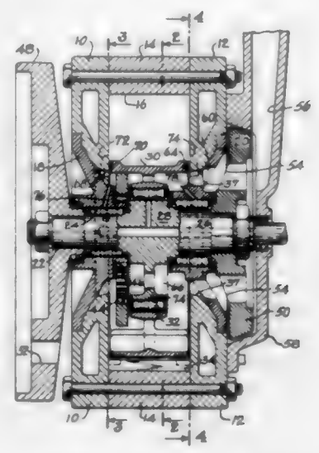
3,373,721
STEAM GENERATING UNIT
Ramsey U. Sheikh, Westboro, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 10, 1966, Ser. No. 533,570
4 Claims. (Cl. 122—6)

This invention relates to a steam generating unit and, more particularly, to buckstay apparatus arranged to protect against excessive deflection of the outer walls due to internal gas pressure and against puffs and explosion of



combustible gases in the combustion chamber, while permitting normal thermal expansion and contraction.

3,373,722
COOLING SYSTEM FOR THE ROTOR OF A ROTARY INTERNAL COMBUSTION ENGINE
Hans-Georg Zimmermann, Heilbronn, and Ulrich Schaller, Neckarsulm, Germany, assignors to NSU Motorenwerke Aktiengesellschaft, Neckarsulm, and Wankel G.m.b.H., Lindau (Bodensee), Germany
Filed Aug. 29, 1966, Ser. No. 575,584
Claims priority, application Germany, Sept. 17, 1965, N 27,355
4 Claims. (Cl. 123—8)



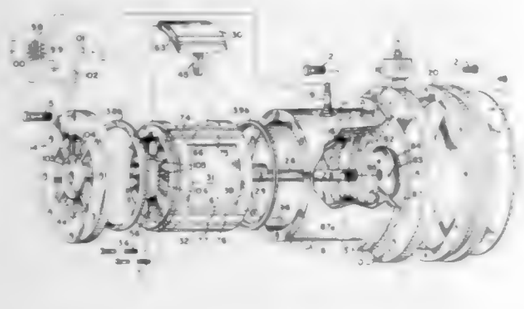
1. A rotary internal combustion engine comprising spaced-apart side walls and a peripheral wall interconnecting the side walls to form a hollow outer body, a rotatable shaft journaled in the side walls and having an eccentric portion disposed within said outer body, and a rotor disposed within the outer body and having a plurality of portions sweeping the inner surface of the peripheral wall in sealing relation therewith, the rotor being mounted on the eccentric for rotation relative to the outer body and to the eccentric, said rotor having an internal cavity for the flow of a working fluid through the rotor, the cavity being open toward each of the side walls, one side wall having a passage for supplying the working fluid therethrough to the rotor cavity, such passage being located in that portion of said one side wall which is at all rotor positions radially inward of the outer periphery of the rotor, said one side wall also including a flow-over passage for connecting the working fluid supply passage with working chambers of the engine formed between the rotor and inner surface of the outer body, the other side wall also including a flow-

over passage for connecting the rotor cavity with said working chambers, the opening and closing of both flow-over passages being controlled by the outer contour of the rotor and said flow-over passages being so situated and formed that motion of the rotor during operation of the mechanism results in the flow-over passage in said other side wall being opened to each working chamber before the flow-over passage in the side wall containing the working fluid supply passage is opened to said chamber such that working fluid first enters each working chamber by way of the rotor cavity and flow-over passage in the said other side wall, and thereafter enters the chamber by way of the flow-over passage in the side wall containing the working fluid supply passage without flowing through the rotor cavity.

3,373,723
INTERNAL COMBUSTION ENGINE

Donald N. Blosser, 1328 Petal Way, San Jose, Calif. 95129

Filed Aug. 1, 1966, Ser. No. 569,203
6 Claims. (Cl. 123—17)



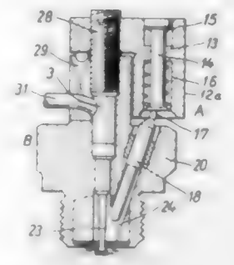
An internal combustion engine provided with a plurality of swinging pistons mounted on pivots in a rotatable piston carrier which has a hollow air passage therethrough for receiving air at one end and means to compress it at the other end. A fixed shaft attached to the end plates of the engine housing provided with an eccentric fixedly attached thereto. A hollow member is mounted on the eccentric, said hollow member being attached to the piston rods. A hollow power takeoff shaft rotatably supported on the fixed shaft and fixedly connected to the piston. Fuel is fed to the aforesaid other end of the hollow air passage to be mixed with the compressed air. The compressed air and fuel are supplied to a fuel feeding passage connected to the inner end of the aforesaid hollow air passage to feed fuel to the cylinders in predetermined sequence as the piston carrier is rotated.

3,373,724
FUEL INJECTION AND IGNITION DEVICE FOR INTERNAL COMBUSTION ENGINES

Hermann Papst, St. Georgen, Black Forest, Germany

Filed Feb. 8, 1965, Ser. No. 430,844
Claims priority, application Germany, Feb. 10, 1964, P 33,560
23 Claims. (Cl. 123—32)

1. A unitary fuel injection and ignition device for an internal combustion engine comprising, in combination, a body of thermally insulating material and formed with a first bore of uniform diameter therethrough forming a chamber of small volume and communicating at one end of said first bore with the combustion chamber of the engine; a pin-shaped electrically heatable igniter element located with small clearance in a second bore formed in said body inclined to and intersecting said first bore in such a manner that the tip of said element is located at the intersection of said second and said first bore substantially aligned with the surface of the latter; nozzle means communicating with the other end of said first bore for intermittently injecting fuel thereinto; elongated guide means coaxially arranged with said nozzle means projecting therefrom past said tip to said igniter element at least to said one end of said bore for guiding a jet of fuel injected by the nozzle means closely spaced from

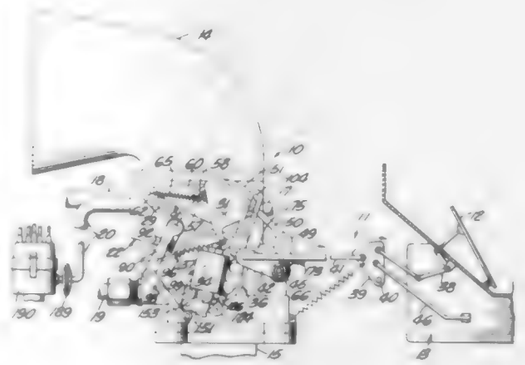


the inner surface of said first bore through the latter into the combustion chamber of the engine so that only scattered droplets of said fuel will reach a hot layer of air surrounding said tip of said igniter element to be instantaneously ignited thereby; and means for supplying electric current to said igniter element for heating the latter.

3,373,725
FUEL SUPPLY SYSTEM, CARBURETOR AND METHOD

Michael A. Arpaia, 16530 Chatsworth, Granada Hills, Calif. 91344

Filed Sept. 3, 1965, Ser. No. 484,959
32 Claims. (Cl. 123—119)

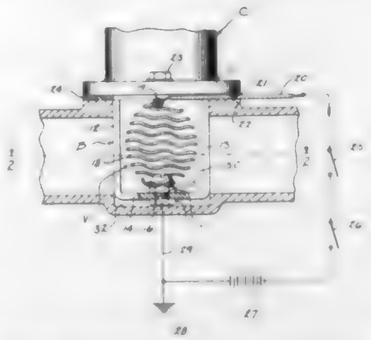


This carburetor for internal combustion engines is operable to supply regulated quantities of fuel into regulated quantities of combustion air in accordance with combustion requirements. Hot exhaust gas preheats the combustion and is mixed therewith to modify the fuel-air ratio and mixture to enhance the combustion characteristics. The fuel-air ratio varies over a considerable range and is regulated automatically by intake manifold pressure and engine temperature conditions. Advancement and retardation of ignition occurs automatically in accordance with different engine operating conditions. A single fuel valve is adjustable to control fuel flow over the full operating range of the engine and cuts off all flow when the engine is not operating and opens immediately on engine turnover during a starting operation.

3,373,726
FUEL VAPORIZER FOR INTERNAL COMBUSTION ENGINES

Walter A. Albrecht, 141 W. Chestnut St., Burlington, Wis. 53105

Filed Feb. 17, 1966, Ser. No. 528,112
1 Claim. (Cl. 123—122)

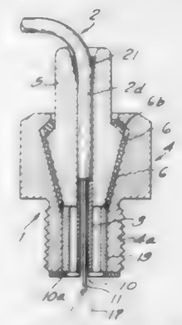


A device for preheating and prevaporizing liquid fuel emanating from an automotive carburetor system having a U-shaped bracket formed from a single length of strip metal insertable in the intake manifold of an engine below the carburetor. The U-shaped bracket having vertically extending substantially parallel legs between which is mounted a heating coil also extending in a vertical position. The heating coil being in a position directly in the path of the fuel sprayed from the carburetor. The vertical legs also being positioned in such a manner as to not obstruct or be in the path of the fuel and the heating element being in an electric circuit in connection with the batteries of the vehicle and vehicle's ignition switch.

3,373,727
SPRAY NOZZLE

Hermann Papst, St. Georgen, Black Forest, Germany

Original application Feb. 18, 1964, Ser. No. 345,125. Divided and this application Aug. 23, 1966, Ser. No. 574,421
Claims priority, application Germany, Feb. 18, 1963, P 31,167
12 Claims. (Cl. 123—139)



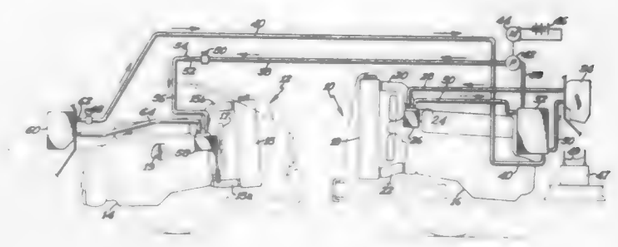
A fuel injection system for an internal combustion engine has an injection pump of the type having a constant rate of discharge in timed relation with the engine, delivers fuel to an open type nozzle forming a tubular discharge pattern within a glow tube.

3,373,728
METHOD AND APPARATUS FOR HEATING STALLED ENGINES

Dennis I. Collins, 5016 Morgan Ave. S., Minneapolis, Minn. 55419

Filed May 5, 1966, Ser. No. 547,823
6 Claims. (Cl. 123—142.5)

An apparatus for heating cold stalled engines which consists of a heat exchanger coupled to the cooling system of a heated engine such as the engine of a tow truck. Heat supplied by the engine of the tow truck elevates the temperature of the heat exchanger sufficiently to heat the coolant of the stalled engine connected to the heat

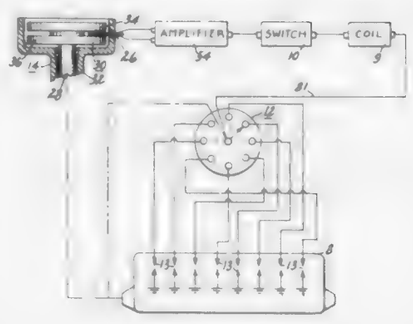


exchanger. A pump is connected in the circuit between the heat exchanger and the stalled engine for circulating the relatively cool liquid contained in the stalled engine between the heat exchanger and the stalled engine.

3,373,729
ELECTRONIC IGNITION SYSTEM

William T. Lemen, Frankfort, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 10, 1965, Ser. No. 513,055
7 Claims. (Cl. 123—148)



A potential signal pulse generator having a rotor member comprised of two axially spaced flange portions, each having a plurality of permanent magnets mounted around the axis thereof in such a manner that each permanent magnet of one flange portion is in axial alignment with a corresponding permanent magnet of the other flange portion. A Hall Effect device is located between the flange portions and positioned in such a manner that the magnetic field produced by each permanent magnet pair is at right angles to the plane in which the input electrodes of the Hall Effect device lie.

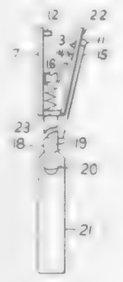
3,373,730
CENTRIFUGALLY OPERATED HAND-CARRIED TOY PROJECTOR AND PROJECTILE

Robert E. Jenison, Rte. 1, Box 74, Lopez, Wash. 98261

Continuation of application Ser. No. 308,790, Sept. 13, 1963. This application June 9, 1966, Ser. No. 562,994
6 Claims. (Cl. 124—5)

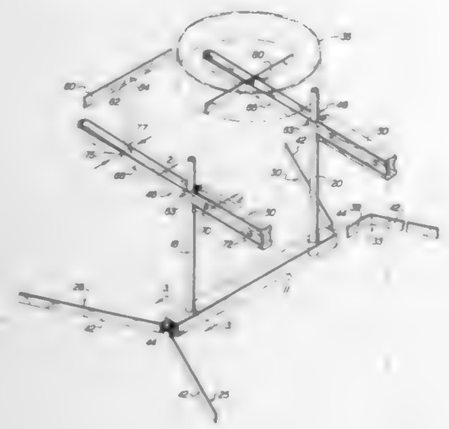
A toy projectile kit is disclosed wherein the projectile is a spinner device which has a center body and thin wing-like arms that extend from the body in opposite lateral directions and are interconnected through the body for conjoint rotation about a lengthwise axis of the arms. The spinner device is launched from a staff or baton which has an upright handle portion and a pair of gripping jaws on the top of the handle portion, one

of which is rigid in construction and rigidly connected with the handle portion and the other of which is capable of flexing in relation to it. The jaws are mutually opposed to one another in a position relatively crosswise of the "throwing" arc of the baton, and are spaced apart to define a slot which opens to the top and sides of the baton and is adapted to receive the body of the spinner device when its arms are disposed in a position lengthwise of the slot and edgewise of its walls. In addition, there are



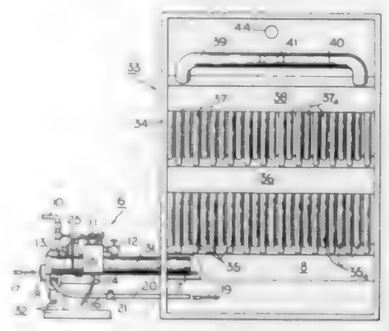
inwardly directed lug means on the walls of the slot which engage the edges of the arms when the device is so inserted into the slot, and retain the device in the foregoing position in the slot until the flexible jaw flexes or is flexed in use, in the direction of spreading the top opening of the slot. Thereupon, the body of the spinner device is released through the opening and rotation is imparted to the arms by the momentary delay imposed at the edge of the arms adjacent the lug means on the rigid jaw.

3,373,731
WILDERNESS CHEF
Alvin Lee Shook, 301 S. Pearl St., Salem, Ill. 62881
Filed Apr. 4, 1966, Ser. No. 539,695
9 Claims. (Cl. 126—30)



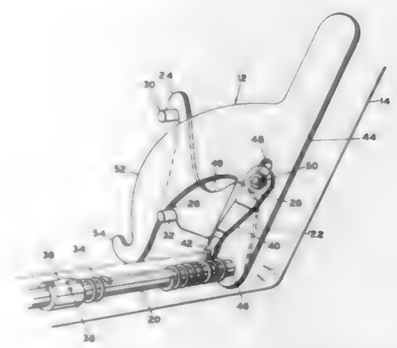
1. An apparatus of the type described comprising an elongated horizontal base support member having a flat bottom and providing a vertical channel having a vertically extending standard passing therethrough and open ends from which horizontal stabilizing legs extend radially, and a horizontal stove member supported by said standard and vertically displaced from said base support, said stove member comprising a handle portion on one side of the standard and a cooking support portion on the opposite side of said standard, one of said portions meeting said standard at an angle when the stove member is in horizontal position, the other of said portions providing a stop member, and spring biasing means holding said stop member against said standard but yieldable to allow displacement of said stop from contact with said standard, said cooking support providing an essentially horizontal surface.

3,373,732
GASEOUS-FUEL JET-FIRED HEATER
Wincenty Tarnas, 371 Portland St., Cambridge, Mass. 02138
Filed Oct. 10, 1966, Ser. No. 585,586
3 Claims. (Cl. 126—116)



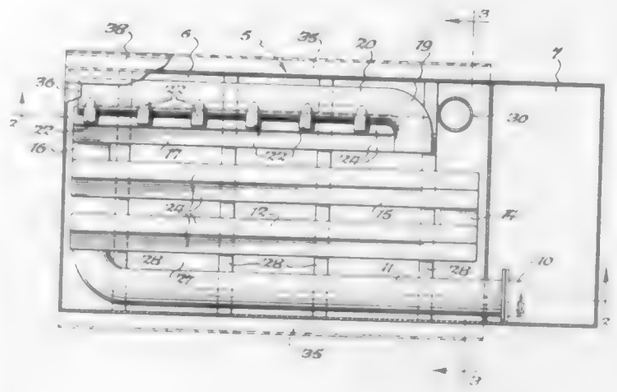
In gaseous-fuel burning apparatus, a constant-speed electric motor drives an air blower to force a high-velocity stream of air from the outlet of a straight hollow air barrel while gaseous fuel is being discharged from the outlet of a surrounding concentric hollow barrel slightly upstream of the air-barrel outlet at a position where the gaseous fuel is caused to be entrained with the stream of air, and a pilot igniter near the outlet of the gas barrel but removed from the air stream serves to ignite the fuel when the fuel supply and motor are turned on independently of pre-established settings for the flows of gaseous fuel and air.

3,373,733
OVEN DOOR HINGE
Robert W. Harrington, William C. Covey, and George McArthur, Jr., Delaware, Ohio, assignors to Sunray Stove Company, Delaware, Ohio
Filed Sept. 23, 1966, Ser. No. 581,478
13 Claims. (Cl. 126—191)



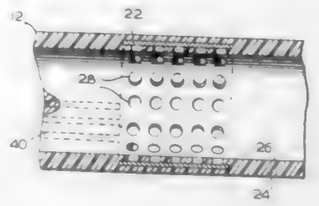
The invention disclosed in this application relates to an oven door hinge and, more particularly, to a hinge for a lift-off door wherein the structure of the hinge permits of the obtaining of all spring forces from a single spring which reaches a valley point of tension at the lift-off point and wherein the spring tension and the spatial relationship among the hinge elements remain substantially constant during removal and replacement of the door. The spring closing force acting on the door at the "broil" position is opposed not only by gravity but also by a cam surface.

3,373,734
SNOW-MELTING APPARATUS
Raymond B. Roemer, 1091 Cleveland Drive, Cheektowaga, N.Y. 14225
Filed Mar. 8, 1966, Ser. No. 532,620
2 Claims. (Cl. 126—343.5)



This apparatus includes a container for the snow and ice to be melted in which a coil having at least one turn is normally submerged in water resulting from the melting and in which combustion of fuel takes place in a part of this coil and in which hot products of combustion pass through the remainder of the coil while submerged, resulting in high efficiency in the use of heat.

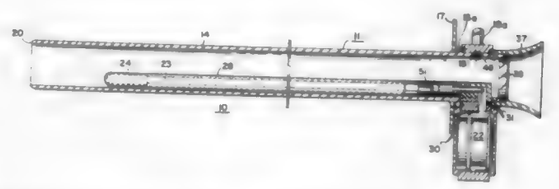
3,373,735
MEDICAL-SURGICAL TUBE
John P. Gallagher, 2415 Foxhall Road NW., Washington, D.C. 20007
Filed Oct. 21, 1965, Ser. No. 500,118
7 Claims. (Cl. 128—2)



1. A medical-surgical tube having an internal end portion adapted to be inserted within a body cavity and an external end portion adapted to remain outside the body, a color-change acid-base indicator carrier means on the tube and located adjacent the outlet end portion of the tube, and means providing liquid communication between the inner wall of the tube and said indicator carrier means.

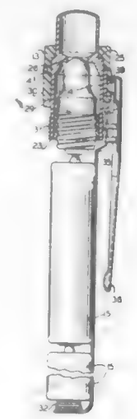
3,373,736
SIGMOIDOSCOPE AND ILLUMINATING MEANS THEREFOR
John Michael Fiore and William Frank Ferro, Troy, N.Y., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 339,479, Jan. 22, 1964. This application Mar. 22, 1965, Ser. No. 441,813
5 Claims. (Cl. 128—6)

An illumination unit for use with a speculum device consisting of a housing means, releasably secured to the proximable end of the speculum, elongated support means releasably secured to the housing means, illuminable means secured to the free end of the support means, and



disposable contamination means surrounding both the support and illuminable means.

3,373,737
LIGHT CONTROL FOR DIAGNOSTIC INSTRUMENTS
William C. Moore, Skaneateles, and John D. Connors, Auburn, N.Y., assignors to Welch Allyn, Inc., Skaneateles Falls, N.Y., a corporation of New York
Filed Sept. 28, 1965, Ser. No. 490,875
2 Claims. (Cl. 128—9)

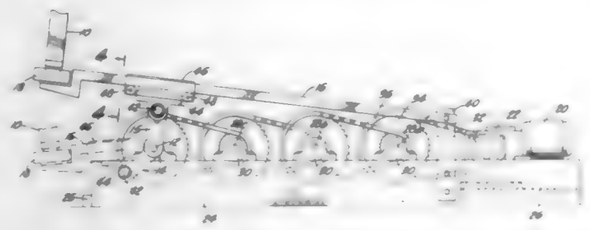


A diagnostic instrument has a tubular light socket in a hollow housing connected as one terminal of a lamp-battery series and a metal spring contact member mounted on the housing is connected as the other terminal. A switch ring of insulating material is rotatably mounted on the socket and a brush element in contact with the socket is carried in a slot in the ring. A hole in the ring communicating with the slot is registerable in "on" position with one end of the spring member which is biased toward the brush element. A depression in the ring is also registerable with the spring end for locking the ring in "off" position.

3,373,738
THERAPEUTIC OSCILLATING APPARATUS
Kurt W. Wittke, 7055 Corbin Ave., Canoga Park, Calif. 91306
Filed Jan. 27, 1965, Ser. No. 428,468
10 Claims. (Cl. 128—28)

1. Apparatus for oscillating a bed about a horizontal plane, comprising in combination:
(a) a stationary support frame,
(b) a crankshaft rotatably supported on said frame,
(c) drive means for rotating said shaft,
(d) a crank driven by said shaft, said crank being arranged to rotate about said shaft,
(e) a lifting arm having one end pivoted to said frame and means on the other end of said lifting arm adapted to support said bed,
(f) a carriage member slidably disposed on said lifting arm,

(g) means connecting said crank to said carriage member,

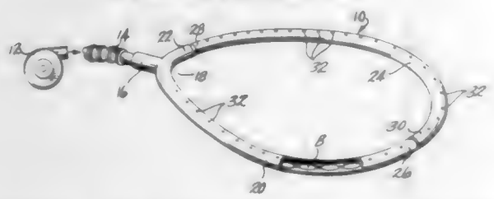


(h) said carriage being so constructed and arranged with respect to said crank and said lifting arm as to support and oscillate the bed supporting end of said lifting arm as said carriage is oscillated by said crank.

3,373,739
APPARATUS FOR MASSAGING THE SCALP WITH ROTATING BRUSHES
John Cameron Rankin, P.O. Box 902, Montgomery, Ala. 36102
Filed May 10, 1965, Ser. No. 454,448
6 Claims. (Cl. 128—56)

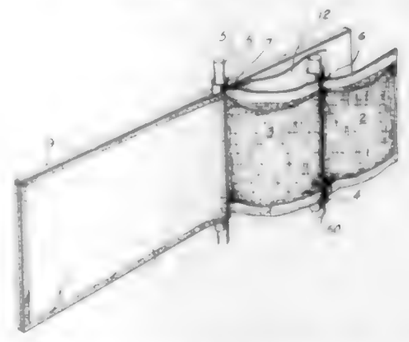
Apparatus for massaging and exercising the scalp of the head embodying a pair of downwardly and inwardly curved arms, on the lower ends of which are mounted either hand operated or motor driven brushes, the brushes being mounted for universal movement relative to the head, and handles immediately associated with the brushes by means of which the brushes may be moved inwardly and upwardly while rotating the same, thus to exercise the scalp.

3,373,740
HYDROKINETIC BATH APPARATUS
Anna Riepl, 2102 Lake Washington Blvd. SE., Bellevue, Wash. 98004
Filed Apr. 8, 1965, Ser. No. 446,569
8 Claims. (Cl. 128—66)



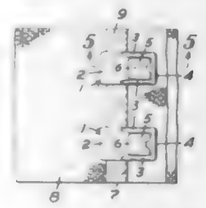
Hydrokinetic bath apparatus comprising a submersible aerator of branched conduit form, the conduits being made from a soft elastomeric material rendering them soft and flexible. Ballast means in said conduit. A closed loop form of such aerator including a removable section rendering it changeable in size from a large loop including such section to a small loop minus such section.

3,373,741
PLASTIC SPLINT
James T. Hill, Bowie, Md., Donald R. Ingenito, Washington, D.C., and Fred Leonard, Bethesda, and Peter M. Margetis, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 19, 1965, Ser. No. 441,389
8 Claims. (Cl. 128—90)



This disclosure relates to a new splint and more particularly to a novel, light-weight, load bearing splint. The splint comprises a padded envelope containing at least two separate and distinct materials maintained separately, the materials when mixed being capable of forming a cured plastic resin composition.

3,373,742
BANDAGE FASTENER AND ASSEMBLY
Stuart T. Shears, Belmont, and Warren C. Anderson, Jr., Marblehead, Mass., assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,607
2 Claims. (Cl. 128—171)

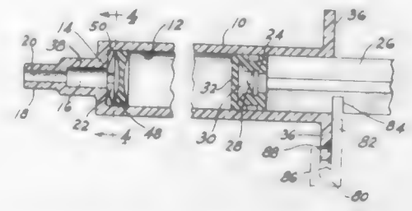


The combination of a stretch fabric, rolled bandage which is adapted to be tightly wound about part of one's body and a fastening device for securing the end of the bandage to the underlying windings. The fastening device is of a molded, synthetic plastic construction and is permanently attached to one end of the bandage, preferably by heat sealing. In addition, the fastener is self-orienting in that the flexible projection(s) which piercingly engages underlying windings may be readily deflected below its normal plane to effect such engagement regardless of the attitude of the other parts of the fastening device as it emerges from the end of the bandage roll.

3,373,743
DISPOSABLE HYPODERMIC SYRINGE
Jacob A. Saffir, Los Angeles, Calif., assignor to The Dentists' Supply Company of New York, York, Pa., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 326,988
2 Claims. (Cl. 128—218)

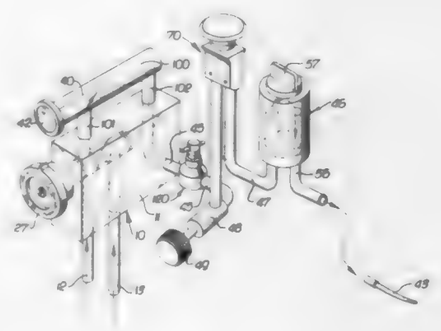
1. A disposable hypodermic syringe comprising an elongated tubular body of substantially uniform cross-

sectional shape, defined by an uninterrupted cylindrical surface between the opposite ends thereof, one end of said body having an end wall fixed thereto and provided with passage means through which contents of said body may be discharged and aspirated and to which a hypodermic needle is attachable, said end wall having radial projections which slope upwards from the passage means extend to the inside wall of the tubular body the opposite end of said body being open and receiving a piston which is slidably mounted within said body, and a rod connected to said piston and extending through said open end of said body to effect reciprocation of said piston in opposite directions within said body, in combination with an imperforate closure



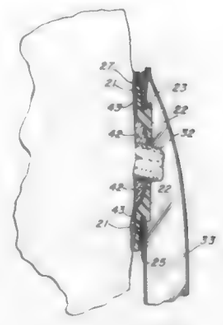
means mounted within said body adjacent said one end thereof and at the periphery thereof being substantially cylindrical and of uniform width throughout its circumference and sealingly engaging the interior walls of said body to prevent contact of contents of said body with the passage means on one end of said body until discharge of said contents is desired, said closure means being of such thickness and flexibility that positive pressure upon the piston will cause the closure means to engage the said projections so as to effect separative movement of at least part of the periphery of said imperforate closure means laterally away from the interior walls of said body and thereby permit either discharge or aspiration of material through said passage means in said one end of said body and past said closure means.

3,373,744
BODY CAVITY IRRIGATING APPARATUS HAVING A MEDICAMENT ADDITIVE CHAMBER WITH MEANS TO INDUCE A MIXING BUBBLE
William Denis Kendall, Los Angeles, Calif., assignor to Dynapower Systems Corporation of California, Santa Monica, Calif., a corporation of California
Continuation-in-part of application Ser. No. 403,803, Oct. 14, 1964. This application Apr. 2, 1965, Ser. No. 445,045
4 Claims. (Cl. 128—229)



The disclosed apparatus concerns enema or douche application wherein discharge water temperature and treatment additive entrainment are beneficially controlled.

3,373,745
MEDICAL DEVICE SUCH AS FOR ILEOSTOMY AND COLOSTOMY
John R. Benfield, 4801 Sheboygan Ave., Madison, Wis. 53705, and George W. Barnhart, P.O. Box 1151, Ogden Dunes, Ind.
Filed Nov. 16, 1964, Ser. No. 411,524
6 Claims. (Cl. 128—283)



Disclosed is a device to hold a bag to receive bodily discharge from a stoma such as formed by a colostomy operation. The device comprises a flexible disk, such as of silicon rubber, with a flange to hold the bag and a rear surface molded in contact with the body to the body contour in and about the stoma.

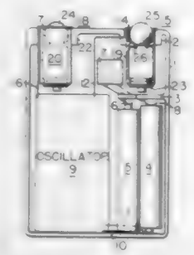
3,373,746
INTERNAL PROPHYLACTIC
Courtney W. White, 4890 Hart Drive, San Diego, Calif. 92116, and Lawrence J. Crow, 9451 El Granito, La Mesa, Calif. 92041
Filed Sept. 8, 1965, Ser. No. 485,698
3 Claims. (Cl. 128—294)

1. An internal prophylactic appliance comprising:
an open ended tubular member constructed of a porous expandable material;
an inner absorption member constructed of a porous expandable material, said inner absorption member being press fitted within said open ended tubular member; and
a capsule adapted to dissolve at body temperature wherein said open ended tubular member is encapsulated in said capsule, the outer said open ended tubular member having an outside dimension suitable for the insertion thereof within a user's urethrae.

3,373,747
ELECTRICAL MUSCLE STIMULATOR DEVICE AND RAZOR ATTACHMENT THEREFOR
Robert Tapper, Los Angeles, Calif. 90016 (% General Medical Co., 5701 W. Adams Blvd.)
Filed Apr. 28, 1967, Ser. No. 634,695
10 Claims. (Cl. 128—422)

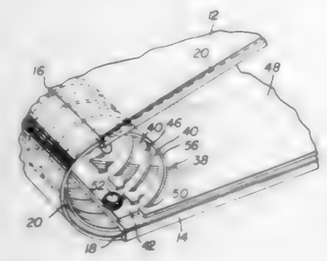
An electrical muscle stimulator employs an electrically conductive substance to make contact superficially of a muscle to be stimulated. The conductive substance is dis-

pensed from a pair of spaced dispensers having revolvable spheres. A semiconductor oscillator device provides a unidirectional peaked voltage waveform having relatively long dwell periods between the peaks. For a self-contained structure an amplifier and a step-up transformer in addition to the oscillator device provide a desired amplitude of electrical output, with a variable impedance element included for adjusting it. To accomplish



shaving while accomplishing muscle stimulation and/or hair erection, one or more shaving heads are positioned adjacent to the pair of dispensers. Resilient mechanical contact and the electrical contact are provided by a spring within each dispenser. Gating, to periodically interrupt the series of peaked pulses to allow the muscles to relax, is achieved by motion of the device over the skin or by electrical interrupting means.

3,373,748
EXPANDABLE RING BINDER
Ronald J. MacCormack, Rancho Cordova, Calif.
(P.O. Box 74, Medway, Ohio 45341)
Filed Aug. 1, 1966, Ser. No. 569,318
2 Claims. (Cl. 129—1)



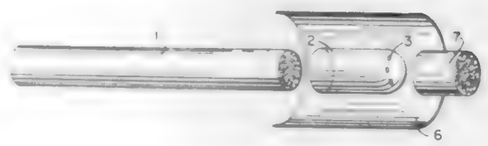
A looseleaf binder utilizing an adjustable binder ring sheet between a pair of covers. One end of the sheet is slidably received within and selectively extensible from a pocket defined in one of the covers with the second end of the sheet, subsequent to the defining of a loop with the sheet, being secured to the inner face of the cover having the pocket therein. The second cover includes a bracket which is engaged over the loop portion of the sheet so as to allow for a movement of the second cover toward and away from the first cover.

3,373,749
BINDERS OR HOLDERS FOR BOOKS
Frank Wance, Linden, and Rudolph A. Kraft, Westfield, N.J., assignors to S. E. & M. Vernon, Inc., New York, N.Y., a corporation of New York
Filed Sept. 13, 1966, Ser. No. 579,141
1 Claim. (Cl. 129—38)

A binder for relatively large books such as telephone directories, reference books and the like, the binder having a back and covers pivoted thereto. A hollow rectangular housing is attached to the inside face of the back at each of its opposite ends. A U-shaped wire retainer has legs fitted between the pages of the book and has its opposite ends protruding beyond the pages of the book. One of the housings has two holes into which the legs of the retainer, at one end, enter. At their opposite ends the legs are connected by an integral offset cross piece. Near the cross piece, portions of the legs enter the

second housing and a spring-biased latch contained within the second housing extends over these portions of the legs. The latch is retractible to free its engagement with the retainer by a key that is entrant through a slot located between the second housing and the back of the book.

3,373,750
CIGARETTE FILTER
Jon W. Beam, 1310 E. 2nd St., Cushing, Okla. 74023
Filed Oct. 1, 1964, Ser. No. 400,782
10 Claims. (Cl. 131—10.5)

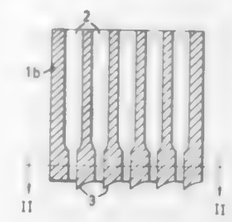


A filter cigarette having a capsule-shaped section containing a number of spaced pinholes in the hemispherically shaped end which increase the velocity of the smoke and direct the smoke against a side wall.

3,373,751
METHOD IN UTILIZING AND REFINING TOBACCO DUST AND WASTE
Arne Wallberg, Jonkoping, Sweden, assignor to Industrilaboratoriet Aktiebolag, Jonkoping, Sweden, a joint-stock company of Sweden
Filed Oct. 13, 1964, Ser. No. 403,577
Claims priority, application Sweden, Oct. 18, 1963, 11,449/63
3 Claims. (Cl. 131—140)

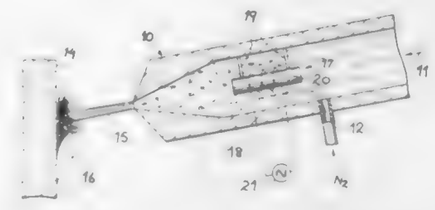
Method for producing shaped masses of tobacco from waste tobacco including milling the waste tobacco in the presence of water for a time sufficient to destroy the cell walls of the tobacco without materially reducing the fiber length, and to hydrate and fibrillate cellulose content thereof, and thereby produce a paste-like mass. An inert gas is passed through the mass during the milling and is removed prior to shaping. Thereafter the paste-like mass is

shaped into helical strings or thin filamentous web by extrusion through a nozzle having a plurality of passages, the wall of each passage at its mouth having (1) a projecting point which defines only part of the circumference of



the mouth of the passage or (2) an insert which defines only part of the circumference of the mouth of the passage and has a friction coefficient which differs materially from that of the remainder of the mouth of the passage.

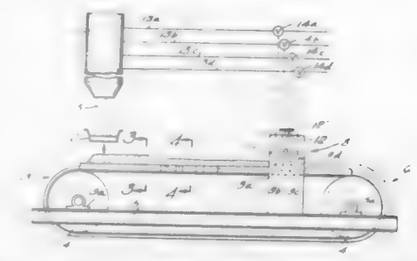
3,373,752
METHOD FOR THE ULTRASONIC CLEANING OF SURFACES
Kiyoshi Inoue, Kanagawa, Japan (182 3-chome, Tamagawayoga-machi, Setagaya-ku, Tokyo, Japan)
Filed Nov. 12, 1963, Ser. No. 322,932
Claims priority, application Japan, Nov. 13, 1962, 37/49,783
1 Claim. (Cl. 134—1)



Method for cleaning a surface by directing a high-pressure stream of liquid/gas mixture from a nozzle thereagainst, ultrasonic vibrations being imparted to the mixture in the nozzle by an electromechanical transducer cooperating with a resonant body downstream thereof and having a natural frequency of vibration of the order of that generated by the transducer, while serrated areas on the internal tapered wall of the nozzle and on the resonant body augment the turbulence in the nozzle.

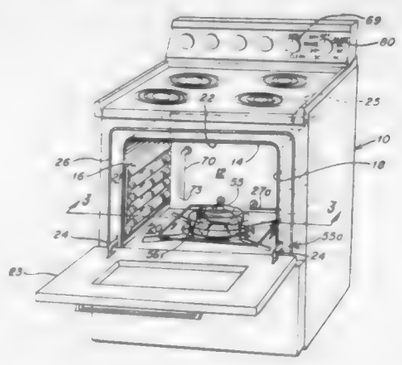
3,373,753
METHOD AND APPARATUS FOR MEASURING AND ADJUSTING THE MOISTURE CONTENT AND THEREWITH THE FORMABILITY OF GRANULAR MATERIAL SUCH AS FOUNDRY SAND AND THE LIKE
Hermann Jacob, Fachenfelderweg 115, Horst, Kreis Maschen, Germany
Filed July 29, 1966, Ser. No. 568,864
Claims priority, application Germany, July 31, 1965, J 28,692
14 Claims. (Cl. 134—18)

1. A method for measuring and adjusting the moisture content and therewith the formability of granular material such as foundry sand and the like comprising the steps of dropping the granular material in moistened condition and in a thin stream onto a surface extending substantially normal to said stream; continuously moving said surface in a direction substantially normal to said stream so that the material will form on said surface a continuous pile of triangular cross section in which the angles of the triangular cross section will depend on the angle of repose of the material, which angle of repose will in turn be proportional to the moisture content of the material; maintaining the base of said pile at a constant preselected width so that the height of the pile will depend on the



angle of repose; measuring the height of said pile thus formed; and regulating the moisture content of the material before dropping it onto the surface in dependence on the measured height of said pile of preselected width.

3,373,754
SELF-CLEANING OVEN
Herbert D. Squire, Galesburg, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 517,686
2 Claims. (Cl. 134—58)



A self-cleaning oven employing a water impeller blade for violently dispersing cleaning fluid throughout the oven enclosure and for simultaneously comminuting dislodged food soil. A fan blade is coaxially mounted with the impeller blade for circulating warm air throughout the chamber to dry the oven after cleaning and for maintaining more uniform cooking temperatures.

3,373,755
SHEET MATERIAL HANDLING AND TREATING APPARATUS
Mataichi Tajima and Kiichiro Sakamoto, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
Filed June 24, 1966, Ser. No. 560,176
Claims priority, application Japan, June 24, 1965 40/37,298
4 Claims. (Cl. 134—134)

1. An apparatus for handling sheet material comprising:

a tank,

a gate through which a piece of sheet material may be introduced into said tank,

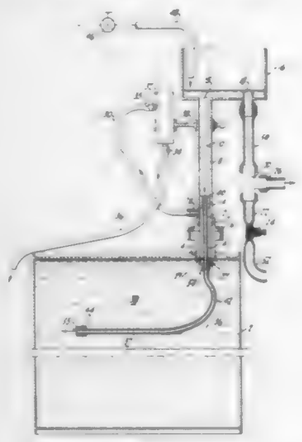
a pair of feed rolls which, upon rotation in a forward direction (1) engage the leading edge of said piece of sheet material, as said sheet material is introduced through said gate, (2) advance said sheet material into said tank, and (3) disengage said sheet material in said tank,

a butting member in said tank adjacent to the leading edge of said sheet material when said sheet material is in said tank and is disengaged from said feed rolls,

means for moving said butting member against the leading edge of said sheet material to move the trailing edge of said sheet material into contact with said feed rolls, and

means for rotating said feed rolls in a reverse direction to engage said trailing edge and withdraw said sheet material from said tank.

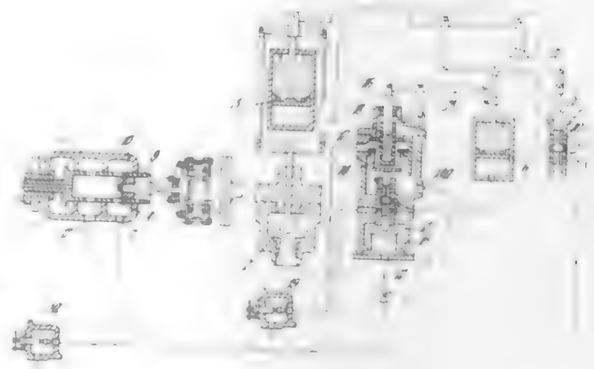
3,373,756
APPARATUS AND METHOD FOR FEEDING CHEMICALS INTO LIQUID SYSTEMS
Herman J. Franz, Richmond, Calif., assignor to Garratt-Callahan Company, Millbrae, Calif., a corporation of California
Filed June 28, 1966, Ser. No. 561,227
6 Claims. (Cl. 137—1)



An apparatus and method in which a water-tight container of soluble chemicals has an influent conduit with a flexible tube extending into the container, an effluent conduit, and chemicals in the container which are dissolved at a controlled rate by adjusting the liquid head level of liquid passing into the container to control the rate of flow of the solvent through the container.

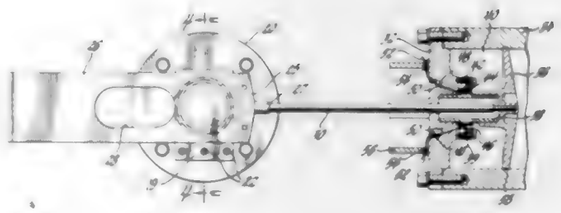
3,373,757
SPEED GOVERNING SYSTEM WITH HYDRAULICALLY OPERATED COMPENSATING DEVICE
William George Watson, Newcastle-upon-Tyne, England, assignor to C. A. Parsons & Company Limited, Newcastle-upon-Tyne, England, a company of Great Britain
Filed June 7, 1965, Ser. No. 461,674
Claims priority, application Great Britain, June 15, 1964, 24,780/64
2 Claims. (Cl. 137—34)

A speed governing system for a steam turbine incorporating a governor operable responsive to a change in the turbine speed for varying the pressure in a hydraulic system operated by the governor and provided with a valve for controlling the flow of steam to the turbine in which a compensating device sensitive to changes in the pressure in the hydraulic circuit and the pressure in a separate feedback circuit operable for varying the opening of the valve is provided. The compensating device includes a control movable responsive to a change in the pressure of the hydraulic system for altering the valve opening and



at the same time for altering the opening of ports in the compensating device for changing the pressure of fluid in the feedback circuit in a non-linear relationship to the movement of the control member. Hence, the relationship between change of pressure in the hydraulic system and the movement of the control member is made non-linear for compensating for the non-linear relationship between the valve opening and the flow of steam.

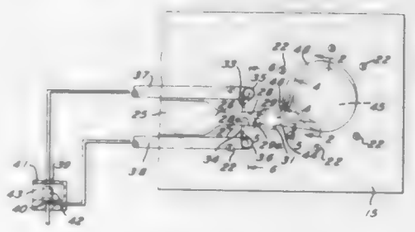
3,373,758
HIGH SPEED GATE VALVE
Frederick K. Boutwell, Alexander B. Wenzel, and Alexander C. Charters, Santa Barbara, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,543
8 Claims. (Cl. 137—68)



1. A high speed explosively actuated gate valve comprising, in combination:
a flat member having a passage therethrough, a thin flat gate overlying said flat member and covering said passage, said flat gate being transversely movable in a plane parallel to the surface of said flat member,
an aperture in said gate, said aperture overlying said passage in at least one position of said gate as it translates from a starting position to a terminating position, said gate having end portions of sufficient size to cover said passage when said gate is in its starting and terminating positions,
a fixed cylinder with a piston slidable therein having a line of action in said plane, said cylinder adapted to be pressurized on one side of said piston,

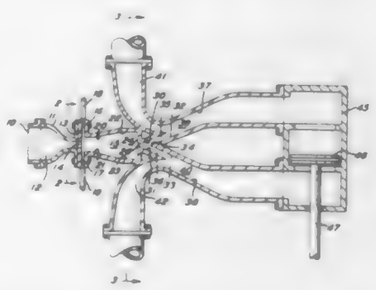
means to operatively connect said piston to said gate, a frangible link connecting said one side of said piston to said cylinder to hold said piston in its starting position when it is subjected to a differential pressure,
an explosive charge adjacent said frangible link, and
triggering means operatively connected to said charge whereby actuation of said triggering means explodes said charge breaking said link and releasing said piston to allow it to move under differential pressure and translate said gate to uncover said passage for a very short time.

3,373,759
FLOW CONTROL APPARATUS
Robert B. Adams, Bethayres, Pa., assignor to Moore Products Co., Spring House, Pa., a corporation of Pennsylvania
Filed Jan. 21, 1965, Ser. No. 426,994
11 Claims. (Cl. 137—81.5)



Flow control apparatus having oppositely arranged superposed vortex chambers with fluid selectively delivered to said vortex chambers from a pure fluid proportional diverting valve, the vortex chambers extending to a common outlet.

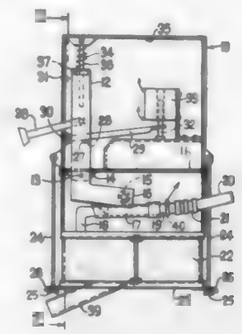
3,373,760
FLUID CONTROL APPARATUS
Robert B. Adams, Bethayres, and Theodore J. Huslin, Philadelphia, Pa., assignors to Moore Products Co., Spring House, Pa., a corporation of Pennsylvania
Filed Feb. 24, 1965, Ser. No. 434,941
11 Claims. (Cl. 137—81.5)



Fluid flow control apparatus having a fluid interaction chamber with a single outlet smaller than the inlet and with a blunt end at the outlet of the chamber, diverging collecting passageways being provided beyond the chamber with backward vents.

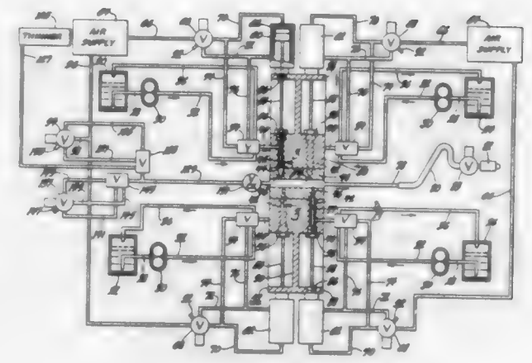
3,373,761
AUTOMATIC CONTROL MECHANISM FOR MILKING MACHINES
Andrew J. Flocchini, 7078 Lakeville Highway, Petaluma, Calif. 94952
Filed Oct. 24, 1965, Ser. No. 504,871
3 Claims. (Cl. 137—205)

Apparatus for controlling the milking of a dairy animal in which a time-delay relay, energized by a milk-responsive probe, releases a spring-loaded arm to cut off



the vacuum to the animal when the milk flow ceases for more than a preselected interval.

3,373,762
MULTIPLE FLUID DELIVERY SYSTEM WITH LIQUID AND GAS PURGING MEANS
William J. Korchak, Arlington, Tex., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,602
5 Claims. (Cl. 137—240)

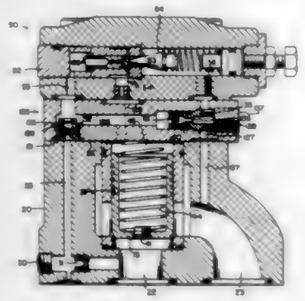


1. A multiple fluid delivery system including tubular means having an axially extending passage and a plurality of transversely positioned passages extending to said axial passage, each provided with a valve seat, each of said transverse passages being provided with a valve positioned transversely relative to said tubular means cooperating with the valve seat therein, means for delivering different fluids to said transverse passages for delivery under the control of the valves provided therein to said axially extending passage, a fluid discharge means connected to one end of said axially extending passage and purging means connected to the opposite end of said axially extending passage for delivering a purging fluid to said axially extending passage for conduction therethrough.

3,373,763
HIGH SPEED VALVES
Robert Smilges and Joseph H. Caslow, Columbus, Ohio, assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 102,824, Apr. 13, 1961. This application Jan. 4, 1963, Ser. No. 253,779
20 Claims. (Cl. 137—169)

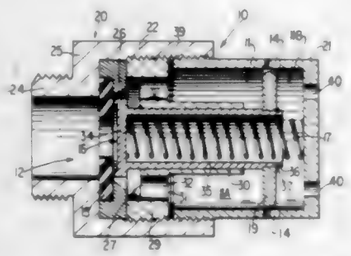
1. A valve comprising, a valve body, said body presenting a cylindrical chamber therewithin, an inlet port entering said chamber at one end thereof, an outlet port ex-

tending laterally from said chamber, a cylindrical valve member slidably received in said chamber, said valve member having a diameter larger than that of said inlet port and having an endwise portion seating in edge contact against said inlet port, elastic means biasing said valve member toward said inlet port, a restricted fluid passage communicating between said inlet port and said chamber at the end of said valve member is opposite to said endwise portion, the area of said valve member



which is subjected to pressure in said chamber at the end of said valve member opposite to said endwise portion being greater by about 0.5 to about 6 percent than the area of the endwise portion of said valve member which is subjected to pressure at said inlet port when said valve is closed, and a pilot valve adapted to release pressure in said chamber at the end of said valve member which is opposite to said endwise portion when pressure in said chamber equals a predetermined value.

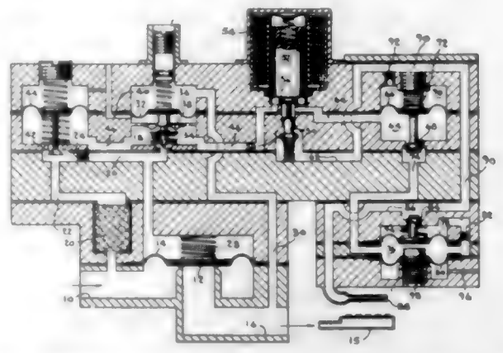
3,373,764
HIGH FLOW RELIEF VALVES
Alfred J. Munn, Wayne, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Filed Feb. 17, 1966, Ser. No. 528,301
1 Claim. (Cl. 137—469)



A high flow relief valve including a tubular body provided with an inlet and a tubular casing attached to the body and provided with an outlet in its side wall, a valve seat at the inlet, a valve member within the body, a piston in the casing carried by the valve member to regulate the flow through the outlet as the valve member moves and to be acted upon by the fluid flowing through the valve. The casing is adjustable to vary the position of the outlet with respect to the piston to adjust the operating characteristics of the valve.

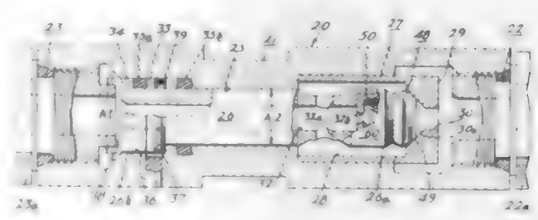
3,373,765
ELECTRIC RESET FOR PNEUMATIC SENSOR CONTROL
Lourdes V. McCarty, Milwaukee, Wis., assignor, by mesne assignments, to Controls Company of America, Melrose Park, Ill., a corporation of Delaware organized in 1966
Filed Oct. 23, 1965, Ser. No. 502,842
7 Claims. (Cl. 137—489)

1. A control system for regulating gaseous flow comprising:
first and second conduits;
a first restriction between the conduits;
a second restriction on the outlet of the second conduit;
a pressure regulated gas supply to the first conduit;
a first valve in the first conduit operative when closed to interrupt flow through the first conduit;



pressure responsive means regulating said valve to close the valve when the pressure in the second conduit is below a given value relative to the pressure in the first conduit and to open the valve when the pressure in the second conduit is above a given value relative to the pressure in the first conduit;
a control valve located between the gas supply and the first conduit and operative in one position to connect the supply to the first conduit and in another position to vent the first conduit.

3,373,766
BRAKE PROPORTIONING VALVES
Roger E. Doerfler, Baltimore, Md., assignor to Hydrasearch Co., Inc., Annapolis, Md., a corporation of Maryland
Continuation-in-part of application Ser. No. 469,271, July 2, 1965. This application Oct. 22, 1965, Ser. No. 502,264
8 Claims. (Cl. 137—494)

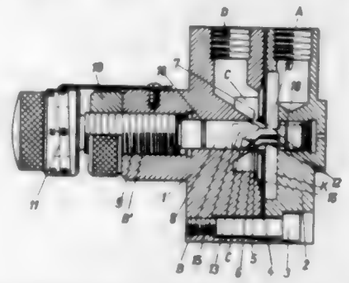


Apparatus for proportioning hydraulic brake pressure to a wheel pair of a motor vehicle, the apparatus including a spool mounted in the bore of a body having an inlet and outlet end. The spool, responsive to an increase in pressure at the inlet end, moves towards the inlet until it seals off the inlet pressure and prevents further communication between the inlet and outlet until an increased pressure is placed on the inlet end of the spool. Thereafter pressure increases to the wheel pair at a fixed percentage of the inlet pressure increase rate. The improvement includes a novel check valve for inhibiting flow or pressure communication between the inlet and outlet when the spool is sealing the inlet, and to permit flow upon release of pedal pressure from the master cylinder.

3,373,767
FLOW CONTROL VALVE FOR REGULATING FLUID FLOW RATES
Jürgen Watermann, Baustrasse 17, Solingen-Ohligs, Germany
Filed June 24, 1965, Ser. No. 466,707
Claims priority, application Germany, June 27, 1964, W 37,060
8 Claims. (Cl. 137—503)

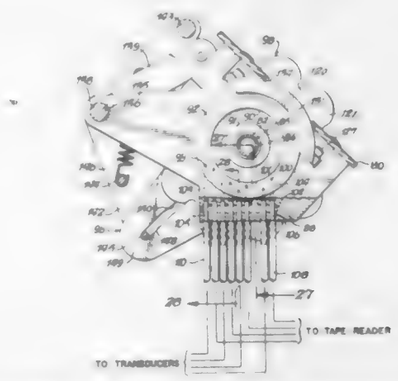
The flow-rate regulator provides a restrictor between a stationary wall portion and a throttling member moved

by the flowing medium, the restrictor reducing its cross section of flow in response to an increase in the pressure differential between the inlet and the outlet of the flowing medium, so as to maintain a constant rate of flow. The regulator is characterized by a stationary outer cylindrical rim and a flexible diaphragm mounted by the rim; one side of the diaphragm is exposed to the inlet pressure, and the other side is exposed to the outlet pressure, the stationary wall portion being on the outlet side opposite the diaphragm. The diaphragm has a round central aperture with its edge facing the stationary wall portion to



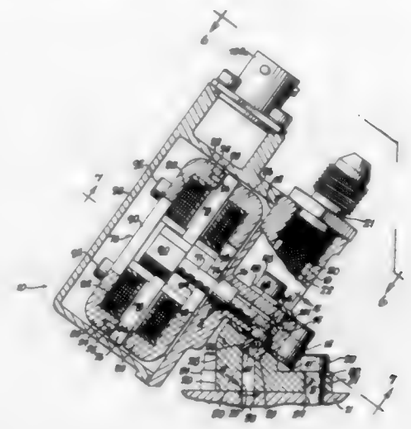
provide a circumferential gap in communication with the outlet, and a spindle mounted movably in the central aperture is provided with means for adjusting its location from outside, in order to vary the circumference of the gap. The portion of the spindle penetrating through the diaphragm forms a hollow cylinder whose sheath is cut out to provide shaped openings for passage of the fluid medium into the gap, and the hollow spindle is closed off by transverse walls at both ends. The delineations of the cutouts are such that a change in the circumferential length of the gap occurs in linear proportion to the longitudinal movement of the spindle.

3,373,768
POSITIONER
Robert Z. Hague, Oradell, Howard H. Laucks, Oakland, and Conrad C. Treff, New Milford, N.J., assignors to Moog Inc., a corporation of New York
Original application Jan. 7, 1963, Ser. No. 249,842, now Patent No. 3,198,084, dated Aug. 3, 1965. Divided and this application Sept. 23, 1964, Ser. No. 405,637
4 Claims. (Cl. 137—556)



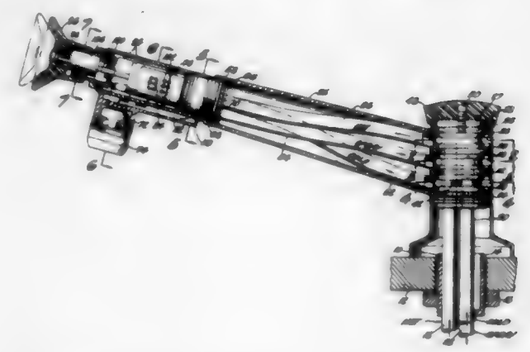
1. In positioning apparatus, the combination comprising means constituting transducer chambers, and manual control means for controlling the presence or absence of pressure fluid in said chambers, said manual control means including a pivotal dial member the periphery of which has numbered stations and a recess adjacent each of said stations and detent means cooperating with said recesses to yieldingly hold said dial member at any station selected, said dial member having port means therein arranged to vent said chambers according to predetermined pivotal positions of said dial member corresponding to said stations.

3,373,769
VALVE FOR CONTROLLING SIMULTANEOUSLY THE FLOW OF TWO SEPARATE FLUIDS
Aurelius Chaves, Jr., Lancaster, William J. Thayer, East Aurora, and Roderick F. Bailey, Alden, N.Y., assignors to Moog Inc., a corporation of New York
Continuation of application Ser. No. 387,637, Aug. 5, 1964. This application Nov. 2, 1966, Ser. No. 591,646
10 Claims. (Cl. 137—595)



A control valve for handling isolated fluids, comprising a body having separate chambers each with an inlet and an outlet, separate valve closure elements arranged severally in said chambers and connected together for movement in unison to open and close said outlets simultaneously in response to a command signal, and flexure means mounting each of said closure elements for such movement and also sealing said chambers one from another.

3,373,770
SWING SPOUT CONTROL MECHANISM
Irving A. Ward, Los Angeles, and Jack K. Rauh, Hacienda Heights, Calif., assignors to Modern Faucet Mfg. Co., Los Angeles, Calif., a corporation of California
Filed June 24, 1965, Ser. No. 466,658
1 Claim. (Cl. 137—615)

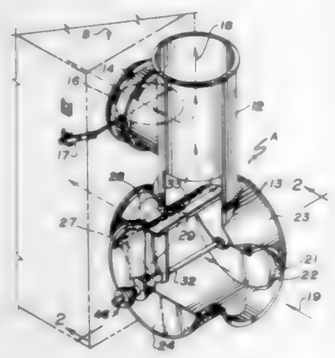


A swing spout for supplying hot and cold water having a mixing valve positioned adjacent the spout outlet for controlling the volume of mixture of water discharged therefrom.

3,373,771
GAS FLOW MODULATOR VALVE
John L. Boyen, Oakland, Calif., assignor to Besler Corporation, Emeryville, Calif., a corporation of California
Filed Apr. 29, 1965, Ser. No. 451,914
6 Claims. (Cl. 137—625.46)

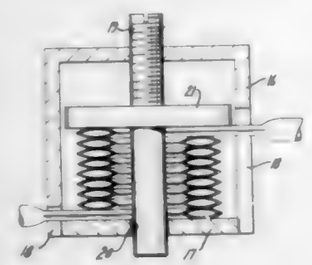
A fluid flow modulator valve having a plurality of outlet ports and including a variable positionable baffle plate

having a curved surface corresponding to the inner surface of the valve to enable the plate to be aligned in close proximity for closing at least one of the ports. The



valve also includes at least one rib for alignment with the plate to provide a fluid-tight seal around at least a portion of the closed port.

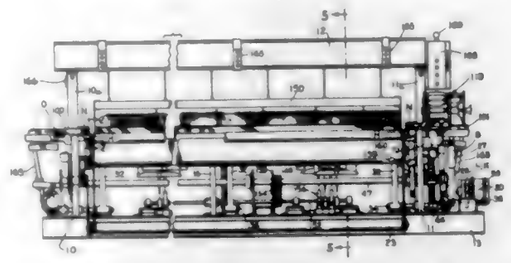
3,373,772
FLUID SYSTEM AND A RESTRICTOR THEREFOR
Adolph J. Hilgert, Mequon, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 17, 1964, Ser. No. 411,768
5 Claims. (Cl. 138—43)



A pure fluid control system includes a fluid source connected to an impact modulator or other fluid modulating device through a special restrictor. The restrictor is a tubular metallic member having a generally oval cross section terminating in very sharply defined side edges. A collar encircles the restrictor section and includes a generally flat surface parallel to the plane through the side edges of the restrictor. A movable plate rests on the opposite surface of the restrictor within the collar and a screw threads and acts on the plate to selectively compress the restrictor to establish a selected pressure drop. The restrictor in a particularly useful and novel arrangement is coiled in a spiral manner to provide adjacent convolutions disposed between a base plate and a movable plate. To provide a potentiometer type control, the coiled restrictor is disposed within a chamber with a centrally located movable plate.

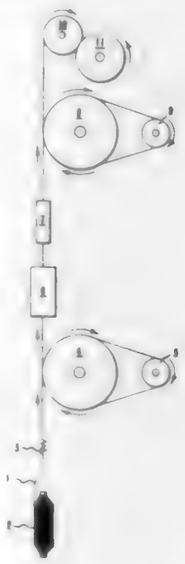
3,373,773
LOOM
George H. Balentine, Jr., Rte. 5, Star Park Road 29609; Richard W. Johnson, 20 Lisa Drive 29607; and Thomas L. Cox, Apt. D, Windsor Apts., 3701 Buncombe Road 29609, all of Greenville, S.C.
Filed July 12, 1965, Ser. No. 471,025
43 Claims. (Cl. 139—1)

An improved protection system is provided for looms wherein sensors are positioned on the lay and a cyclical element is driven by cyclically driven means on the loom. The element produces a signal which would stop loom operation if the shuttle has not reached a required position in relation to a sensor. In conjunction with the



protection system an improved lay drive is provided. Other improvements include a loom drive, fault detectors, shuttle position detectors, a thread cutter, transfer mechanism, lay structure, control circuitry and associated parts.

3,373,774
CREPE FABRIC OF POLYESTER YARNS
Calvin J. Cruz, Greenville, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 528,730
2 Claims. (Cl. 139—420)

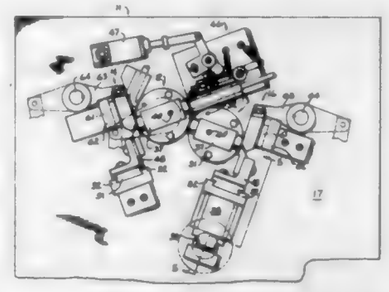


A plain-weave crepe fabric the filling of which comprises a "torsionally crimped" polyethylene terephthalate textile yarn and the warp of which comprises continuous filament polyethylene terephthalate textile yarns having a shrinkage-modulus in the range from about 0.1 to about 4.0 grams per denier which is less than 0.027 of the percent crimp development of the filling yarn, the warp filaments having a residual shrinkage from about 2% to about 12% with the residual shrinkage of each filament in the darp differing from the residual shrinkage of the other warp filaments by no more than 2%.

3,373,775
APPARATUS FOR PRODUCING LOOPS ON COIL SPRINGS
George A. Reddington, San Leandro, Calif., assignor to HRC Development, Inc., Lodi, Calif., a corporation of California
Filed July 19, 1965, Ser. No. 472,921
6 Claims. (Cl. 140—103)

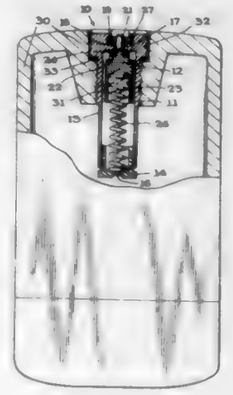
An automatic spring looping apparatus is described which is simple and has a minimum number of moving parts. The apparatus comprises two spring supporting

members mounted adjacent one another on a mounting plate and each of which has an open ended spring receiving and locating bore. The first of the spring supporting members is mounted for rotation between a spring receiving and loop forming position and a spring transfer position in which its bore is coaxially aligned with the bore of the second supporting member, and the second member is rigidly mounted on the plate. Loop forming



mechanism associated with each of the spring supporting members at an open end thereof includes an anvil for engaging a spring within the bore and maintaining it in position at the end of the bore during formation of a loop on its end. The anvil of the loop forming mechanism associated with the second spring supporting member is retractable from in front of the open end of the bore to permit a spring to be ejected through such end after a loop is formed on it.

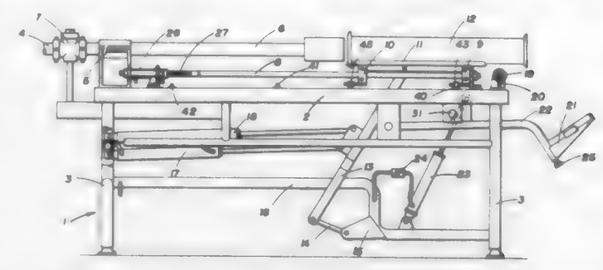
3,373,776
FILLER VALVE FOR LIQUID GAS LIGHTERS
Kyujiro Kajita, 108 Kobinata Suido-cho, Bunkyo-ku, Tokyo, Japan
Filed July 6, 1965, Ser. No. 469,694
Claims priority, application Japan, Oct. 12, 1964, 39/57,770
6 Claims. (Cl. 141—4)



A filler valve used with liquid gas lighters having an outer tubular section and a spring mounted inner tubular section. A porous member is mounted adjacent the opening through which fuel is fed from a fuel supply so as to absorb some of the escaping liquid and thereby cool the area and casing by means of the process of evaporation of the liquid from the porous material.

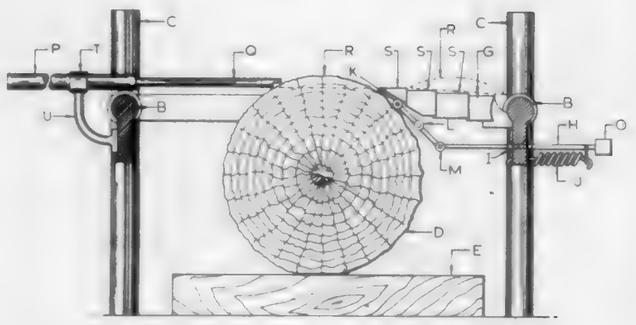
3,373,777
FOOD MOLD LOADER
Richard A. Hawley, Oakland, Calif., assignor to Meat Packers Equipment Co., Oakland, Calif., a corporation of California
Filed Nov. 12, 1965, Ser. No. 507,509
8 Claims. (Cl. 141—263)

An apparatus—for filling a meat loaf mold—which includes a stuffing horn, a mold-supporting carriage, and means mounting the carriage for movement toward and



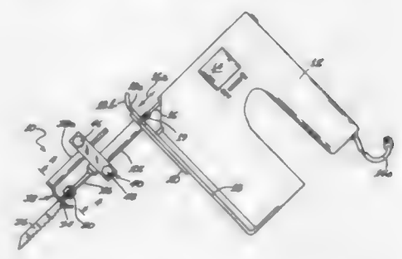
away from the stuffing horn; there being a power unit operative to so move the carriage.

3,373,778
SAWMILL CAPABLE OF HIGH PRODUCTION AND LUMBER QUALITY CONTROL OPERABLE BY ONE MAN
Charles E. McManama, Latah County, Idaho (Rte. 2, Box 81, Potlatch, Idaho 83855)
Filed July 6, 1965 Ser. No. 469,737
5 Claims. (Cl. 143—19)



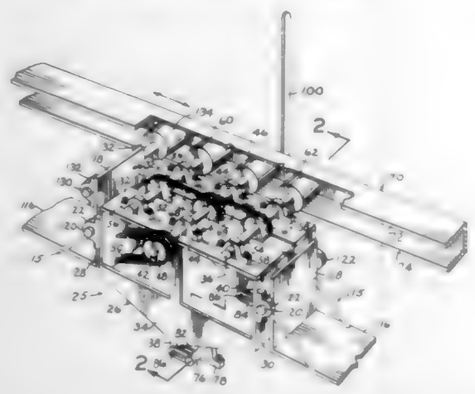
A sawmill combination using a horizontal traversing bandsaw as the head saw traveling on rails over a log to saw boards from the log and a mechanism to eject the board therefrom, with known sawmill components.

3,373,779
SABER SAW EXTENSION
Irvin M. Taft, 928 Euclid, St. Paul, Minn. 55106
Filed Jan. 21, 1966, Ser. No. 522,152
3 Claims. (Cl. 143—68)



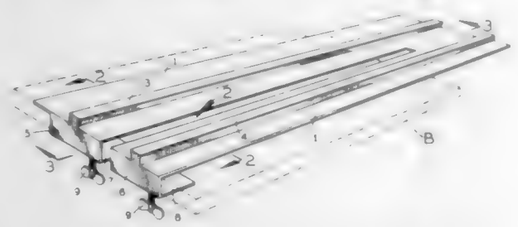
An attachment extension for a saber saw which increases the reach of the saber saw blade without increasing the length of the blade itself. The extension includes a plate attached to the base plate of the saw with an integral tubular member extending away from the saw slidably supporting an extension shaft. The extension shaft is coupled to the saber saw shaft at one end and is provided with saw blade attaching means at the distal end. An additional foot is attached to the end of the tubular member.

3,373,780
SAWMILL FEED DEVICE
Herbert A. Lowther, Box 172, Talihina, Okla. 74571
Filed Jan. 19, 1966, Ser. No. 521,565
6 Claims. (Cl. 143—105)



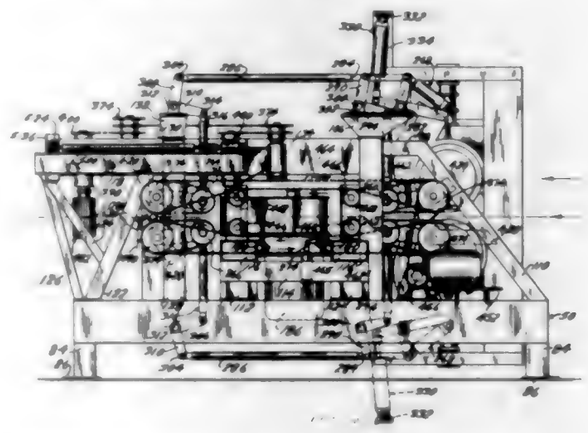
1. A feed mechanism for a sawmill husk having a carriage mounted for horizontal to and fro movement above a support, comprising: friction plate means connected to the depending surface of said carriage; a frame positioned below said carriage; shaft means extending transversely of said frame; friction rollers at one end of said shaft means and releasably contacting said friction plate means; means for rotating said shaft means; and lifting means for raising and lowering said frame.

3,373,781
GUIDE FOR PORTABLE SAWS
Sidney Grosswald, Miami, Fla.
(1740 S. Glades Drive, North Miami Beach, Fla. 33162)
Filed May 13, 1966, Ser. No. 549,850
3 Claims. (Cl. 143—167)



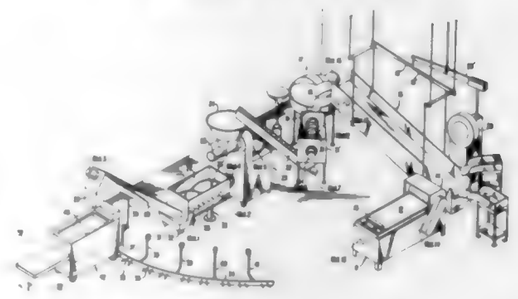
1. A guide for a power saw means for making a straight cut through a board comprising a main base plate having a planar bottom surface,
- a pair of parallel spaced gibs on said plate along the length thereof integral therewith positioned in parallel spaced relation with said bottom surface,
- said plate having an open slot from one side thereof parallel and between said gibs a predetermined distance through said plate from the said one side,
- an integral clamp means on each side of said slot positioned at the said one end of said plate extending downward a predetermined distance from said bottom surface having coplanar inner register surfaces at a right angle to said bottom surface and said slot,
- each of said clamp means having an integral inward extending portion in spaced relation from said bottom surface including a threaded hole therein normal thereto,
- a thumb screw threaded into each of said holes for independently engaging the under side of said board for holding same when one edge thereof is positioned against said register surfaces and the upper side of said board is positioned against said bottom surface,
- a power saw means including a guide shoe slidably engaged with said gibs for reciprocating movement along said gibs with the driven blade of said saw means extending downward through said slot whereby a board clamped against said bottom surface will be straight sawed when said saw means is operated and reciprocated along said gibs.

3,373,782
SIDE, TOP AND BOTTOM CHIPPERS
Lionel Pease, Seattle, Wash., assignor to Mill Equipment, Inc., Seattle, Wash., a corporation of Washington
Filed Oct. 20, 1964, Ser. No. 405,101
40 Claims. (Cl. 144—326)



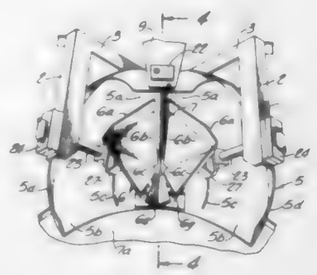
1. A chipping machine, said machine comprising:
(a) a first chipper and a second chipper;
(b) said first chipper chipping in a first plane;
(c) said second chipper chipping in a second plane;
(d) said first and second planes being substantially parallel;
(e) means to vary the distance between the first chipper and the second chipper;
(f) a first feed roll juxtapositioned to the first chipper;
(g) a second feed roll juxtapositioned to the second chipper; and
(h) means to simultaneously vary the distance between the first feed roll and the second feed roll as the distance between the first chipper and the second chipper is varied.

3,373,783
AUTOMATED FOOD PROCESSING LINE
Eugene C. Spangler, Silver Spring, Md., assignor to Marriott Corporation, a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,526
10 Claims. (Cl. 146—1)



1. A food processing and distributing system for supplying a plurality of product stations in turn, comprising
scaling conveyor means for depositing measured quantities of constituents of a batch in a mixer,
mechanical means for cutting and mixing said constituents and ejecting the batch,
means for storing said batch and conveying the same to a grinder at a rate independent of the ejecting rate,
means for grinding said constituents,
storage means for receiving the ground product,
a plurality of product-using stations each having a receiving hopper,
automatic delivery means for delivering said stored product to a said hopper in response to a demand signal therefrom,
means including first and second probes in each said hopper for measuring maximum and minimum quantities of product and for generating said demand signal when the hopper content is below a minimum measured by said first probe,
electrical interlock means for maintaining said demand signal, when generated, only until said content reaches a maximum measured by said second probe,
motor means operative in response to said demand signal from a said hopper for causing said delivery means to approach thereto,
automatic circuit means for causing said delivery means to adjust to said hoppers in turn when more than one generates a demand signal and for limiting the delivery of product to the duration of a demand signal.

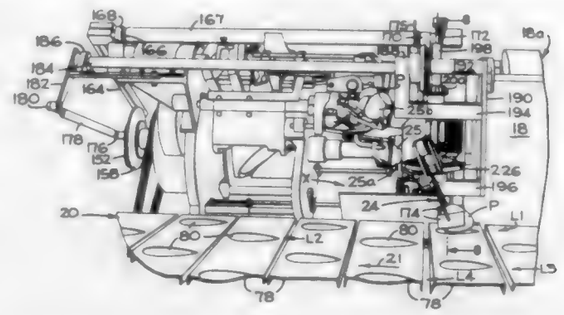
3.373.784
FRUIT CUTTING AND FEEDING APPARATUS
Franklin K. Holbrook, Whittier, Calif., assignor to Brown International Corporation, a corporation of California
Filed Oct. 23, 1965, Ser. No. 503,978
10 Claims. (Cl. 146—3)



Two cup segments cooperate at starting positions thereof to receive and confine a piece of fruit that is to be cut into halves. The two cup segments are mounted respectively on two rotary support structures that are tangential to a common plane and are rotated synchronously to move the cup segments in orbits out of their starting positions and back to their starting positions. A fixed knife blade is positioned in the tangential plane to cut the piece of fruit in half as the cup segments leave their initial positions. Two guide means concentric to the two axes of rotation of the support structures cooperate with the cup segments to captivate and transport the cup segments to a common discharge zone.

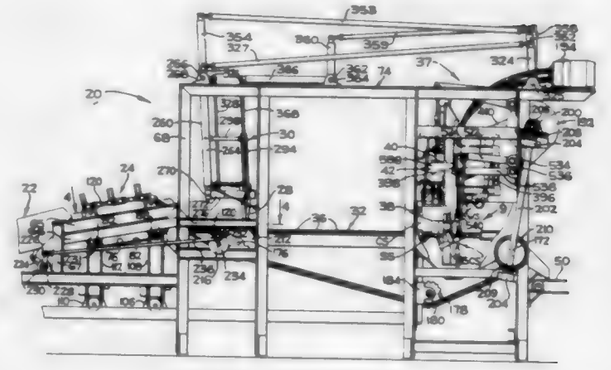
3,373,785
FRUIT PROCESSING BATTERY
Gerald R. Anderson, Campbell, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 6, 1966, Ser. No. 555,400
15 Claims. (Cl. 146—43)

14. A fruit processing battery comprising a row of spaced fruit processing machines, a fruit supply conveyor mounted alongside said processing machines, said conveyor being provided with fruit supporting pockets for each of said processing machines, each of said machines having a feed cup intermittently positioned at a feeding station adjacent said conveyor, fruit transfer means individual to each of said processing machines for gripping and conveying fruit from selected fruit pockets between



a pickup position in which a fruit pocket lies upstream of said feed cup to a fruit discharge position in which the fruit lies above said feed cup, and means for continuously driving said conveyor, said transfer means and said processing machines in synchronism.

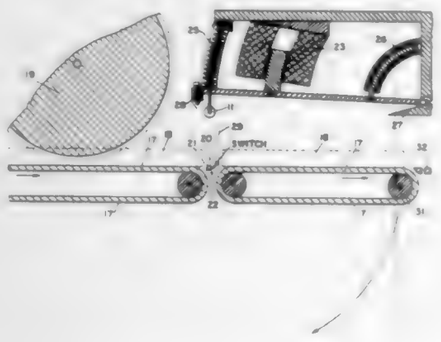
3,373,786
FRUIT SEED-CELLING MACHINE HAVING AUTOMATIC DEPTH CONTROL MEANS FOR CUTTER
Gerald R. Anderson, Campbell, and Sherman H. Creed and John T. Parker, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif, a corporation of Delaware
Original application Mar. 2, 1964, Ser. No. 348,485, now Patent No. 3,310,084, dated Mar. 21, 1967. Divided and this application Nov. 16, 1966, Ser. No. 606,486
6 Claims. (Cl. 146—52)



1. In a machine for processing apples or the like, the combination of means defining a pocket with an aperture therein, and supporting an apple on one of its flat ends, said apple having the stem material removed therefrom and having a cylindrical cavity therein, a vertically movable carrier disposed above said pocket, a coring unit carried by said carrier, a continuously rotating cutter on said coring unit rotating about an axis concentric with the axis of said aperture, said cutter having a cutting edge movable in a cylindrical path, means for swinging said cutter from a retracted position wherein said cutting edge moves in a cylindrical path having a diameter slightly less than that of said cylindrical stem cavity to an extended position wherein said cutting edge moves in a cylindrical path having a diameter in excess of the diameter of the stem cavity to sever the seed cell from the apple, said cutter having a transverse section with a diameter slightly less than that of said cylindrical stem cavity and an area in excess of that of a semi-cylindrical segment of said diameter, and means for lowering said carrier to cause said cutter to locate and enter the stem cavity of the apple

when said cutter is in the retracted position for the purpose of recentering the apple prior to swinging the cutter to its extended position.

3,373,787
ASPARAGUS CUTTER
Nicolaos Basil Tanos, 1731 R St. NW., Washington, D.C. 20009
Filed Mar. 17, 1967, Ser. No. 623,973
6 Claims. (Cl. 146—81)

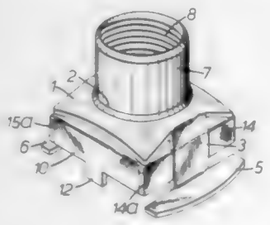


A machine for separating the edible from the fibrous part of an asparagus stalk by pressing along the stalk a probe for finding or locating the point at which the stalk starts yielding considerably under a predetermined amount of pressure and then severing the stalk at said point.

3,373,788
METHOD OF SEPARATING EDIBLE FROM FIBROUS PORTION OF ASPARAGUS
Nicolaos Basil Tanos, 1731 R St. NW., Washington, D.C. 20009
No Drawing. Original application Mar. 17, 1967, Ser. No. 623,973. Divided and this application Sept. 12, 1967, Ser. No. 667,057
4 Claims. (Cl. 146—241)

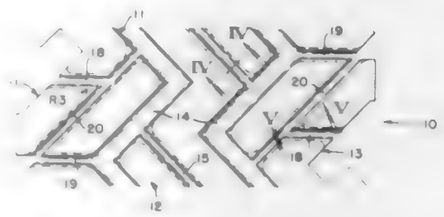
A method for finding the extent of the edible part of an asparagus stalk by pressing a probe against and along the stalk with a predetermined amount of pressure for locating the point of considerable change in yielding of the surface of the stalk, which point is between the edible and the fibrous part of the stalk, and at or near which point the stalk may be severed for separating the edible from the fibrous part thereof.

3,373,789
SHEET METAL NUT WITH RESILIENT CAGE
Leslie Parkin, Bobbers Mill, and Sydney Alan Andrews, Stapleford, England, assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed June 29, 1966, Ser. No. 561,568
Claims priority, application Great Britain, Aug. 24, 1965, 36,303/65
1 Claim. (Cl. 151—41.75)



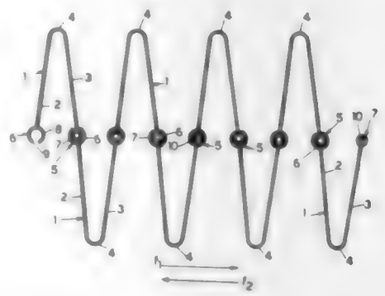
A two-piece cage nut adapted for rapid installation in an apertured support. The cage includes an apertured base, opposed flexible side walls extending normal to the edges of the base and adapted to be snapped through an aperture in the support and an arm extending laterally outwardly from the end of each side wall for engaging the face of a support adjacent an aperture therein. A nut disposed within the cage includes a head underlying the base of the cage, a threaded barrel extending through the aperture in the base of the cage and opposed generally rectangular walls extending from the edges of the head. Certain of the walls of the nut define a pair of opposed gaps in which the side walls of the cage are nested to prevent inward flexing of the latter for passage thereof through an aperture in a support. The nut also includes a pair of opposed lugs extending from other walls thereof, which lugs are adapted to engage the edges of a support aperture to limit rotation of the nut with respect to the support.

3,373,790
PNEUMATIC TIRE TREAD
James F. Newman, St. Clair Shores, and John W. Taylor, Grosse Pointe Farms, Mich., assignors to Uniroyal, Inc., a corporation of New Jersey
Filed Sept. 14, 1965, Ser. No. 487,111
3 Claims. (Cl. 152—209)



Groove cracking and lug tearing where lug elements are divided by narrow grooves may be avoided by undercutting the leading edges of the lug elements adjacent the narrow grooves.

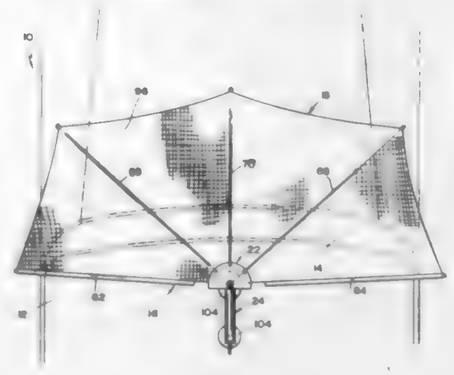
3,373,791
FLEXIBLE CURTAIN FOR MOVABLE PARTITIONS OR WALLS AND PROCESS AND DEVICE RELATIVE THERETO
Franco Milani, Fagnano Olona, Italy, assignor to Milani Resine S.p.A., Fagnano Olona, Varese, Italy, a company of Italy
Filed Nov. 24, 1964, Ser. No. 413,416
Claims priority, application Italy, Dec. 2, 1963, Patent 709,394
3 Claims. (Cl. 160—181)



1. A foldable curtain comprising a plurality of successive contiguous elements, each said element being substantially alike, said element comprising first and second rigid members longitudinally joined by an intermediate flexible third member, complementary engagement means on the terminal ends of said first and second members for mutual substantially permanent engagement of one element with its adjacent element, said terminal ends comprising enlarged extensions of constant cross sections, one of said extensions being substantially channel shaped for slidably receiving therein a complementary substantially tubular extension of the adjacent element, and suspension

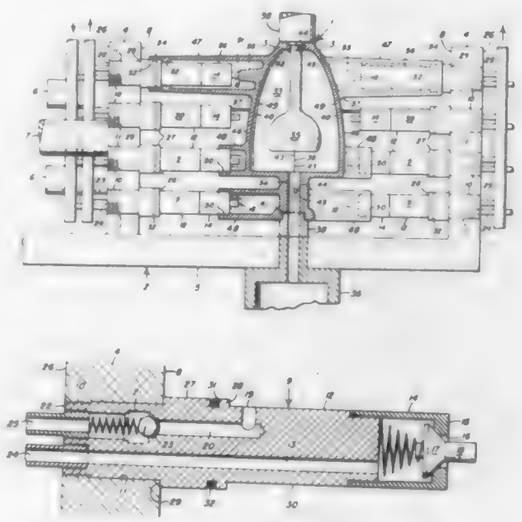
means at one transverse end of each of said elements, said suspension means comprising means for engaging with an inner portion of said tubular extension.

3,373,792
AUTOMOBILE RAIN VISOR
Alcide Lessard, 545 Scituate Ave., Cranston, R.I. 02910
Filed Sept. 13, 1965, Ser. No. 486,761
5 Claims. (Cl. 160—368)



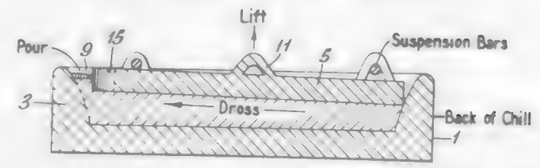
An automobile rain visor for attachment to the roof of an automobile having a flexible waterproof sheet that is moved to and from an extended position by an operating mechanism, the operating mechanism including a handle that is pivotally moved and that cooperates with a spring to effect the movement of the sheet to and from the extended position.

3,373,793
APPARATUS FOR SELECTIVELY COOLING METAL MOLDS
Loren W. Smith, Eggertsville, N.Y., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Continuation-in-part of application Ser. No. 444,459, Mar. 31, 1965. This application May 2, 1966, Ser. No. 546,992
10 Claims. (Cl. 164—341)



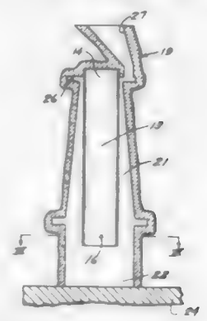
Casting apparatus having relatively movable mold holders and expendable metal molds, a number of laterally spaced nozzles in an arrangement on each holder and sockets on the back of each mold each for releasably seating a nozzle, the socket on each mold being predetermined in number and relation relative to the nozzles on the related holder for selectively seating certain thereof and cooperating with the certain nozzles for holding the mold on the holder and cooling an area of the mold determined by the relation during the casting operation.

3,373,794
FERROALLOY CASTING PROCESS
Richard A. Crago, Grand Island, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed Feb. 1, 1966, Ser. No. 524,139
2 Claims. (Cl. 164—127)



1. A process for casting magnesium ferrosilicon which comprises preparing molten magnesium ferrosilicon, pouring the molten magnesium ferrosilicon into a chill, providing a metal member in contact with the upper surface of the molten magnesium ferrosilicon in the chill, said metal member substantially covering the upper surface of the molten magnesium ferrosilicon, causing the molten magnesium ferrosilicon to solidify in the chill in contact with said metal member, removing the metal member after solidification of the magnesium ferrosilicon and removing the solidified magnesium ferrosilicon from the chill.

3,373,795
GATING OF UNSHROUDED AIRFOILS TO PERMIT DIRECTIONAL SOLIDIFICATION
Frank J. Hein, East Rochester, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 10, 1965, Ser. No. 478,710
2 Claims. (Cl. 164—359)

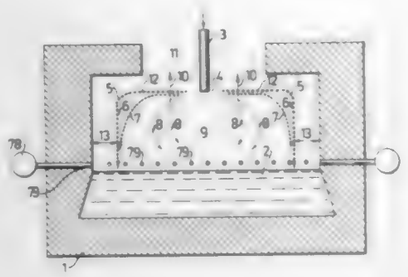


Mold assembly for producing a casting having a directional grain orientation extending from a relatively massive base to a tip of relatively small cross-section, the mold having a reservoir cavity above the tip-forming end of the casting cavity into which molten metal is introduced, the reservoir improving the feeding of molten metal into the casting cavity.

3,373,796
METHOD AND MEANS FOR COOLING A COMBUSTION CHAMBER BY MEANS OF A POWDERLIKE MATERIAL
Enn Vallak, 82 Rte. de Florissant, Geneva, Switzerland, and Sven Eketorp, Bromma, Sweden; said Eketorp assignor to said Vallak
Filed Apr. 25, 1966, Ser. No. 544,868
Claims priority, application Sweden, Apr. 23, 1965, 5,369/65
22 Claims. (Cl. 165—1)

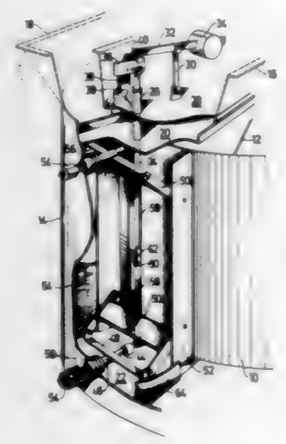
1. A method for cooling of a combustion chamber by means of powdery material with various grain sizes which in the form of at least one curtain is supplied between a wall of the combustion chamber and a high temperature

zone therein, said method being characterized in that the coarse particles of said powder material are mainly sup-



plied outside the fine particles in relation to the central part of the high temperature zone.

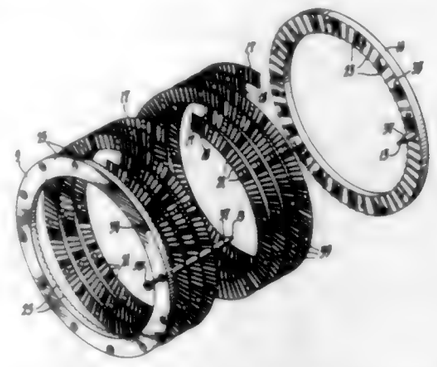
3,373,797
REGENERATIVE HEAT EXCHANGER
Ake Lennart Nyberg, Nacka, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Nov. 29, 1966, Ser. No. 597,586
Claims priority, application Great Britain, Nov. 29, 1965, 50,526/65
10 Claims. (Cl. 165—9)



Apparatus for use with rotary regenerative heat exchangers having sector plates and axial sealing means which provides for sudden thermal deformations of the rotor which can cause jamming between the adjacent surfaces of the rotor, the sealing means and the sector plates by providing a single yielding connection interconnecting the sector plates and the adjacent sealing means at each end of the rotor which transmits motion between the sector plates and the adjacent sealing means so that the movement of the latter in response to a deformation brings about a corresponding movement of the former, thus avoiding contact between the two.

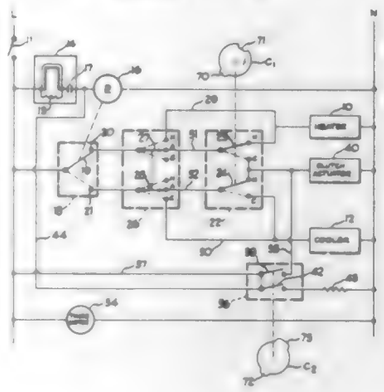
3,373,798
REGENERATOR MATRIX
Earl R. Brummett, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 19, 1965, Ser. No. 508,711
16 Claims. (Cl. 165—10)

A radial-flow rotary regenerator matrix has a core made by coiling edgewise one or more strips having more or less arcuate extent, having a finely corrugated surface to space the sheet to allow fluid flow, and having radial corrugations which taper so as to effectuate the curvature



of the strip and interfit to block fluid flow circumferentially of the matrix.

3,373,799
AIR CONDITIONING AND HEATING CONTROL WITH AUTOMATIC CHANGE-OVER
Alwin B. Newton, Spring Garden Township, York County, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 14, 1966, Ser. No. 593,928
10 Claims. (Cl. 165—12)

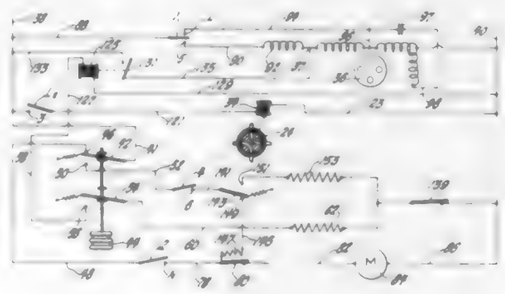


1. A control system for an air conditioning unit of the type including a heater and a cooler for supplying conditioned air to a controlled space, said system comprising a thermostat sensing temperature of air in said controlled space; a first switch actuated by said thermostat; a second switch selectively placing said first switch over the exclusive control of said heater and said cooler; a timer including switch actuating means for said second switch, a continuously driven motor and a clutch interposed between said motor and said switch actuating means, said switch actuating means being adapted to shift said second switch from a first position whereby the heater is under exclusive control of said first switch and a second position wherein said cooler is under the exclusive control of said first switch; and clutch actuating means operated by said second switch for engaging said clutch to effect a driving connection between said motor and said switch actuating means during periods when neither said heater nor said cooler is energized.

3,373,800
CONTROL FOR HEAT PUMP
Donald C. Ferdelman, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 22, 1966, Ser. No. 581,249
5 Claims. (Cl. 165—29)

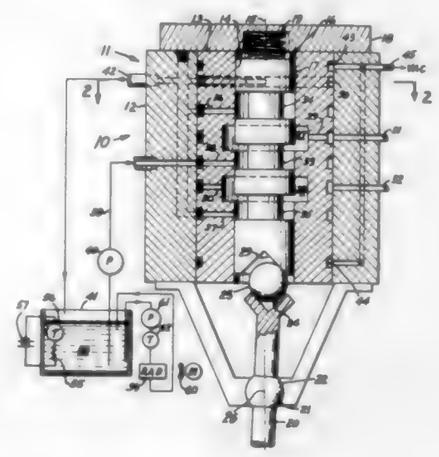
1. A reverse cycle refrigerating and control system including indoor and outdoor heat transfer units, a motor

compressor unit, a reversing valve for changing the refrigerant connection between the motor compressor unit and the indoor and outdoor heat transfer units, flow control means for controlling refrigerant flow between said indoor and outdoor heat transfer units, a double throw thermostatic switch means having a movable contact terminal and two normally stationary contact terminals, a solenoid for operating said reversing valve to reversing position, a supply conductor connected to the movable contact terminal of said thermostatic switch, a second supply conductor connected to said motor compressor unit, a first selector switch connecting one of the station-



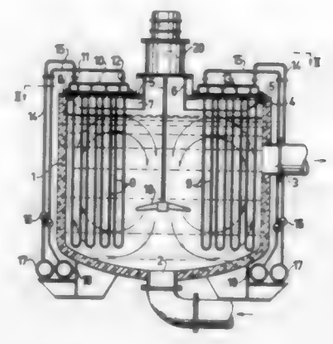
ary contact terminals with said motor compressor unit, a double throw heat changeover switch having a movable contact terminal and two normally stationary contact terminals, a second selector switch connecting another of said stationary terminals of said thermostatic switch means with the movable contact terminal of said changeover switch, conductor means connecting one of the stationary terminals of said changeover switch with said motor compressor unit, a third selector switch and conductor means connecting said solenoid with said first and second supply conductors, and an electric heater connected between a second stationary terminal of said changeover switch and said second supply conductor.

3,373,801
TEMPERATURE REGULATION OF TRACER VALVES
Paul J. Weaver, Pasadena, Calif., assignor to True-Trace Corporation, El Monte, Calif., a corporation of Connecticut
Filed Dec. 10, 1965, Ser. No. 512,879
7 Claims. (Cl. 165—40)



A tracer valve including a spool passage having grooves and ports which control the flow of hydraulic fluid from a power supply to motors and exhaust the fluid to a supply. A reservoir collects the hydraulic fluid and includes temperature modifying means to maintain the temperature of the fluid discharged from the reservoir above ambient.

3,373,802
HEAT EXCHANGER WITH REMOVABLE TUBE GROUPS OF DECREASING FLOW AREA
Johan Elof Wiklund and Magne Lennart Månsson, Halsingborg, Sweden, assignors to Reymersholms Gamla Industri Aktiebolag, Halsingborg, Sweden, a company of Sweden
Filed Dec. 3, 1965, Ser. No. 511,418
Claims priority, application Sweden, Dec. 7, 1964, 14,791/64
10 Claims. (Cl. 165—74)



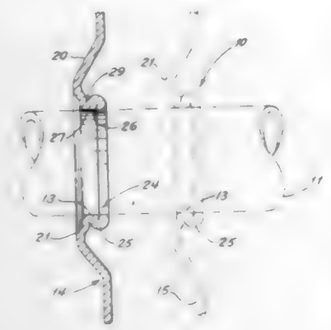
A heat exchanger for passing a heated liquid in indirect heat transfer relationship with a coolant fluid and comprised of a container having an opening at its upper end closed by a closure member. The heated liquid is disposed within the container and has a liquid level spaced below the closure member. Partition means in combination with the closure member form a multiplicity of fluid chambers at the upper end of the container. The fluid chambers are positioned in a number of radially arranged groups and a plurality of U-shaped seamless tubes extend downwardly from the chambers into the body of liquid.

Each tube has its inlet connected to one fluid chamber and its outlet connected to the radially inner adjacent fluid chamber within the same group. The cross sectional area of the tubes interconnecting adjacent fluid chambers within the same group increases radially outwardly from the innermost pair of adjacent fluid chambers. The partition means and the closure member are arranged whereby individual groups of tubes can be removed from the container and replaced by another group with a minimum of effort and loss time.

3,373,803
HEAT TRANSFER ELEMENT
Richard Steinberg, Babylon, Isidore Turinsky, Flushing, and Jose I. Vasquez, Jamaica, N.Y., assignors to Slant/Fin Corporation, Richmond Hill, N.Y., a corporation of New York
Filed June 23, 1965, Ser. No. 466,483
8 Claims. (Cl. 165—182)

The invention provides a novel improved heat exchanger, including a novel heat transfer fin, and the combination of the fin or a plurality of such fins with a fluid conducting conduit upon which they are mounted. A novel method of making the fin is also provided.

The fin incorporates novel tabs struck therefrom to space it from the next adjacent fin mounted on said conduit, and a novel central collar integral with the stock



of the fin which is adapted compressively to engage the outer surface of the fluid conducting conduit upon which the fin is to be mounted.

3,373,804
HEAVY OIL RECOVERY
Eugene D. Glass, Tulsa, and Colonel J. Russell, Jr., Bartlesville, Okla., assignors to Cities Service Oil Company, a corporation of Delaware
No Drawing. Filed Nov. 19, 1964, Ser. No. 412,347
4 Claims. (Cl. 166—2)

1. A method for removing a high-viscosity oil from a subterranean reservoir penetrated by at least two spaced wells comprising:

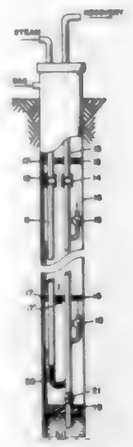
(a) injecting a mixture of normally gaseous oil soluble and oil insoluble components, said mixture comprising from about 10% to about 90% of normally gaseous oil soluble components, into the reservoir through one of said wells until a bank of oil in the vicinity of that well becomes saturated with said normally gaseous, oil soluble component, thus reducing the viscosity of the oil in that bank, the normally gaseous, oil insoluble component travelling through said reservoir in the direction of the offset well, the injection pressure being in excess of the bubble point of the oil in the reservoir so that the soluble component may dissolve in the oil and likewise sufficiently in excess of the reservoir pressure so as to enable a pressure gradient to be maintained between the injection well and the offset well, the temperature of the normally gaseous oil soluble and insoluble components injected being that obtained during compression to injection pressure;

(b) subsequently injecting said mixture of normally gaseous oil soluble and insoluble components into the reservoir through the offset well so as to saturate a bank of oil in the vicinity of said offset well, thereby reducing the viscosity of the oil in that bank, the normally gaseous oil insoluble component travelling through said reservoir and driving the previously formed bank of reduced viscosity oil in the vicinity of the original injection well into that well-bore;

(c) reversing the direction of gas flow through the reservoir whenever the production rate decreases so as to indicate that the bank of reduced viscosity oil in the vicinity of the production well has been depleted,

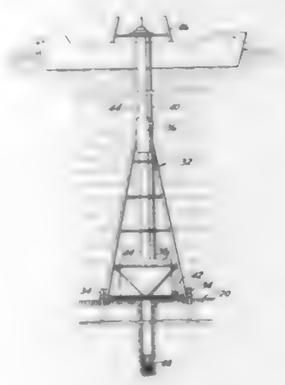
whereby the injection of the mixture of normally gaseous oil soluble and insoluble components serves to reduce the viscosity of the oil in the vicinity of the well then used as an injection well while simultaneously providing the driving force to remove reduced viscosity or oil at an efficient production rate from the offset well then employed as a production well.

3,373,805
STEAM LIFTING OF HEAVY CRUDES
Thomas C. Boberg, Houston, Tex., and Roe Clyde Allen, Jr., Princeton, N.J., assignors to Esso Production Research Company, a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,809
11 Claims. (Cl. 166—2)



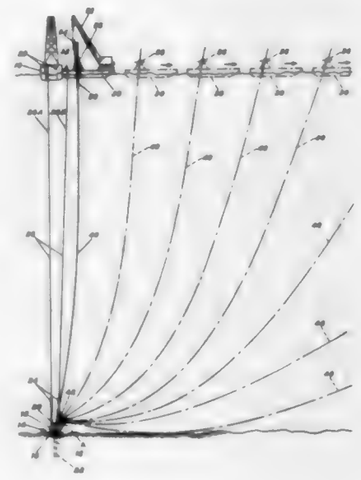
A combined gas lift-steam lift assembly and method for producing petroleum wherein the flow of petroleum is initiated by lifting the petroleum with natural gas and steam is injected into the production tubing to continue and increase the flow of petroleum.

3,373,806
APPARATUS AND METHOD FOR DRILLING WELLS
Virgil D. Stone, Morgan City, La., assignor to Gulf Oil Corporation, Pittsburgh, Pa.
Filed Apr. 21, 1964, Ser. No. 361,447
18 Claims. (Cl. 166—.5)



1. A method of completing a well below a body of water at least about 50 feet deep comprising forcing a heavy-walled snorkel tube permanently encircling and separate from casing of the well downwardly into the ground below the body of water whereby said snorkel tube is supported by the ground and extends upwardly above the surface of the water, said snorkel tube having a diameter of approximately 40 to 72 inches to permit a workman to descend in the tube to install wellhead connections, pumping water out of the tube, cutting off casing of the well adjacent the bottom of the body of water, installing a wellhead assembly on the upper end of the casing, running a flow line from the wellhead assembly upwardly through the tube to above the surface of the water, and supporting the flow line within the tube for delivery of well fluids above the surface of the water.

3,373,807
UNDERWATER PIPELINE CONNECTING METHOD AND APPARATUS
William Fischer, Fullerton, and William R. Postlewaite, Menlo Park, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed June 6, 1966, Ser. No. 555,322
7 Claims. (Cl. 166—.5)



1. The method of connecting an underwater pipeline to a submerged wellhead from a floating platform above said wellhead, said wellhead having an opening therein communicating with a well bore penetrating earth strata below a body of water, which comprises

(a) connecting flexible guide means from a location adjacent said wellhead to said floating platform,

(b) lowering one end of a pipeline vertically downwardly from said floating platform along said flexible guide means so that the longitudinal axis of said pipeline adjacent said one end thereof is in a vertically disposed position when said one end lends adjacent said wellhead,

(c) retaining support of the other end of said pipeline on said platform during said lowering operation, said one end of pipeline terminating at substantially a right angle with respect to said longitudinal axis,

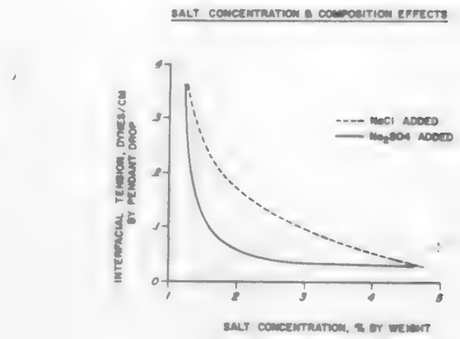
(d) progressively moving said platform on the water surface and continuing the lowering of said pipeline from said platform until said axis of said pipeline is rotated from said vertically disposed position to a generally horizontally disposed position,

(e) securing said pipeline in said horizontally disposed position to place the opening in said pipeline at a known displaced location relative to and substantially parallel with said opening in said wellhead,

(f) then lowering and guiding along flexible guide means a wellhead control assembly adapted to be indexed by said flexible guide means to register with the opening in said wellhead and said one end of said pipeline, and

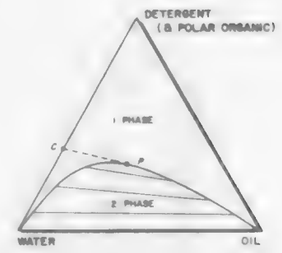
(g) securing said wellhead control assembly to said wellhead and said one end of said pipeline to permit control of fluid flow between said pipeline and said well bore.

3,373,808
OIL RECOVERY PROCESS
John T. Patton, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,362
7 Claims. (Cl. 166—9)


SALT CONCENTRATION & COMPOSITION EFFECTS
INTERFACIAL TENSION, DYNES/CM BY PENDANT DROP
NaCl ADDED
Na2SO4 ADDED
SALT CONCENTRATION, % BY WEIGHT

An improved method for waterflooding a subterranean oil-bearing reservoir wherein the injected flood water contains a sulfonated petroleum surfactant and a quantity of an ionizable sulfate compound sufficient to give an optimum lowering in interfacial tension between the aqueous surfactant solution and the reservoir crude petroleum.

3,373,809
MICROEMULSION OIL RECOVERY PROCESS
Claude E. Cooke, Jr., Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed Nov. 15, 1965, Ser. No. 507,836
10 Claims. (Cl. 166—9)

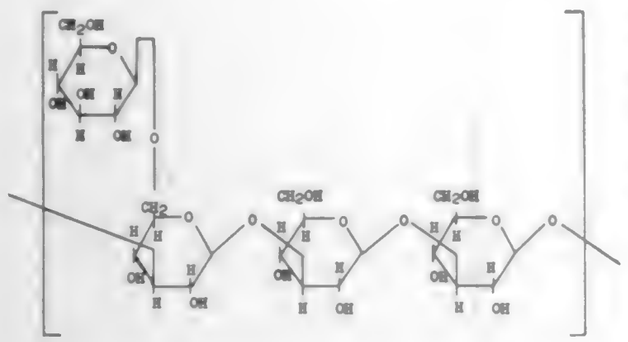


In the recovery of oil from subterranean oil-bearing formations, an aqueous detergent solution is injected for the in situ formation of a water external microemulsion on contacting the reservoir oil. The concentration of surfactant in the injected solution is greater than the minimum miscibility concentration.

3,373,810
WATERFLOOD PROCESS EMPLOYING THICKENED WATER
Sherrod A. Williams, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed June 17, 1966, Ser. No. 558,254
19 Claims. (Cl. 166—9)

1. A method of recovering oil from an oil-containing subterranean formation penetrated by an injection means and a production means which comprises injecting through said injection means and into said formation flooding water containing as a thickening agent a sulfoalkylated poly(glucosylglucan), a sulfoalkylated polysaccharide B–1459, or a mixture thereof;

said sulfoalkylated poly(glucosylglucan) comprising the reaction product formed by reacting poly(glucosylglucan), the glucosylglucan having the structural formula



with a sulfoalkylating agent, and

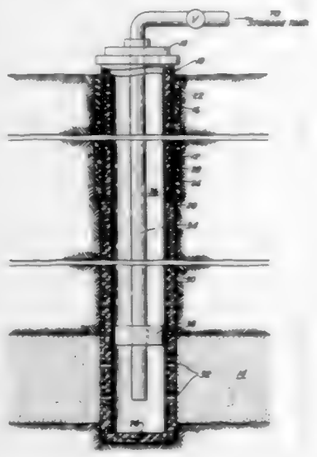
said sulfoalkylated polysaccharide B–1459 comprising the reaction product formed by reacting polysaccharide B–1459, the heteropolysaccharide produced by bacterium *Xanthomonas compestris* NRRL B–1459, United States Department of Agriculture, from glucose with said sulfoalkylating agent.

3,373,811

PROCESS AND APPARATUS FOR HEATING FLUIDS IN A WELL BORE

Fred W. Burtch, Monroeville, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 335,852
20 Claims. (Cl. 166—25)



1. In a well bore penetrating a subsurface rock formation containing crude oil, a method for maintaining the temperature in the well bore above the cloud point of the crude oil comprising running in the well bore two concentric strings of casing to form an annulus in the well bore between said strings of casing, setting a sheath of matrix material in the annulus, said matrix material having substantially uniformly dispersed therethrough particles of a radioactive fission decay product capable of emitting heat at a rate adequate to maintain the temperature in the well bore above the cloud point of the oil.

11. A well for the production of oil containing paraffin comprising a bore hole extending downwardly to a formation containing said oil, a first casing extending from the surface part of the way downwardly to the formation containing said oil, a second casing extending downwardly within the first casing to a level below the lower end of the first casing, at least a portion of the annulus between the first casing and the second casing being filled with cement containing a radioactive fission decay product dispersed substantially uniformly therethrough, said fission decay product being of sufficient concentration to maintain the temperature of the well bore above the cloud point of the oil.

3,373,812

METHOD OF PERMEABLY CONSOLIDATING INCOMPETENT SANDS WITH A HEAT-CURABLE RESIN

Francis M. Smith, Gibsonia, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed July 9, 1965, Ser. No. 470,886
3 Claims. (Cl. 166—25)

An incompetent formation is permeably consolidated by heating with steam, thereafter displacing a heat-curable resin-forming furfuryl alcohol composition into the heated zone, and continuing to displace steam or a gas such as nitrogen, carbon dioxide and methane through the impregnated formation to maintain permeability while the resin is cured.

3,373,813

METHOD FOR PERMEABLY CONSOLIDATING AN INCOMPETENT FORMATION WITH HEAT-CURABLE RESIN

James W. Jennings, Verona, and John F. Muirhead, Jr., Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed July 9, 1965, Ser. No. 470,923
4 Claims. (Cl. 166—25)

Combustibles are burned in an incompetent formation surrounding a well bore to heat the formation, and the combustion step is followed by the injection of a liquid resin-forming material which in turn is followed by the injection of gas to displace a portion of a resin-forming material farther outwardly into the formation. Heat remaining in the formation following the combustion step raises the temperature of the resin-forming liquid to cause resinification. Furfuryl alcohol and partial polymers of furfuryl alcohol are preferred resin-forming materials.

3,373,814

STEAM INJECTION USING STEAM-LOSS INHIBITING MATERIALS

Louis H. Ellers and Charles F. Smith, Tulsa, Okla., and Orlin W. Lyons, Houston, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 14, 1966, Ser. No. 542,471
14 Claims. (Cl. 166—33)

An improved steam in situ treating process which comprises injecting into a geologic formation, either by slug injection followed by steam injection or by injection directly into a stream of steam as it is being transmitted to or being forced into a geologic formation, the following steam diverting material:

(1) Optionally a thickening agent;

(2) A water-sensitive colloidal swelling agent;

(3) A stabilizing agent which impedes or delays the swelling of the swelling agent until it has impinged upon, and to some extent penetrated, the face of at least a section of the formation being treated; and

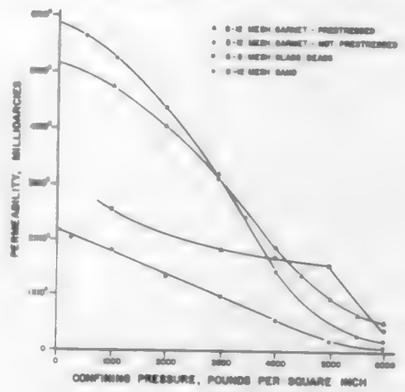
(4) A finely divided particulated substantially water-insoluble, oil-insoluble sealing agent which supplements, or conjointly functions, with the swelling agent of (2) to plug the formation against fluid flow.

3,373,815

FRACTURING OF SUBTERRANEAN FORMATIONS

Othar M. Kiel and Albert L. Kidwell, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware

Filed May 6, 1966, Ser. No. 548,250
10 Claims. (Cl. 166—42)



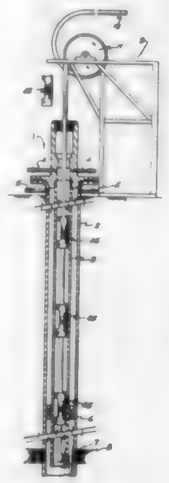
1. In a method for propping open a fracture in a subterranean formation surrounding a wellbore, the improvement which comprises injecting into said fracture a fluid suspension of naturally-occurring individual crystals of a mineral which is essentially inert to the formation fluids and has a Mohs' hardness value of about 6 or greater, said crystals being between about 2½ and about 40 mesh on the U.S. Standard Sieve Series scale in size.

3,373,816

METHOD FOR INJECTOR TUBING GAS LIFT

Chudleigh B. Cochran, Houston, Tex., assignor to Cicero C. Brown, Houston, Tex.

Filed Oct. 11, 1965, Ser. No. 494,686
4 Claims. (Cl. 166—46)



A method of installing gas lift valves and appurtenant tubing in a well. The invention includes a novel method of utilizing injector type tubing unwound from a spool or the like for attachment to and supporting one or more gas lift valves in a well.

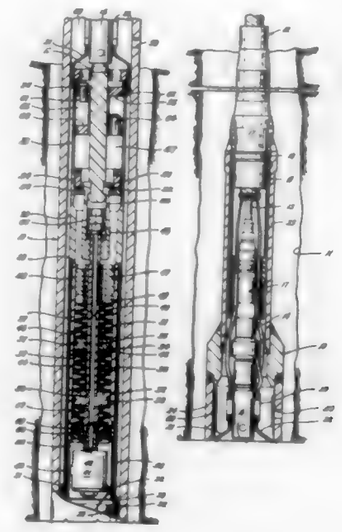
3,373,817

APPARATUS FOR SELECTIVELY RELEASING CABLE-SUSPENDED WELL TOOLS

Walter E. Cubberly, Jr., and Dean F. Saurenman, Houston, Tex., assignors, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Mar. 23, 1966, Ser. No. 536,847
15 Claims. (Cl. 166—65)

1. In sub-surface apparatus adapted for suspension from a cable extending to the surface, means for releasably connecting said apparatus to the cable, comprising: connecting means including a movable member on said apparatus releasably connected to the cable in a first position of said member relative to said apparatus and movable in response to cable tension to a second position relative to said apparatus for disconnection from said cable; and hydraulic means between said movable member and apparatus releasably retaining said movable member in said first position and selectively operable from the surface to release said movable member for movement to said second position.

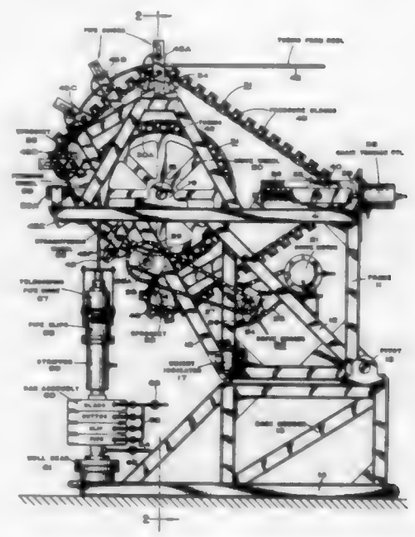


3,373,818

APPARATUS FOR RUNNING PIPE

James L. Rike, New Orleans, La., and Richard C. Babb and Ernest L. Potts, Houston, Tex.; said Potts and said Babb assignors to Brown Oil Tools, Inc., Houston, Tex., a corporation of Texas, and said Rike assignor to Esso Production Research Company

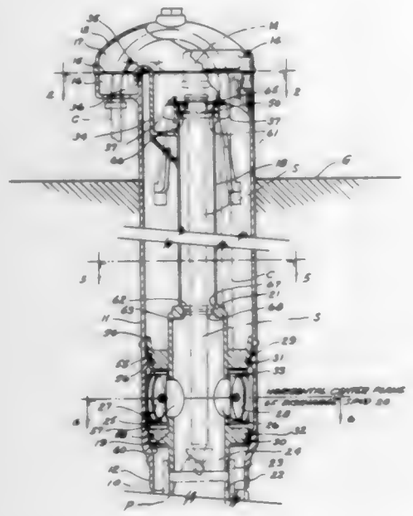
Filed Oct. 20, 1965, Ser. No. 505,305
18 Claims. (Cl. 166—77)



Substantially inflexible pipe is run into a well with apparatus embodying a powered grooved drum and a powered reel for spooling the pipe, a loop of the pipe being held on the grooved drum by a continuous holding means, such as a chain provided with pressure blocks, which is coextensive with and conforms to the pipe loop and allows sufficient force to be exerted on the pipe by the

drum to maintain the pipe on the drum to cause it to part under sufficient tension, the apparatus being provided with guide means for the pipe between the drum and reel and a telescopic guide means for guiding the pipe into the well.

3,373,819
PITLESS WELL UNIT
John Gordon Baker, Evansville, Wis., assignor to Baker Manufacturing Company, Evansville, Wis., a corporation of Wisconsin
Filed May 18, 1965, Ser. No. 456,668
5 Claims. (Cl. 166—88)



A self-contained unit with valved discharge spool. The spool and drop assembly are positioned and held down independently of the cap by means of hook studs and a strap welded to the hold-down pipe which extends from the spool to the top of the case. The case is provided with slots for the stud hooks and a pocket for the orientation strap. A holddown for a meter shaft is provided at the top of the holddown pipe. The spool is designed to provide passage for motor cables, pressure lines, or other auxiliaries into the well outside the valve and discharge chamber of the spool.

3,373,820
APPARATUS FOR DRILLING WITH A GASEOUS DRILLING FLUID
Leon H. Robinson, Jr., Robert H. Friedman, and Max R. Annis, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,194
3 Claims. (Cl. 166—187)

1. Apparatus for injecting fluid into the lower portion of a borehole in the earth comprising:

a tubular drill string section;

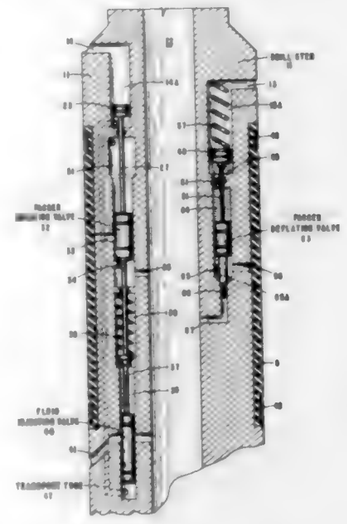
a fluid expansible annular packer affixed to the outer surface of said drill string section, constructed and arranged so that fluid pressure exerted on the inner surface thereof will expand the packer to the walls of the borehole;

first and second fluid passageways in said drill string section connected in parallel between the bore of said drill string section and the exterior of said drill string section under the packer;

a third fluid passageway in the drill string section between the bore and the exterior of the drill string section opening to the exterior of the drill string section beneath the level of said packer;

first valve means positioned in said first passageway and having a portion thereof exposed to borehole pressure around said drill string section in the vicinity of the packer, constructed and arranged to close said first passageway until pressure in said drill string section bore is greater by a first predetermined differential pressure than the borehole pressure above said packer;

second valve means connected to said first valve means and actuated by said first valve means, constructed and arranged to close said third fluid passageway until said first valve means is subjected to pressure in said drill string bore that is greater by a second predetermined differential pressure than the pressure in said borehole above said packer;

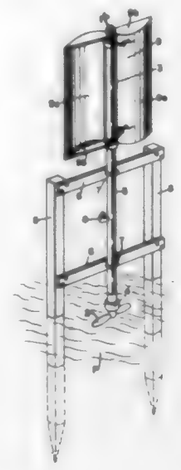


third valve means positioned in said second passageway and having a portion thereof exposed to borehole pressure above said packer, constructed and arranged to close said second passageway until pressure in said drill string section bore is greater by a third predetermined differential pressure than the borehole pressure above said packer, said second predetermined differential pressure being greater than said first predetermined differential pressure, and said third predetermined differential pressure being greater than either of said first and second predetermined differential pressures; and

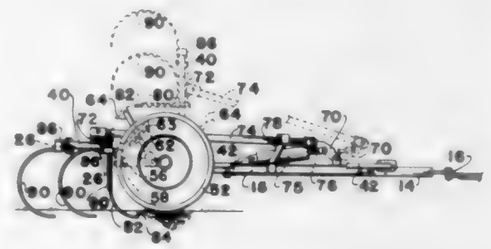
means for holding open said second valve means for at least a predetermined time interval.

3,373,821
POND MILL
Ted O. Sare, Sundance Ranch, Rte. 2, Willard, Mo. 65781
Filed Dec. 17, 1965, Ser. No. 514,645
7 Claims. (Cl. 170—10)

A pond mill for providing an ice-free area in a livestock watering pond disposed in a field exposed to atmospheric weather conditions, comprising a tubular housing; a shaft journaled in said housing and extending above and below the housing; bearings for the shaft at the upper and lower ends of the housing; an impeller on the lower end of the shaft adapted to be submerged below the level of the water in the pond; and a wind-motor secured to the upper portion of the shaft and disposed around the housing for rotating the shaft when wind currents cross the pond, said wind-motor comprising opposed arcuate vanes at opposite sides of the shaft forming an S-shaped rotor exposed to the wind currents over the pond; top and bottom plates connecting the upper and lower ends respectively of the vanes to form a rigid unit, the upper plate being mounted on the upper end of the shaft and the lower plate being journaled on the housing; said rotation of the shaft causing an upward current in the water above the impeller, thereby preventing freezing of the water, and to cause "boiling" up of the water to thaw any ice formation accumulating during windless intervals.

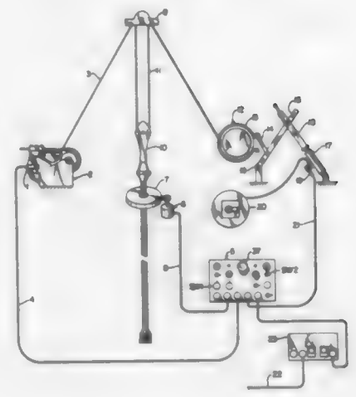


3,373,822
AGRICULTURAL EARTH WORKING IMPLEMENT
Michael C. Hornung, Spearville, Kans. 67876
Filed Feb. 17, 1965, Ser. No. 433,442
2 Claims. (Cl. 172—311)



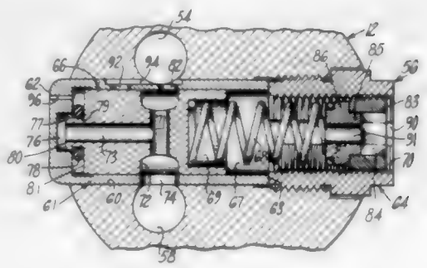
The invention is of a spring tooth farm implement used as a harrow, and having unique means of mounting and supporting the forwardly mounted blades so that they stand up well in use. In utilizing the invention a frame having a beam is employed with the frame being wheel supported for moving same. The beam mounts the working means. These are a row of spring teeth. The spring teeth have a substantially vertically positioned reinforcing member with means for mounting same on the beam. A blade is used which is positioned forward of and in close relationship to the reinforcing member. The blade has means to mount same on the beam in the upper end portion, and the lower portion of the blade in its end portion is pointed and designed for working the soil. The reinforcing member and the blade by its upper end portion are secured on the beam by a clamp. The clamp has a portion positioned on the side of the beam opposite the reinforcing member and blade, and the clamp has mounting means in one end portion which cooperates with that of the reinforcing member and the blade. The clamp has an encircling portion which is disposed about the reinforcing member and the blade. Mounting means such as a bolt and nut are connected to the mounting means of the reinforcing member, blade and clamp to secure the teeth to the beam. As a result the spring teeth are reinforced in use and clamped in position to resist shock and force upon striking objects in the ground.

3,373,823
WELL DRILLING CONTROL SYSTEM
Hal B. Fullerton, Jr., Whittier, Calif., and Richard C. Webb, Broomfield, and Jon E. Benner, Denver, Colo., assignors, by direct and mesne assignments, to Hal B. Fullerton, Jr., and Betty Jane Fullerton, both of Whittier, Calif.
Filed Sept. 20, 1965, Ser. No. 488,530
15 Claims. (Cl. 173—6)



This invention is an automatic control system for controlling the draw works of a rotary well drilling rig. The system comprises means for sensing the rotational speed of the well drilling bit and means for sensing the weight of the bit on the strata being penetrated. The signals relating to speed and pressure are combined to generate a signal related to the product of bit weight times rotational speed. This product is used to control the draw works of the well drilling rig to maintain a constant pressure-rotary speed relation. In addition, means are provided for allowing only a maximum drill pressure regardless of rotary speed. Further, a means is provided for calibrating the system so that it can be utilized with various well drilling rigs.

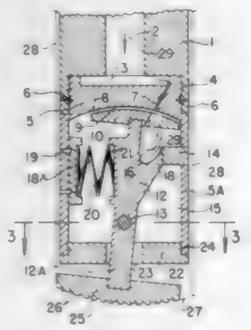
3,373,824
FLUID OPERATED TOOL
Hugh L. Whitehouse, South Euclid, Ohio, assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Nov. 24, 1965, Ser. No. 509,576
27 Claims. (Cl. 173—12)



Device comprising an air motor, a housing having a supply passageway connected to the motor, a bistable on-off pressure sensitive spool valve movable in the passageway for controlling air flow to the motor and biased toward a normally operative position, passage means for

directing back pressure from the motor against the valve urging it into a shut-off position when the motor operating pressure increases beyond a predetermined level, a restriction in the passageway on a supply side of the valve providing an amplified range of air pressures acting on the motor between no load and stall conditions and increasing the sensitivity of the valve, and means responsive to shifting of the valve into a closed position and for maintaining it therein independently of fluid pressure acting on the motor.

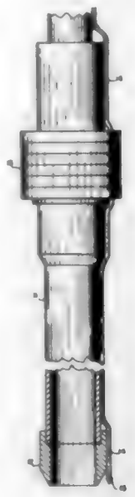
3,373,825
AIR VIBRATION DRILL
Joel B. Guin, 148 E. 48th St., New York, N.Y. 10017
Filed Oct. 14, 1965, Ser. No. 495,848
2 Claims. (Cl. 173—59)



This invention relates to a pneumatic vibration drill designed for light drilling operations on hard material, in which compressed air flows into an equalizing chamber then intermittently through an air channel momentarily aligned once each vibration with an opening through a valve closure into a vibration chamber whose inner walls support a shaft on which is rotatably mounted a vibrating arm rigidly supporting and moving the valve closure, extensions from the arm and from the chamber walls meeting once each vibration and forming an air chamber in which rapidly increasing pressure forces the arm back against an opposing force on the other side, thus simultaneously cutting off the airflow into the chamber and forming an outlet for the air to reduce the pressure and allow the opposing force to return the vibrating arm, close the air chamber again and realign the passages for air into it, the vibrating arm meanwhile moving a drilling means attached rigidly to its lower end. Heavy pneumatic hammers are now used for similar operations, but often large capacity is not needed, or is not available because of the high cost. The present drill can be made of lighter and smaller components, and can be operated with smaller compressors. The total capital outlay is therefore much less. However, very large drills using the same principle can be made, and they can be operated by very high pressure compressors. Due to the much more rapid rate of vibration this drill will cut into rock, concrete, pavement or other hard material more rapidly than regular pneumatic hammers. It has the further advantage that it can be made to drill away the material, while the pneumatic hammer merely splits it or breaks it up.

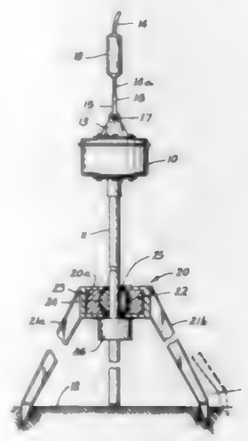
3,373,826
CORING DEVICE
Carey Ingram, 3207 Northampton St. NW., Washington, D.C. 20015
Filed Mar. 31, 1966, Ser. No. 540,152
3 Claims. (Cl. 175—5)

A device for facilitating the recovery of oceanographic bottom sampling instruments. A small tubular means paralleling the instrument has a loose fitting plug in the bottom end that relieves the vacuum effect created when



the instrument is withdrawn from the sediment on the ocean's floor.

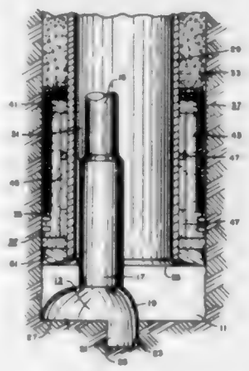
3,373,827
APPARATUS FOR CORING SUBTERRANEAN FORMATIONS UNDER A BODY OF WATER
Jules N. Biron, Durward B. Jones, and Darrell L. Sims, Houston, Tex., assignors, by mesne assignments, to the United States of America as represented by the National Science Foundation
Filed June 14, 1966, Ser. No. 557,531
1 Claim. (Cl. 175—6)



1. Apparatus for coring the subterranean formation lying under the bottom of a body of water, comprising, a coring assembly including an elongated elastic stem at least the lower portion of which is hollow to form a core barrel, a sonic frequency elastic wave generator acoustically coupled to said stem and operable at a longitudinal resonant frequency of the stem to establish a longitudinal elastic standing wave vibration in the stem to cause the lower end thereof to cut through a subterranean formation and collect a core of same in the core barrel, a flexible cable connected to the coring assembly to lower it into position to cut such core and to raise it with the core to the surface, a float attached to the cable immediately above the coring assembly to exert a buoyant force on the coring assembly that is less than the force required to keep the assembly from sinking but sufficient to hold the core barrel substantially

vertical when it moves into engagement with the bottom of a body of water, a stand, means mounting the stand on the stem for longitudinal and limited pivotal movement relative to the stem, and stop means limiting the downward longitudinal movement of the stand relative to the stem, said stand having at least three downwardly extending legs extending below the bottom of the core barrel when the stand is in engagement with the stop means to engage the bottom before the core barrel does and stabilize the core barrel against lateral movement during the coring operation.

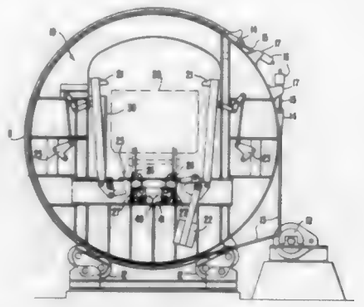
3,373,828
METHOD AND APPARATUS FOR DRILLING
James M. Cleary, Dallas, Tex., assignor to Atlantic Richfield Company, a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 79,740, Dec. 30, 1960. This application Aug. 13, 1964, Ser. No. 389,437
34 Claims. (Cl. 175—65)



8. A method of drilling boreholes in the earth wherein a tubular casing is lowered behind an earth drill while the borehole is being drilled, which method comprises
(a) drilling a borehole larger than the diameter of said casing by progressively advancing said drill downwardly into said earth, said drill being connected to a tubular drill string;
(b) advancing said casing into said borehole being drilled by said drill at a distance above said drill, said casing surrounding said drill string and having an internal diameter larger than said string;
(c) circulating a first drilling fluid adapted to carry drill cuttings to the surface of the earth through the interior of said drill string and the annular space between said drill string; and
(d) maintaining a seal consisting of an unconsolidated, fluid-impermeable mass of particle-form solids between the wall of said borehole and said casing, said seal following the movement of said casing as said casing is advanced into said borehole and preventing the flow of fluids between the annular space between the wall of said borehole and said casing and the interior of said casing.

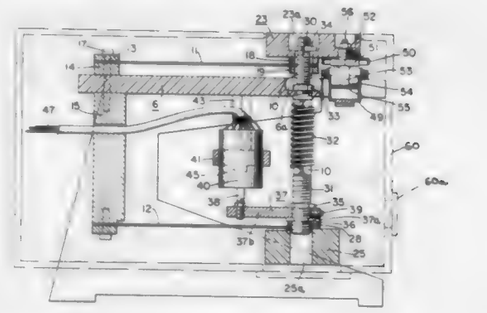
3,373,829
WEIGHING MECHANISM FOR RAILROAD CAR DUMPERS
Robert W. Suman, Hatboro, Pa., and Kenneth E. Thomsen, Northbrook, Ill., assignors to Link-Belt Company, a corporation of Illinois
Filed July 20, 1966, Ser. No. 566,571
16 Claims. (Cl. 177—132)

1. A railroad car dumper comprising
a load receiving table having rails to support and guide a railroad car introduced into and removed from said dumper,
a substantially invertible supporting structure for carrying said table mounted to rotate with the car and table in emptying the contents of the car,



weight transmitting means supporting said load receiving table within said substantially invertible supporting structure to permit limited lateral shifting movement of said table relative to said supporting structure incident inversion of said structure and table to empty a car, said weight transmitting means including a plurality of rotatably mounted rollers each associated with bearing plate means engaged with the periphery of the roller and at least one weighing device disposed in compressive relation with each associated roller and bearing plate means to detect the portion of the weight of said table and the car supported on said table that is transmitted through each associated roller and bearing plate means whereby the total of the detected weights of said weighing devices is indicative of the weight of said table and car supported thereon.

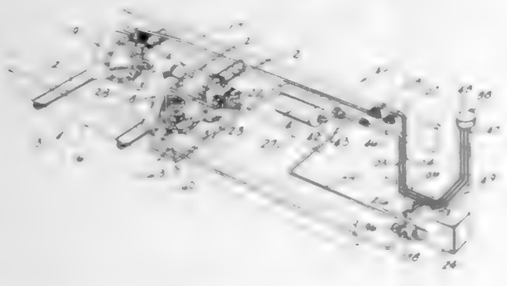
3,373,830
WEIGHING CELL
Edward T. Thomson, Phoenixville, Pa., assignor to Automatic Timing & Controls, Inc., King of Prussia, Pa., a corporation of Pennsylvania
Filed July 27, 1965, Ser. No. 475,151
5 Claims. (Cl. 177—168)



1. A weighing cell comprising:
(a) at least one substantially horizontal flexure plate having one positionally fixed end,
(b) a first horizontal subassembly which receives a load to be weighed connected to the other end of said flexure plate,
(c) a positionally fixed and rigid horizontal member disposed below said flexure plate,
(d) a second horizontal subassembly vertically spaced from said first subassembly, said second subassembly being disposed below said horizontal member and being connected to said first subassembly for movement in unison therewith, said second horizontal subassembly having a vertical portion in which a slot is formed,

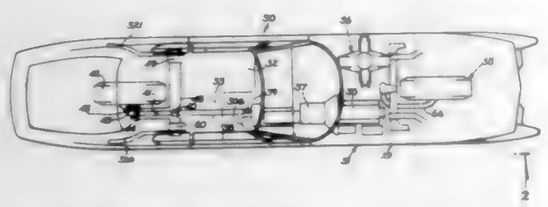
(e) vertical spring means whose upper end is connected to said rigid member,
(f) a vertical spring tensioning member whose upper end is connected to said spring means, said tensioning member being threaded and having a portion thereof which passes through an aperture in said second horizontal subassembly, and
(g) a horizontal nut which engages said (*f*) member and which is disposed in said slot to adjust the vertical position of said (*f*) member when rotated, said nut being accessible for rotation through said slot,
(h) means attached to said (*d*) subassembly for producing relative movement between an inductive member and a core associated therewith.

3,373,831
CONTROL SYSTEM FOR MULTIPLE DRIVE AXLES
Thomas H. Terry, Bay Village, and George L. Moldovan, Willowick, Ohio, assignors to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Dec. 2, 1964, Ser. No. 415,431
12 Claims. (Cl. 180—22)



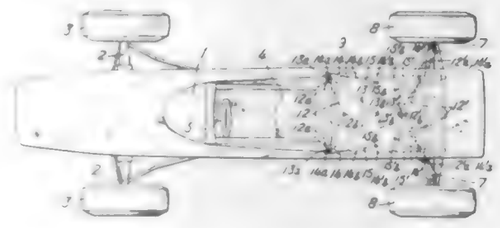
A control system for a multiple axle mechanism comprising a plurality of multispeed drive axles, which are connected by interaxle differential means, the control system having a manually operable selector valve for selectively connecting the shifting means of the drive axles to a source of pressure fluid in order to shift the axles.

3,373,832
GYRO VEHICLE
Thomas O. Summers, Sherman Oaks, Calif. (1536 Fairway Drive, Camarillo, Calif. 93010)
Filed Apr. 19, 1966, Ser. No. 543,708
42 Claims. (Cl. 180—30)



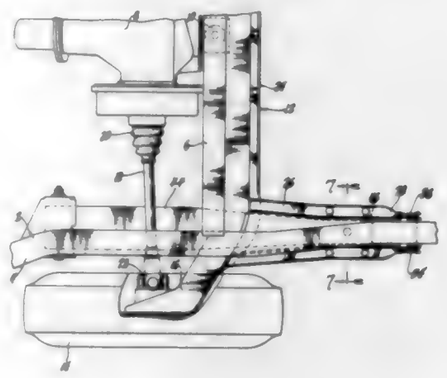
1. A gyro vehicle comprising:
means forward and means rearward of the vehicle center of gravity for supporting the vehicle for translational movement over a support surface;
said vehicle support means including means providing a longitudinal roll axis about which said vehicle has angular freedom;
a gyro gimbal mounted on the vehicle for freedom of angular movement about a gimbal axis;
a gyro rotor rotatably mounted in said gimbal for rotation about a rotor axis, said gimbal axis and said rotor axis being positioned on said vehicle for precession of said gimbal about said gimbal axis in response to torque on said vehicle about said roll axis;
steering means responsive to the position of said gyro gimbal about said gimbal axis for steering one of said vehicle support means; and
means for selectively applying a torque to said gimbal about said gimbal axis to precess said vehicle about said roll axis.

3,373,833
COMPACT MOTOR CAR CONSTRUCTION
Shouichi Sano, Saitama-ken, Japan, assignor to Kabushiki Kaisha Honda Gijutsu Kenkyusho, Saitama-ken, Japan, a corporation of Japan
Filed Feb. 9, 1965, Ser. No. 431,322
Claims priority, application Japan, July 31, 1964, 39/42,971
2 Claims. (Cl. 180—54)



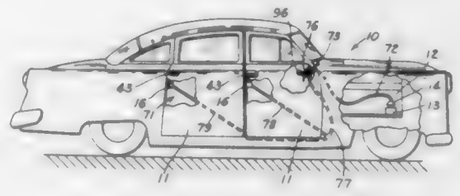
1. In a compact motor car construction, a car body comprising a front car body portion, a rear car body portion spaced longitudinally of the motor car from said front car body portion, a driving engine positioned between said front car body portion and said rear car body portion, a set of V-shaped brackets, extending between said front car body portion and said driving engine and attached at their ends to said front car body portion and at their apex to the top, sides and bottom of said driving engine, and a second set of V-shaped brackets extending between said rear car body portion and said driving engine and attached at their ends to said rear car body portion and at their apex to the top, sides and bottom of said driving engine whereby said front car body portion, rear car body portion, engine and said sets of brackets provide a rigid car body.

3,373,834
DE DION SUSPENSION WITH TORSIONALLY ACTIVE DEAD AXLE AND CANTILEVER SPRING ELASTIC MEDIUM
John W. Rosenkrands, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 15, 1966, Ser. No. 579,619
7 Claims. (Cl. 180—73)



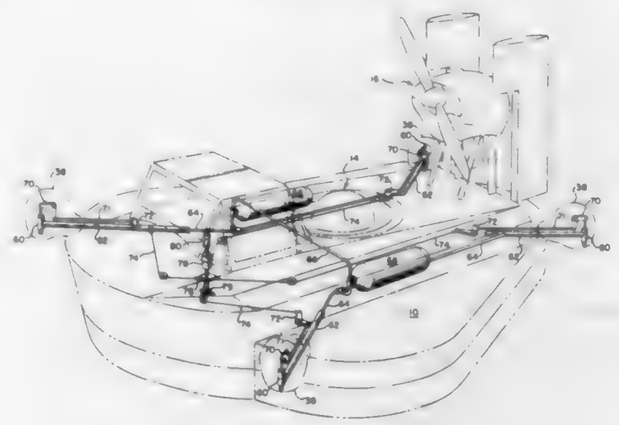
1. In a motor vehicle, a sprung portion, an unsprung portion including driving wheels, a dead axle extending transversely of said vehicle having opposite end portions rotatably supporting said wheels on a common axis of rotation, spaced apart longitudinally extending arm portions formed on said dead axle, shackle means connecting the free ends of said arms on a common axis on said sprung mass, a leaf spring rigidly connected at one end to each arm intermediate its length and extending longitudinally away from said shackles, and pivot means connecting the other end of each spring on a common axis on said sprung mass.

3,373,835
MOTOR VEHICLE DOOR LOCK
Cloyde B. Eatinger, deceased, late of Fort Dodge, Iowa, by Albert Habhab, administrator, Snell Bldg., Fort Dodge, Iowa 50501
Substituted for abandoned application Ser. No. 193,051, Apr. 30, 1962. This application July 29, 1966, Ser. No. 580,556
1 Claim. (Cl. 180—113)



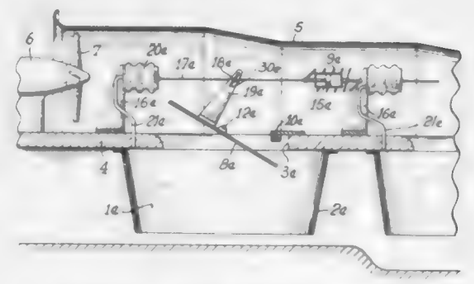
The invention relates to an attachment for a conventional latch for a vehicle door utilizing a source of suction described as the diaphragm assembly of a fuel pump for rendering the usual releasing and locking means of the latch ineffective at all times when the engine is running and, if desired, when the engine is not running. A pivoted locking lug is piston operated by the vacuum line. The vacuum line is controlled by a three way valve having three positions; namely, a first position where atmospheric pressure is applied to the piston, a second position where the atmospheric pressure is sealed off and vacuum is applied to the piston, and a third position where the atmospheric pressure is sealed off and where vacuum is trapped between the piston and valve thus holding the locking lug in locked position.

3,373,836
AIR CUSHION VEHICLE STABILIZING MEANS
John Bradley Chaplin, Williamsville, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Nov. 15, 1965, Ser. No. 507,755
7 Claims. (Cl. 180—118)



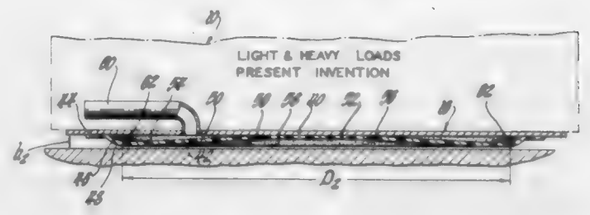
A ground effect machine supported on a cushion of air and provided with steering and propulsion means and additionally with rigidly secured downwardly directed thrust generating engines and control means normally de-activating the engines but effective to actuate same selectively to control movements of the machine about its pitch and roll axes to maintain the machine in a generally level attitude about such axes irrespective of attitude-changing forces due to any abrupt irregularities present in the reaction surface over which the machine is traveling.

3,373,837
FEED SYSTEMS FOR MULTIPLE AIR CUSHION TYPE PLATFORMS
Paul Guienne, Paris, France, assignor to Bertin & Cie, Paris, France, a company of France
Continuation-in-part of application Ser. No. 317,672, Oct. 21, 1963. This application Jan. 28, 1966, Ser. No. 523,748
Claims priority, application France, Feb. 1, 1965, 3,983
10 Claims. (Cl. 180—118)



1. In a ground effect machine of the kind having a platform supported by a plurality of unit air cushions, a system for distributing air to said cushions and including air compressing means; a main conduit supplied with compressed air from said air compressing means; a plurality of unit conduits connected to said main conduit for collecting the compressed air therefrom and connected to the respective cushions for supplying this compressed air thereto; an air flow controlling valve in each unit conduit, each valve having a normally open position and being adapted to be moved toward an operative position wherein the associated unit conduit is at least partly closed; elastic return means for urging each valve into the open position thereof; hollow deformable members associated to each valve which are subjected externally to the pressure in said main conduit and internally to a pressure equal to or lying between the pressures prevailing respectively in said main conduit and in the cushion associated to that particular valve, said members opposing said elastic return means for urging the valve into its open position.

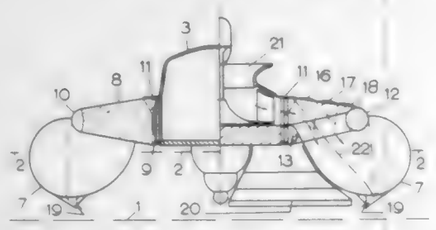
3,373,838
AIR CUSHION DEVICE WITH HEIGHT CONTROLLING BLEED HOLES
Jerry L. Stemple, Decatur, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 19, 1967, Ser. No. 646,991
2 Claims. (Cl. 180—124)



In preferred form, an air cushion device including a platform, a flexible diaphragm underlying the platform and fixed to the platform to define a continuously curving

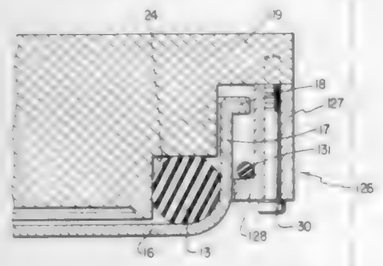
depending convolution spaced from the ground to define a perimetrical throttling gap and further including an inflatable annular cavity between the diahpragm and platform and a plenum cavity between the diaphragm and ground bounded by the perimetrical throttling gap, a plurality of bleed holes in the continuously curved depending convolution directing fluid pressure from the inflatable annular cavity, the plurality of bleed holes being selectively located in communication with said plenum cavity in accordance with load changes on the platform.

3,373,839
GROUND EFFECT VEHICLES WITH EXTENSIBLE BASE AREA
Derek James Hardy, Cowes, and Lavis Albert Henry Riddle, East Cowes, Isle of Wight, England, assignors to Westland Aircraft Limited, Yeovil, England
Filed July 12, 1965, Ser. No. 471,336
Claims priority, application Great Britain, July 28,1964, 30,039/64
12 Claims. (Cl. 180—128)



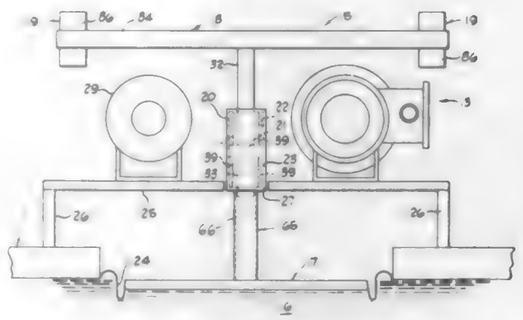
An air cushioned vehicle which utilizes an inflatable flexible skirt for selectively forming a supporting air cushion for the main body of the vehicle of greater lateral area than that of the main body portion. The inflatable flexible skirt is attached to the vehicle by, for example, flexible inflatable supporting members which are separated from the skirt in an air tight manner thereby permitting the supporting members to be maintained at pressures different from that maintained in the skirt.

3,373,840
GAS EXPLODER SEISMIC WAVE GENERATOR
Lauren G. Kilmer, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 29, 1966, Ser. No. 546,245
4 Claims. (Cl. 181—.5)



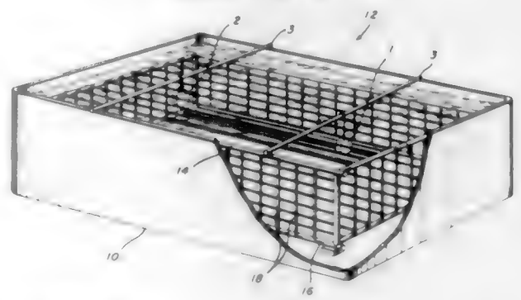
A gas exploder seismic wave generator having a rigid top and a rigid bottom telescoping together to form a chamber in which a gas explosion can take place having a resilient sealing ring inside of the joint formed between the bottom and top. The bottom telescoping member has an outwardly telescoping flange and the top has a portion thereof with a diameter larger than the diameter of the flange. Hook means are provided including flange means extending beneath the outwardly extending flange and a resilient O-ring positioned between the flange and the flange means.

3,373,841
METHOD AND APPARATUS FOR GENERATING SOUND WAVES
Park H. Miller, Jr., Del Mar, Calif., assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware
Filed Apr. 1, 1966, Ser. No. 539,365
25 Claims. (Cl. 181—.5)



A novel sound source and method of generating sound waves utilizing the source is disclosed which includes a power system, an oscillatory system and a radiating member coupled to the medium in which the waves are generated. The oscillatory system includes a spring member and an inertial member. The power system is coupled between the spring and the radiator and exerts force periodically on both the spring and the radiator to transfer energy to both of them. The resonant frequency of the source as coupled to the medium is adjustable and the power system is preferably operated at the resonant frequency.

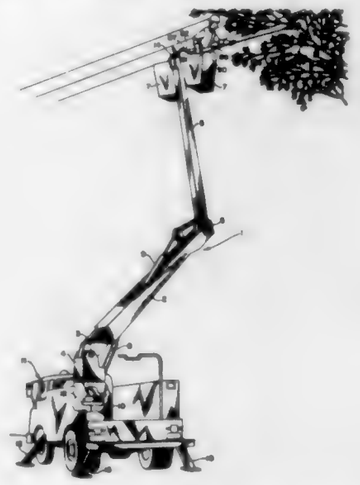
3,373,842
UNDERWATER ANECHOIC CHAMBER WITH SCREEN OF RUBBERLIKE TUBES
Cecil J. Burbank and Frank R. Abbott, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 28, 1967, Ser. No. 664,239
4 Claims. (Cl. 181—33)



Sound transducers cannot generally be tested in a small pool of water because of reverberations caused by echoes from the side walls or boundaries of the pool. Near ideal anechoic conditions are achieved in this invention by mounting a screen of air-filled rubber tubes parallel to the top, bottom and sides of the pool.

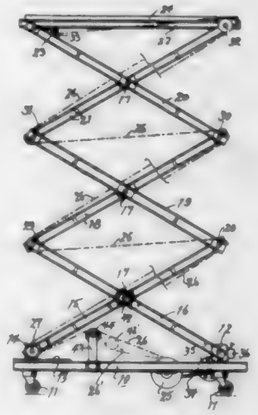
3,373,843
FLOW AND PRESSURE CONTROL VALVE
Herbert H. Schmiel, Cleveland, and Louis G. Hajma, Warrensville Heights, Ohio, assignors to Parker Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 4, 1966, Ser. No. 540,006
24 Claims. (Cl. 182—141)

17. A fluid power control system for an aerial lift device of the type having a base, a boom and bucket assembly movably connected to said base, and a fluid motor operative to raise and lower said boom and bucket assembly; said system comprising first and second valve assemblies operable respectively at said base and at said bucket, and each having a pressure inlet passage and a motor passage for connection with said fluid motor; first and second directional control valve members selectively movable in the respective valve assemblies to control fluid pressure actuation of said fluid motor; first and second selector valve members movable in the respective valve assemblies from one position communicating the



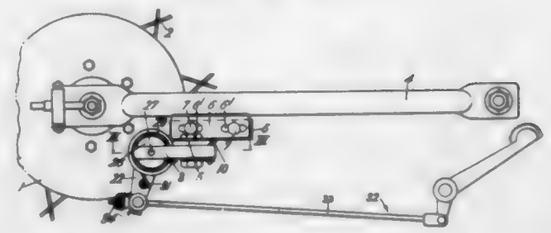
respective inlet passages with the respective directional control valve members to another position in which the inlet passage of said first valve assembly is communicated with the inlet passage of said second valve assembly and in which the inlet passage of said second valve assembly is communicated with another motor passage thereof, said another motor passage of said second valve assembly being connected with the fluid motor of a power tool adapted to be manipulated by a workman in said bucket.

3,373,844
COMPACT MOTORIZED SCAFFOLD ARRANGEMENT
George F. Schafer, El Tahoe, Calif. (P.O. Box AV-Bijou, Lake Tahoe, Calif.)
Filed May 16, 1966, Ser. No. 550,275
1 Claim. (Cl. 182—141)



This invention relates to a lazy tong scaffolding assembly having spaced lazy tong side portions with transversely extending tie rods for stabilizing the assemblies together with an additional lazy tong assembly mounted upon the spacing tie rods and operating in a plane perpendicular to the spaced lazy tong assemblies as a stabilizing means and a cable retracting means in the form of a bobbin over which the lazy tong extending cable is wound with superimposed concentric turns to provide a maximum torque during the initial lazy tong extending operation.

3,373,845
HIGH PERFORMANCE FRICTION DISC BRAKE
Tullio Campagnolo, Corso Padova 160, Vicenza, Italy
Filed Sept. 7, 1965, Ser. No. 485,258
Claims priority, application Italy, Sept. 7, 1964, 50,973/64; July 29, 1965, 7,516/65
6 Claims. (Cl. 188—26)

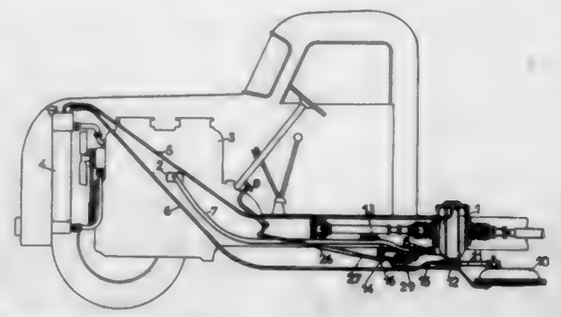


A pair of friction pads, one stationary, the other rotatable, are mounted on opposite sides of a vehicle brake disc for common shifting transverse to the axis of the disc when the rotatable pad is actuated to grip the disc with the stationary pad, the angular movement of the rotatable pad being in the same direction as the disc to provide a servo action.

3,373,846
LOCKING DEVICE FOR ROPES AND SHEAVES
Thomas Gaughan, Jr., 89—51 237th St., Bellerose, N.Y. 11426
Filed Apr. 14, 1966, Ser. No. 542,637
8 Claims. (Cl. 188—64)

A locking device for ropes and the like extending about the sheave of a pulley wherein the device locks the ropes and sheave together from relative movement.

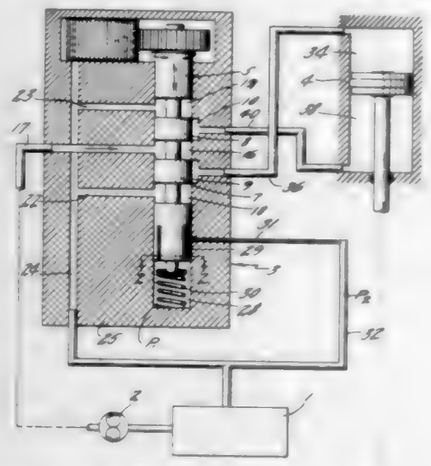
3,373,847
BRAKING ARRANGEMENT COMPRISING AN HYDRAULIC DECELERATOR
Etienne Rohacs, 56 Rue d'Eaubonne, Saint-Gratien, France
Filed Feb. 23, 1966, Ser. No. 537,601
Claims priority, application France, Mar. 9, 1965, 8,443
7 Claims. (Cl. 188—90)



A braking hydraulic decelerator in which the decelerator is simultaneously supplied directly from the cooling

system of the vehicle and directly from an auxiliary supply reservoir.

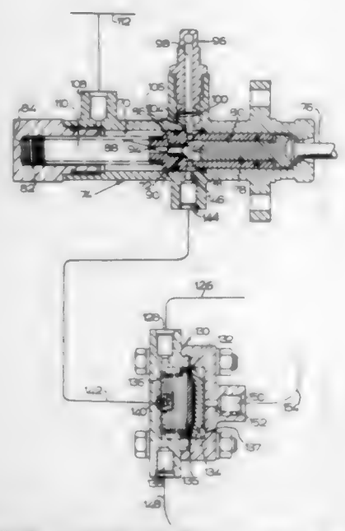
3,373,848
VISCOSITY INDEPENDENT HYDRAULIC FLOW REGULATOR
Kermit I. Harner, Windsor, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 529,797
4 Claims. (Cl. 188—97)



Damping of a hydraulic servo system is effectuated by disposing a variable volume chamber at one end of a servo valve which is in communication with an inertia tube and chopper. The chopper is sequenced in time relation relative to the flow in the inertia tube such that the velocity of the flow in and out of the tube never reaches its terminal value.

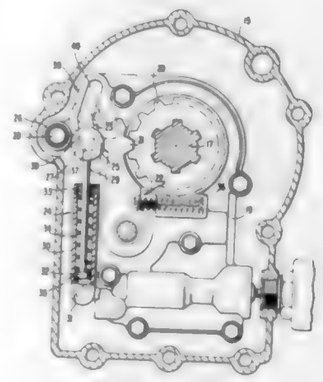
3,373,849
BRAKES AND BRAKING SYSTEMS
Glyn Phillip Reginald Farr, Kenilworth, England, assignor to Girling Limited, Birmingham, England
Filed June 24, 1966, Ser. No. 560,132
Claims priority, application Great Britain, June 26, 1965, 27,179/65
10 Claims. (Cl. 188—152)

A servo assisted vehicle brake in which the brake



mounting includes relatively displaceable members which together define a servo hydraulic cylinder and piston and are displaced in a direction to increase the pressure of fluid within the servo cylinder in response to brake drag force on braking. The brake includes a hydraulic actuator which is supplied with hydraulic fluid under pressure from a master hydraulic cylinder and piston and the pressurized fluid from the servo cylinder is applied to the piston in the master hydraulic cylinder to increase the pressure of the fluid applied to the piston in the brake applying direction to thereby create the servo effect on braking.

3,373,850
PARKING LOCK MECHANISM FOR VEHICLES, ESPECIALLY MOTOR VEHICLES
Josef A. Helmer, Aich, Kreis Nurtingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed June 24, 1966, Ser. No. 560,173
Claims priority, application Germany, June 26, 1965, D 47,603
23 Claims. (Cl. 192—4)

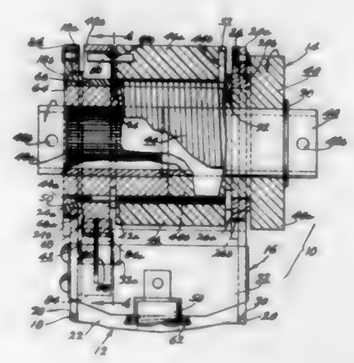


A parking lock mechanism for vehicles, especially motor vehicles having automatically shifting change-speed transmissions, particularly change-speed transmissions actuated by a pressure medium and provided with a hydrodynamic transmission part or the like connected ahead of the change-speed gear, in which the pressure for shifting the change-speed gear is influenced by a control or regulating device dependent on the output rotation speed, which control device is arranged within a cover adjoining the change-speed gear housing and separated therefrom by a partition wall, and to which is coordinated a housing part accommodating the supply and discharge, and whereby a toothed locking detent or locking pawl serves as parking lock means which is pivotally connected at one end and is provided at the other end with tooth means for the lateral engagement into the teeth provided at the circumference of the output shaft and disposed within the housing part, which locking detent or pawl is brought into and held in engagement by means of an actuating roller supported in a frictionless manner and movable by means of an elastic linkage between an abutment and the detent, and whereby the disengagement of the locking detent—after removal of the roller pressure—takes place automatically by the circumferential force of the output shaft by means of a corresponding beveling of the two toothed systems.

3,373,851
CLUTCH AND FRAME UNIT
John S. Baer, Medford Lakes, N.J., assignor to Precision Specialties, Inc., Pitman, N.J., a corporation of Missouri
Filed Feb. 11, 1966, Ser. No. 526,911
17 Claims. (Cl. 192—12)

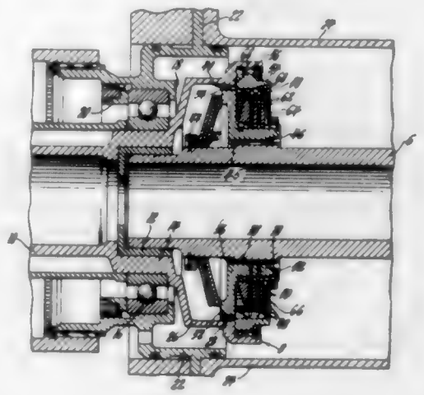
A clutch unit is provided having rotatable members including a driving hub, a driven hub and a tubular shaft providing support of the driving hub and the driven hub,

at least one of the hubs being rotatable relative to the shaft. A frame is supported by at least one of the rotatable members and includes a bearing between the at least one rotatable member and the frame. Clutch means is supported by at least one of the hubs for coupling the driving hub to the driven hub, and actuator means is supported by the frame in a position to cooperate with the clutch means to actuate the clutch means between engagement and disengagement. The tubular shaft is adapted



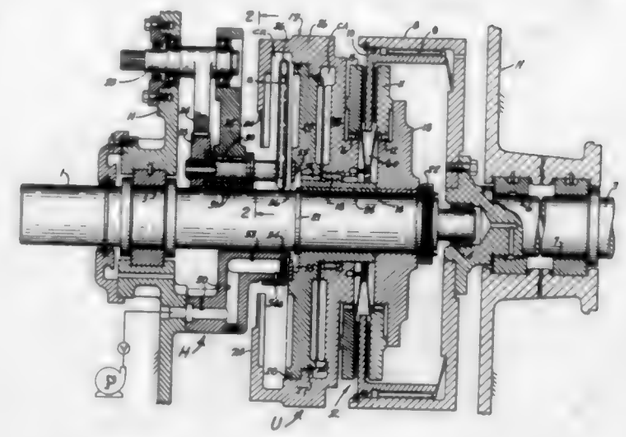
to receive and be connected to a power shaft for transmitting or receiving power. Brake means is disclosed for association with the clutch means for stopping the driven hub after the clutch means is disengaged. Means is disclosed coupled to the frame for preventing backup of the driven hub in a situation where the clutch means might otherwise reengage. Also, means is disclosed for adjustment of the stop position of the driven hub relative to the clutch means.

3,373,852
SAFETY COUPLING
Cyril M. Hawkins, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 20, 1965, Ser. No. 457,304
5 Claims. (Cl. 192—48)



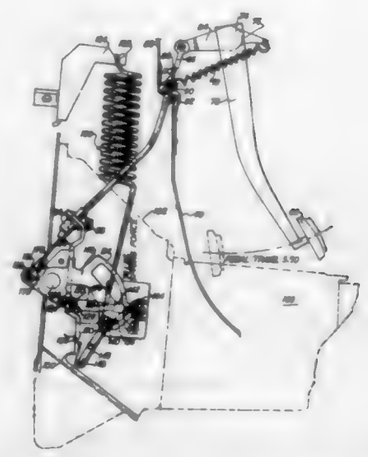
A safety coupling which transmits an unlimited amount of torque in one direction through an intermediate member movably splined on one shaft and spring urged into positive engagement with a second shaft. The safety coupling will transmit a limited amount of torque in the opposite direction by virtue of the spring. A friction clutch couples the intermediate member to the second shaft to hold the positive clutch out of ratcheting engagement beyond the negative torque limit.

3,373,853
HYDRAULICALLY ACTUATED MECHANISM
George R. Aschauer, Racine, Wis., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 29, 1966, Ser. No. 546,227
4 Claims. (Cl. 192—85)



Hydraulically actuated mechanism, such as a clutch or the like, in which the actuating fluid is introduced from a stationary or non-rotating parts and is directed into a rotating part having retaining means for then channelling the fluid to the actuating chamber or other locations. Thus the fluid is injected as a stream and drawn into the rotating part by centrifugal force. An adjusting scoop tube is also used for removing fluid in combination with the above means for introducing the fluid, which combination provides an efficient, sensitive and accurately controllable mechanism.

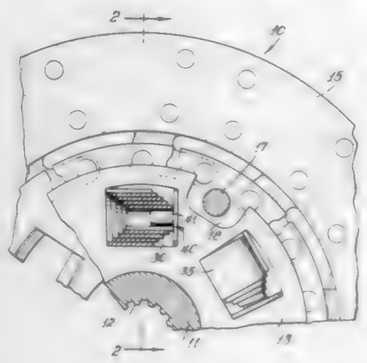
3,373,854
FRICTION CLUTCH OPERATOR HAVING A LINKAGE SYSTEM WITH A VARIABLE MECHANICAL ADVANTAGE
Etienne F. Masalskis, Oak Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 5, 1966, Ser. No. 518,819
8 Claims. (Cl. 192—99)



This specification describes a friction clutch mechanism having a personally operable clutch operating lever and a friction clutch disc pressure plate. The mechanical connection between the personally operable lever and the clutch pressure plate shifts the latter to a clutch disengaging position. The clutch disengaging force is opposed by a clutch linkage return spring. Provision is made for reducing the mechanical advantage of the spring as the

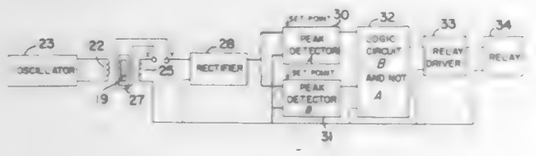
pressure plate moves away from its clutch engaging position thereby relieving the effort required to disengage the clutch.

3,373,855
VOLUTE SPRING CLUTCH DAMPER
Roger K. Ericson, Arlington Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 25, 1965, Ser. No. 458,707
1 Claim. (Cl. 192—107)



A clutch device having a hub and an integral annular flange projecting radially from the hub with a friction disc supported on the hub at one side of the flange and a drive washer supported at the other side of the flange. The flange having a plurality of aligned apertures with volute spring means disposed within the apertures and adapted to transmit drive between the flange disc and the hub flange.

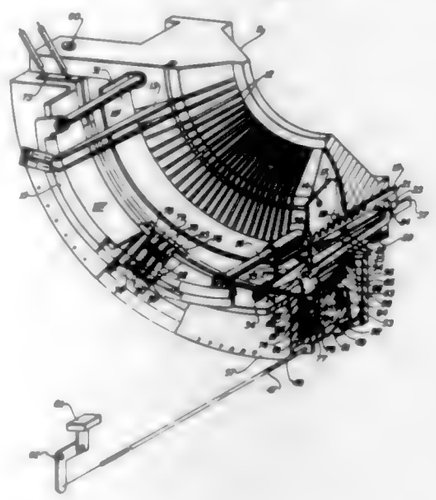
3,373,856
METHOD AND APPARATUS FOR COIN SELECTION
Norbert L. Kusters and Malcolm P. MacMartin, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Canada, a corporation of Canada
Filed May 23, 1966, Ser. No. 551,992
Claims priority, application Canada, Jan. 18, 1966, 950,098
12 Claims. (Cl. 194—100)



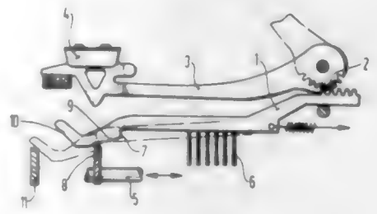
1. A method of testing coins comprising passing an alternating magnetic field through the coin to be tested, measuring the variation in the field strength due to the coin, and applying the measurement so obtained to discrimination means such that coins causing a variation in field strength that lie within a pre-determined range are found to be acceptable and all others rejected.

3,373,857
MECHANISM FOR POWER OPERATING TYPE ACTIONS BOTH TO AND FROM THE PRINTING POINT
Lloyd J. Lapointe, West Hartford, Conn., assignor to Litton Business Systems, Inc., a corporation of New York
Filed Mar. 29, 1966, Ser. No. 538,302
8 Claims. (Cl. 197—14)

A typewriter having a common cyclic reciprocatable actuator and type actions arranged to be coupled selectively to the actuator which is operative under spring power to drive an action to printing position, and under motor power to drive said action from printing to returned position.



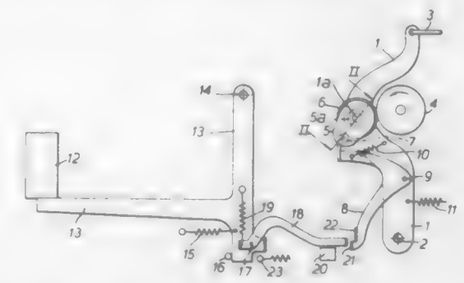
3,373,858
DRAWBAR ARRANGEMENT FOR SELECTOR BAR TRANSLATORS
Horst Stahl and Rudolf Rekewitz, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Mar. 11, 1966, Ser. No. 533,696
Claims priority, application Germany, Mar. 15, 1965, S 95,956
5 Claims. (Cl. 197—17)



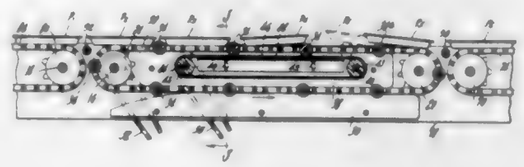
An actuating mechanism for selector-bar translators, utilizing a plurality of function-executing members, each of which is operatively coupled to an actuating drawbar, selection of a drawbar being determined by the positions of a plurality of selector bars operatively related thereto, whereby the selected drawbar may drop by movement transverse to its normal operating movement for engagement with an actuating move member movable in actuating direction over a predetermined path, in which means are provided for lifting all non-selected drawbars off of the selector bars, such means being operable during actuating movement of the actuating member and acceleration of the selected drawbar.

3,373,859
INTERMITTENT POWER TAKEOFF DEVICES
George F. N. Oliver, Bean, near Dartford, Kent, England, assignor to Oliver Pell Control Limited
Filed Oct. 17, 1966, Ser. No. 587,251
7 Claims. (Cl. 197—17)

In intermittently operated power-driven mechanism in which the drive is obtained by bringing a rotatably mounted cam into frictional engagement with a continuously driven roller, the cam is frictionally coupled to a circular disc which is rotatable about the same axis as the cam and is normally in engagement with the roller, so that the disc is rotated and tends to rotate the cam, the latter being normally held against rotation by a withdrawable detent. With this construction it can be arranged that the peripheral speed of the cam is already substantially equal to the peripheral speed of the roller at the moment when the two come into frictional engagement, thereby preventing wear and shock loading of the parts. The mechanism is suitable for operating the type bars of power driven typewriters and is described in its application to such machines.

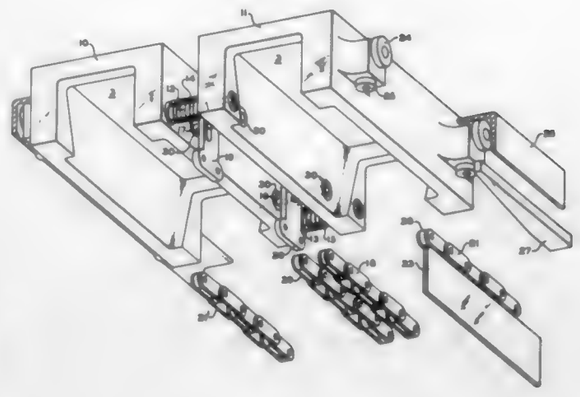


3,373,860
CONVEYOR SYSTEM
George C. Lindgren, North Reading, and James R. Cowdery, Andover, Mass., assignors to J. W. Greer Company, Wilmington, Mass., a corporation of Massachusetts
Filed June 2, 1965, Ser. No. 460,722
1 Claim. (Cl. 198—34)



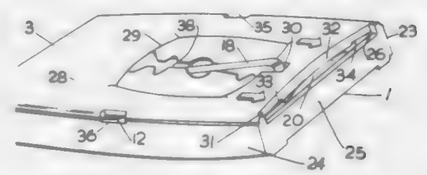
1. A method of conveying containers comprising: continuously sequentially discharging in timed relationship and in one direction a plurality of containers being transported by a first conveying means engaging the bottom portions only of said containers onto a second conveying means having an elongated traverse continuously moving forwardly in said one direction and having a plurality of container receiving portions spaced in said one direction with auxiliary container moving means located between adjacent portions of said container receiving portions, respectively, such that said bottom portions of sequential ones of said discharged containers are deposited on one of said container receiving portions or in part on the one of said auxiliary container moving means located rearwardly adjacent one of said container receiving portions not having one of said containers in its entirety deposited therein; advancing each of said containers deposited on an auxiliary container conveying means to the container receiving portion located in said one direction with respect thereto by movement of said auxiliary container conveyor means in engagement with the bottom surface of said container deposited in part thereon prior to the discharge of the next sequential container of said containers from said first conveying means; and transferring said containers being transported by said traverse at a location remote from said discharge portion of said first conveying means to other means.

3,373,861
SEALING PACKAGES
Andrew J. Gass, Summit, N.J., assignor to Phillips Petroleum Company, a corporation of Delaware
Original application June 24, 1964, Ser. No. 377,671, now Patent No. 3,331,183. Divided and this application Apr. 7, 1967, Ser. No. 629,160
4 Claims. (Cl. 198—131)



Pocket means for supporting containers therein for subsequent covering, said pockets having interior walls shaped to support the sides of the packages therein and being slidably biased away from one another, said pocket means also carrying rotatable means for coacting with guide means.

3,373,862
RAZOR BLADE DISPENSER
Marjorie Doreen Minchin, 154 Victoria Ave., Borrowash, Derby, England
Filed Aug. 6, 1965, Ser. No. 477,880
Claims priority, application Great Britain, Aug. 8, 1964, 32,386/64; Nov. 19, 1964, 47,074/64
5 Claims. (Cl. 206—16)

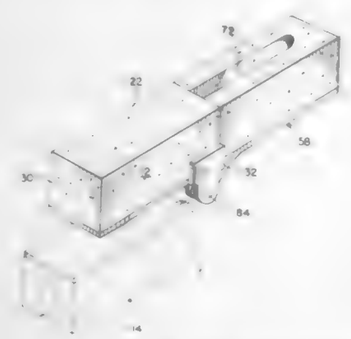


1. A naked razor blade dispenser comprising a casing having a top formed with a thumb opening and a blade exit end portion, an end wall having an upper blade exit portion which forms with the blade exit end portion of the casing top a blade exit slot; ramp means in the casing and extending from side-to-side of the casing and inclining from a location on the casing floor spaced from said end wall upwardly and forwardly toward said blade exit slot; and on the underside of said blade exit end of the casing top and on the top side of said ramp means, arcuate surfaces cooperating in resilient, substantially closed, exit relationship with each other.

3,373,863
COMBINED HOLDER AND UTENSIL FOR A FEVER THERMOMETER
Leonard Afton, 4880 N. Marine Drive, Chicago, Ill. 60640
Filed Aug. 8, 1966, Ser. No. 571,113
6 Claims. (Cl. 206—16.5)

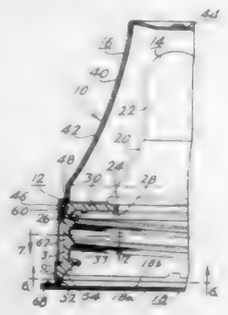
A holder for a fever thermometer which enables the thermometer to be introduced into the oral cavity without

removing the thermometer from the holder. A hinged section of the holder swings to an out-of-the-way position



to expose the bulb end of the thermometer for such oral introduction.

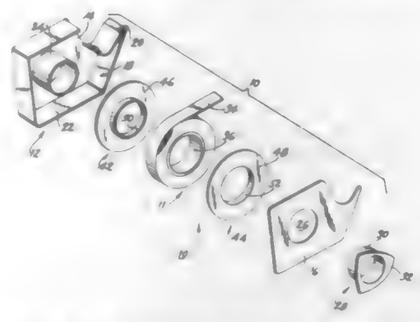
3,373,864
PRESTERILIZED NIPPLE PACKAGE
Raymond W. Barton, Evansville, Ind., and John K. Neely, Williamsport, Pa., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana
Filed Aug. 2, 1966, Ser. No. 569,699
3 Claims. (Cl. 206—46)



A sterile package for a nipple and retaining ring having an outer cover member and a removable closure seal. The outer cover is cup-like with a top portion and a cylindrical skirt which surrounds the nipple retaining ring. The retaining ring, and the nipple mounted in it, are held within the cover member and cannot fall out when the seal is removed. Ribs on the retaining ring lock with grooves on the outer cover member so that the retaining ring can be attached to a bottle before the cover member is removed.

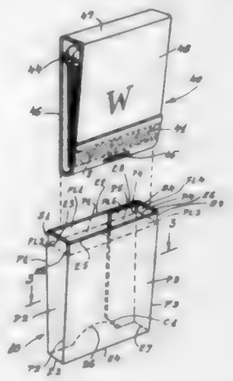
3,373,865
DISPENSER FOR PRESSURE-SENSITIVE TAPE
Jesse R. Hollins, 1059 E. 22nd St., Brooklyn, N.Y. 11210
Filed Mar. 10, 1966, Ser. No. 533,300
6 Claims. (Cl. 206—52)

1. A portable pressure-sensitive adhesive tape dispenser, said dispenser including a multi-convoluted wound roll of tape, the diameter of the roll being greater than the width of the roll, the roll having a pair of spaced opposed circular side faces defined by the edges of the convolutions of the tape, at least the radially inward face of the tape being covered by a layer of a pressure-sensitive adhesive, a cylindrical sleeve about which the tape is wound, said sleeve having its edges in alignment with the side faces of the roll, a housing containing and rotatably carrying the roll of tape, said housing comprising two broad substantially flat spaced generally parallel interconnected walls, a support intermediate the walls on which the sleeve of the tape roll is journaled for rotation about an axis generally perpendicular to the walls and a cap interposed between a side face of the tape roll and an interior surface of a housing wall, the cap comprising a flat disc of a size sufficiently large to substantially cover the said side face of the roll, and further comprising a cylindrical hub integral and concentric with the disc, said hub being disposed between the sleeve of the tape roll and said support, the lower side face of the tape roll overlying the disc of the cap when the tape dispenser is stored with the walls of the housing substantially horizontal with said face lowermost and after a passage of time becoming sticky by the exposure of the pressure sensitive adhesive at said side face, and said side face adhering to the interior face of said disc of the cap, the cap thereupon adhering to and rotating with the roll of tape and thereby preventing inoperativeness of the dispenser caused by adherance of the sticky face of the roll to the housing wall, the outermost convolution of the tape being freed from edgewise adherence to the disc of the cap as said convolution is unwound from the roll.



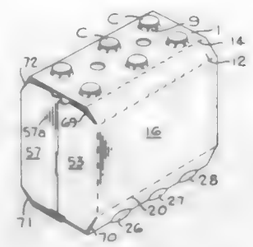
3,373,866
COVER LOCK OR SHROUD FOR BOOK MATCH FOLDERS
Theodore Will, Syosset, N.Y., assignor to Fund Del Inc., Syosset, N.Y., a corporation of New York
Filed June 10, 1966, Ser. No. 556,687
5 Claims. (Cl. 206—29)

1. A combined matchbook folder or the like and safety reusable cover lock or shroud, a matchbook folder being formed by a substantially rectangular strip of flexible sheet material, said strip having a plurality of transverse folds defining and joining a plurality of panels, a first one of said panels being narrow and connected to a second longer panel by a first fold, a plurality of match layers having matches joined at base ends of the layers, said base ends being interposed between the first and second panels, fastener means engaging the match layers and the first and second panels to hold the match layers in the folder, a striking surface disposed along the outer surface of said narrow panel, said first panel forming a part of a front side of the folder, the second panel forming a rear imperforate cover side of the folder, a narrow third one of the panels joined to the second panel by a second fold and defining a top imperforate cover panel of the folder, a fourth longer panel joined to the third panel by a third fold and defining a front imperforate cover panel for the folder in cooperation with the first panel when disposed thereunder so as to form a complete inner cover for the matches, and an outer safety reusable cover lock or shroud adapted to be slidably and removably disposed over said matchbook folder comprising a tapered tubular body of rectangular section and having opposite open top and bottom ends, and opposite closed front, back and sides, said outer safety cover being formed from a trimmed strip of flexible sheet material, having a plurality of preformed vertical folds, as opposed to the transverse folds of the matchbook folder, defining and joining a plurality of preformed panels, having a front wall, superimposed and sealed rear wall and two side walls, an open top end and narrower open bottom end, said front and side walls tapering downwardly and inwardly, a first narrow inner back panel to receive adhesive being part of a superimposed rear cover panel, a second narrower tapered panel connected to the first panel by a vertical fold slitted at the top end, defining a first outer side cover panel, a third larger panel joined to the outer first side cover panel by a second vertical fold slitted at the top end, and defining an outer front cover panel, a fourth narrow tapered panel of similar dimensions as the second narrow tapered panel joined to the outer front cover panel by a third vertical fold slitted at the top end, defining a second outer side cover panel, a fifth larger panel joined to the second outer side cover panel by a fourth vertical fold slitted at the top end, and when superimposed and adhered to the first narrow panel, defining a rear outer cover panel, said slitted folds defining flexible expandable, springy flap-like portions at the top of the panels and thereby opening and providing pressurized hold and release on front and rear cover panels of the inner matchbook, said superimposed and adhered rear outer wall providing a double thickness whereby reinforced compression is exerted on the rear inner cover panel of the matchbook for frictionalized hold and withdrawal of the inner matchbook whereby to form a complete outer cover adapted for said inner match folder to be inserted therein, through the top open end, the width of the top open end of the outer cover lock being narrower than the top cover panel of the inner book match to expand the flexible, expandable springy



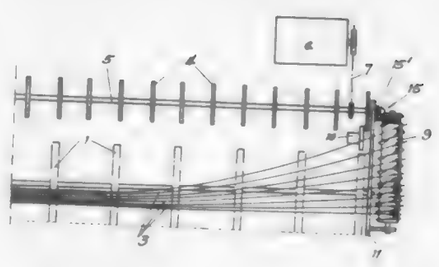
flap-like portions of the panels when the matchbook is inserted in the cover lock, the matches having two panels, namely the front outer cover panel of the cover lock and the front inner cover panel of the matchbook in front of the matches, two panels, namely, the rear outer cover panel of the cover lock and the rear inner cover panel of the matchbook behind the matches, a single top inner cover panel of the matchbook covering the top of the matches and the single outer side cover panels of the cover lock covering the open sides of the matches, when the matchbook is inserted into the safety reusable cover lock in closed condition, said outer reusable cover lock being unattached to and the inner matchbook being removable therefrom by pushing up the matchbook from the narrow open bottom end of the outer cover lock out of the top open end thereof and grasping both ends of the inner top cover panel of the matchbook and pulling the complete inner matchbook out of the cover lock from its top open end for opening and the use of the matchbook, and thereafter reinserting the matchbook through the top open end into the outer safety cover lock, for locking the inner cover of the matchbook, and doubling protection, said cover lock being slidably and removably disposed on the matchbook in an intermediate position between opposite ends thereof, said cover lock being substantially equal in length to said inner matchbook to cover the striking surface of the inner book match when the matchbook is inserted in the cover lock.

3,373,867
ARTICLE CARRIER
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Continuation-in-part of application Ser. No. 407,779, Oct. 30, 1964. This application May 22, 1967, Ser. No. 640,078
4 Claims. (Cl. 206—65)



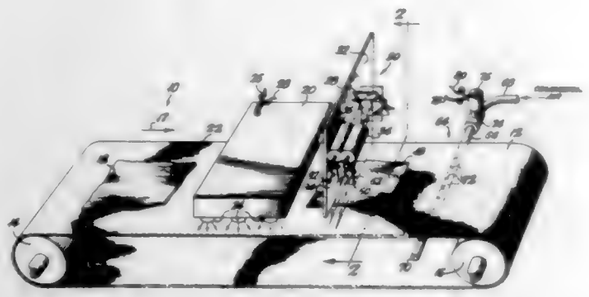
An article carrier of the wrap-around type having top, bottom and side panels interconnected to form a tubular structure is provided with end panels which are foldably joined to each end edge of each side wall and which are interlocked along their inner edges. The overall effective width of each pair of end panels at each end of the carrier is somewhat greater than the spacing between the end edges of the side walls so that, when the panels are interlocked and closed, an over-center toggle action is effected which serves to bias and hold the end panels closed.

3,373,868
APPARATUS FOR SELECTING RODLIKE MEMBERS
Jean Missioux, Sannois, Pierre Soubrier, Courbevoie, and Jean Vennat, Drancy, France, assignors to Botalam, Paris, France, a corporation of France
Filed Nov. 17, 1965, Ser. No. 508,298
Claims priority, application France, Nov. 19, 1964, 995,469; Mar. 12, 1965, 8,987
9 Claims. (Cl. 209—97)



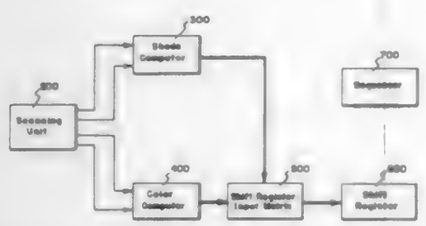
An apparatus having conveyor means for moving, selecting and separating a plurality of rods or the like in a continuous manner comprises an accelerator located along one edge of the conveyor for engaging the rods whereby they may be moved individually through a separator and thereafter grouped and bundled. A selector means, which may be a variable pitch screw, receives the said ends of the rods and moves them from the accelerator to the separator, provided that the rods are of a specified length. The said ends of the rods are moved forwardly at a speed which is greater than the conveyor speed whereby the rods are transferred one at a time by the separator. A rod counting means is positioned in the vicinity of the selector means whereby the engaged ends of the rods can be counted so as to control the number thereof placed in each group during the bundling operation. The short rods are not engaged by the screw member and are subsequently moved along the conveyor into a separate storage zone.

3,373,869
TOWEL SORTER HAVING AN INFRARED DETECTOR
Benard Burson, Jr., Austin, Tex., assignor to Burson Electronics, Inc., Austin, Tex., a corporation of Texas
Filed Aug. 23, 1965, Ser. No. 481,620
17 Claims. (Cl. 209—111.5)



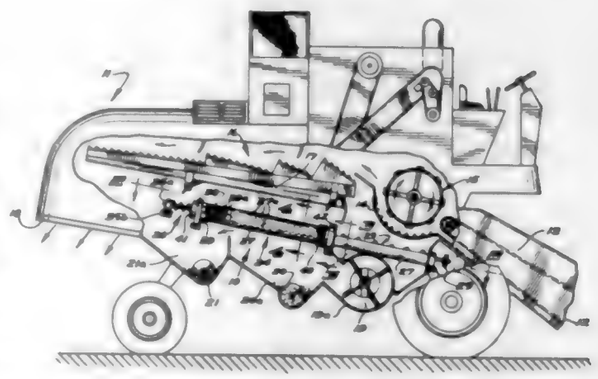
Disclosed is a system for detecting foreign matter in articles and particularly abrasive materials remaining in towels cleaned by a commercial laundry. The towels pass along an open mesh conveyor belt beneath one or more heat lamps where they are heated several degrees above ambient. Downstream of the heat lamps is an infrared detector which is scanned across the towel to sense variations in re-emitted infrared radiation. The detector output is gated by a visible light system sensing the presence of a towel. A towel with too much abrasive is ejected by an air stream from below passing through the conveyor belt.

3,373,870
CIGAR CLASSIFICATION APPARATUS
James H. Black, Quinton, and Charles E. Coleman and Vernon C. Stant, Richmond, Va., assignors to The American Tobacco Company, New York, N.Y., a corporation of New Jersey
Filed July 8, 1966, Ser. No. 563,906
6 Claims. (Cl. 209—111.6)



1. Apparatus for classifying an object in one of a plurality of categories associated with color and shade levels comprising:
(a) multichromatic light means for illuminating said object;
(b) first photoelectric means for generating a reflection signal corresponding to the intensity of light in a spectral range reflected from said object;
(c) second photoelectric means for generating a first color signal corresponding to the intensity of light of a first color in the spectral range reflected from said object;
(d) third photoelectric means for generating a second color signal corresponding to the intensity of light of a second color in the spectral range reflected from the object;
(e) electronic means for dividing the first color signal by the sum of the first and second color signals to produce a color quotient signal;
(f) means responsive to the magnitude of the color quotient signal for selecting one of a plurality of color level signals;
(g) means responsive to the magnitude of the reflection signal for selecting one of a plurality of shade level signals;
(h) means responsive to the color level and shade level signals for placing the object at a location corresponding tothe category associated with the color and shade levels represented by those signals.

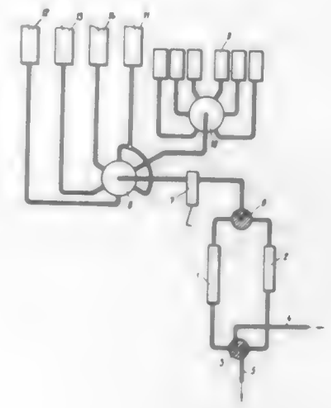
3,373,871
SEPARATING SIEVES FOR COMBINES
Calvin J. Huether, Regent, N. Dak. 58650
Filed Apr. 7, 1965, Ser. No. 446,240
10 Claims. (Cl. 209—284)



This invention relates to a separating device for installation in agricultural combines designed to specifically replace the flat separating sieves now utilized in such machines. The separating sieve structure as provided herein includes a first grain receiving section designed to initially receive a partially separated grain therein and which includes a plurality of drive auger members to displace this received grain in a separating sieve section. A plurality of individual open-topped auger housing compartments are provided such that a certain amount of the grain received therein will be a portion to each auger and will not tend to collect on one side of the device if the device should, for example, be operating on an incline. The received grain is delivered by the augers to aligned separating conduits which conduits are provided with a plurality of passages extending radially therethrough and which include a first set of passages and a second set of passages of substantially different sizes. The conduits are rotated in counter rotation to the augers and a working effect is produced on the grain such that further separation is afforded and the completely threshed grain is delivered to the first set of passages and the partially separated grain is delivered through the second set of passages where it will be returned to the initial grain receiving section for rethreshing.

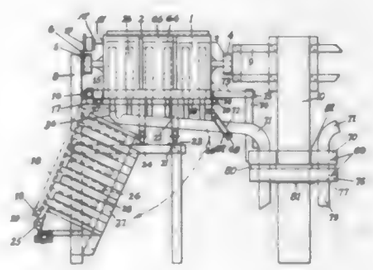
3,373,872
APPARATUS FOR CARRYING OUT A RAPID CHROMATOGRAPHY OF AMINO ACID AND SIMILAR MIXTURES
Jiří Hrdina, Prague, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia, a corporation of Czechoslovakia
Filed Mar. 31, 1965, Ser. No. 444,247
Claims priority, application Czechoslovakia, Apr. 13, 1964, 2,139/64
3 Claims. (Cl. 210—198)

A chromatographic apparatus particularly for amino acids and similar mixtures in which a pump feeds eluents



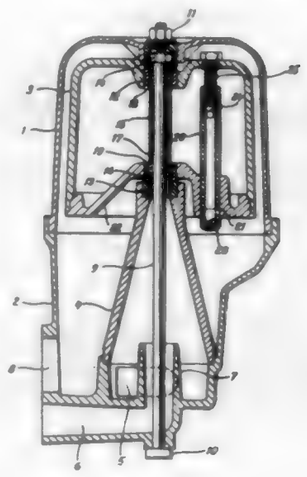
from their containers and samples to be analyzed from their respective containers into one or two columns.

3,373,873
MULTIPLE ELEMENT, HORIZONTALLY ROTATING, FILTER PANS HAVING PIVOTING BOTTOMS
Alfred H. Parmentier, 3 La Bruyere, Lillois, Brabant, Belgium
Filed Mar. 17, 1966, Ser. No. 535,071
Claims priority, application Luxembourg, May 12, 1965, 48,582
4 Claims. (Cl. 210—236)



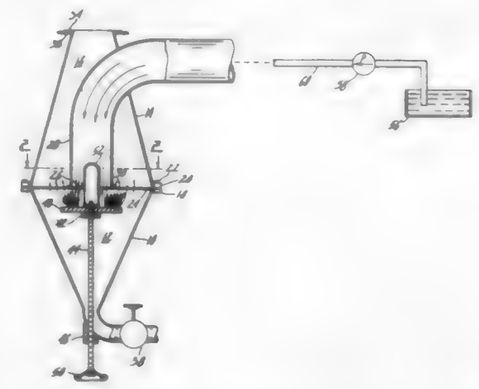
A continuous rotary filter adapted for operation under vacuum or under pressure, comprising a plurality of filtering pans mounted for rotation in a horizontal plane around a vertical axis; a plurality of filter cells in each pan; a bottom for each pan pivotally secured thereto along one edge by a hinge having a horizontal axis; watertight seal between each pan and its bottom extending around the periphery of the bottom; means for holding each bottom in close engagement with its pan during a portion of the rotary travel thereof; means for releasing each bottom for swinging movement downwardly about the horizontal hinge during another portion of the rotary travel thereof; means for applying a vacuum to the interiors of the cells, or for distributing liquid under pressure to the exteriors of the cells, during the first-mentioned portion of the rotary path of travel and connections between these means and the pans for removing liquid passing through the cells; means for removal of solids deposited on the cells during the other portion of the rotary path of travel; and means for thereafter swinging each bottom upwardly into watertight engagement with its pan.

3,373,874
CYCLONE-CENTRIFUGE SEPARATOR
Paul Kompert, Stockholm, Sweden, assignor to Alfa-Laval AB, Stockholm, Sweden, a corporation of Sweden
Filed Oct. 12, 1965, Ser. No. 495,041
Claims priority, application Sweden, Oct. 14, 1964, 12,349/64
10 Claims. (Cl. 210—261)



A centrifuge rotor has one end provided with an inlet disposed at the rotor axis, the rotor also having an outlet for centrifugally cleaned liquid; and a cyclone has a tangential inlet for liquid to be cleaned and an outlet for liquid cleaned by the cyclone action. The cyclone has a narrow end on which the centrifuge rotor is journalled for rotation and which forms a second outlet for material separated from the liquid by the cyclone action; and releasable means are provided to clamp the cyclone and rotor together with said second outlet of the cyclone opening into said axial inlet of the rotor.

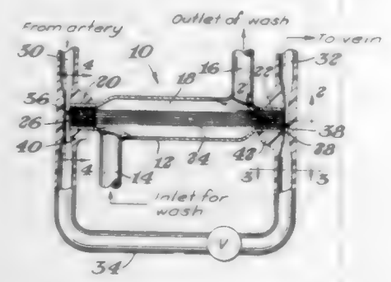
3,373,875
APPARATUS FOR SCREENING PULP
Garo Krikorian, Paxton, Mass., assignor to Rice Barton Corporation, Worcester, Mass., a corporation of Massachusetts
Filed June 1, 1965, Ser. No. 460,252
2 Claims. (Cl. 210—305)



1. A liquified pulp screening apparatus having, in combination, a housing providing therein a pulp slurry flow channel, a screen interposed in said channel, said housing providing at one side of said screen an upstream flow area and above said screen a downstream flow area, a baffle disposed within said upstream flow area having an impact face adjacent and underlying said screen and having the

edges thereof spaced from said housing providing egress for rejects below said baffle, an adjustable support on which the baffle is adjustable toward and away from the screen, and a pulp slurry inlet conduit extending through a central portion of said screen having an orifice directing inflowing slurry directly against said impact face thereby diverting the flow against the inflowing slurry producing turbulence and a flow of said turbulent slurry over the screen area and through the screen.

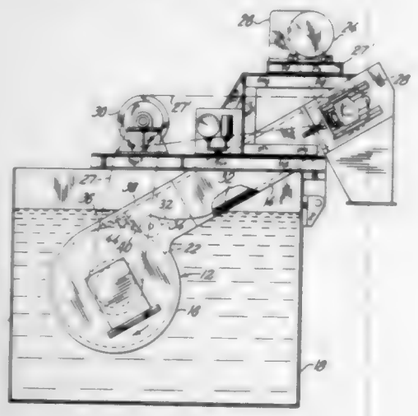
3,373,876
ARTIFICIAL BODY ORGAN APPARATUS
Richard D. Stewart, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 12, 1966, Ser. No. 549,662
4 Claims. (Cl. 210—321)



An artificial organ apparatus, such as a hollow fiber artificial kidney, including a substance exchanging element having an inlet and outlet for blood.

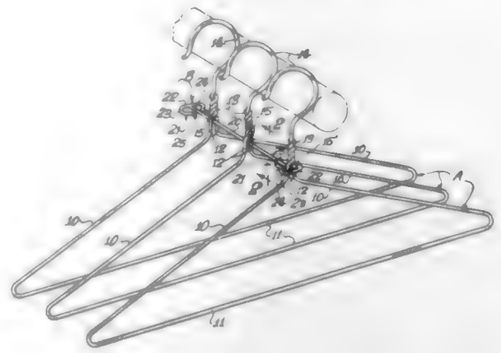
A header assembly coupled to the blood inlet and another header assembly coupled to the blood outlet, each header assembly having an input and output end and a transverse flow path intermediate of the input and output end and a Venturi flow path across the junction with the transverse flow path. The output end of one header is coupled to the input end of the other header. The input of one header is to be coupled to a source of blood and the output of the other header is coupled to blood return means.

3,373,877
FILTER DEVICE
James M. Stewart, Dearborn, and Sark Pashaian, Monroe, Mich., and Paul N. Romack, Youngstown, Ohio, and Orlan M. Arnold, Grosse Pointe Park, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.
Filed Sept. 22, 1964, Ser. No. 398,446
2 Claims. (Cl. 210—401)



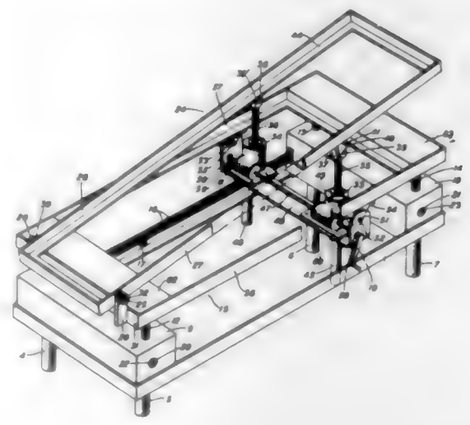
A filter assembly having a rotatable permeable drum and a filter medium transporting means to carry filter medium over the permeable surface of the drum, and a suction connection to the interior of the drum. The assembly being movably mounted so as to dip into a tank of filterable liquid. The drum being rotatably and slidably mounted on stub shafts on the assembly frame at either end, so that the drum is rotatably and removeably positioned.

3,373,878
COAT HANGER COUPLER AND ASSEMBLY
Maurice L. Daitch, 3807 Scadlock Lane, Sherman Oaks, Calif. 91403
Filed Mar. 22, 1966, Ser. No. 536,466
4 Claims. (Cl. 211—119)



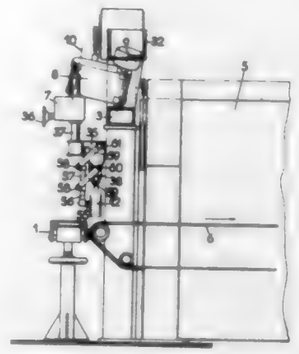
Disclosed herein is an assembly of coat hangers of the common twisted-wire type, in combination with a coupler, likewise of wire, comprising one or more coupler bars extending through the yoke that is immediately below the twisted connection between the two hanger arms of the hanger, and which provides a support from which some of the hangers can be suspended in the event another hanger of the assembly is grasped by its supporting hook and used as a handle to support the assembly. The coupler further includes means to engage the upper sides of the hanger arms to transmit support to the coupler from one or more hangers which are directly supported from a person's hand or from some external support.

3,373,879
ELEVATING AND TILTING FRAME STRUCTURE
Anthony J. Verini, 30 Lenox Ave., Greenbrook, N.J. 08812
Filed Mar. 9, 1966, Ser. No. 532,995
5 Claims. (Cl. 214—1)



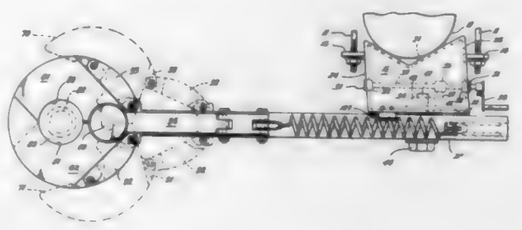
A vertically adjustable frame structure is disclosed utilizing a pivotally mounted jack-actuated control arrangement for tilting an elevated support platform to desired sloping angles and heights. Control and linking shaft arrangements are used for controlling a pair of jacks mounted on a pivotally secured U-shaped bracket for facilitating the platform tilting action with reduced actuating force by personnel and reduced frictional forces on the jacks.

3,373,880
AUTOMATIC TRANSFER MECHANISM FOR BOTTLES
Michel Dubesset, Complegne, France, assignor to Societe Anonyme dite: Ateliers de Construction de Complegne, Complegne, Oise, France
Filed June 27, 1966, Ser. No. 560,592
Claims priority, application France, July 15, 1965, 24,758, Patent 1,450,805
6 Claims. (Cl. 214—1)



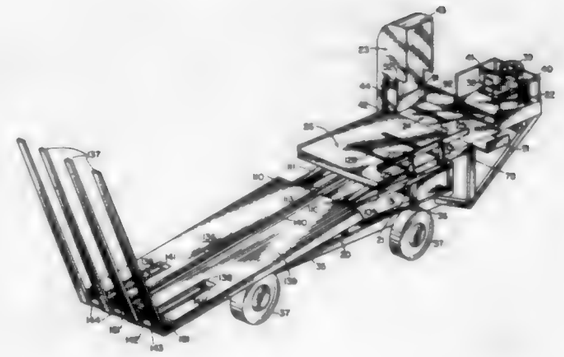
1. A machine for transferring a row of articles from a first position to a second position, said machine comprising elongated gripping means for simultaneously gripping all of the articles in said row, at least two arms pivotally attached to said gripping means at points spaced longitudinally therealong, individual pivot means for each arm on which said arms are mounted to swing between a position supporting said gripping means in its first position and one supporting said gripping means in its second position, said pivot means and arms constituting a parallellogram linkage for swinging said gripping means, and said pivot means being inclined away from a point intermediate said first and second gripping means positions, so that said gripping means is successively raised and lowered as it is swung between its two positions.

3,373,881
PIPE STABILIZER
Ottis W. Frogge, Oklahoma City, Okla., assignor to M-C-M Machine Works, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Mar. 9, 1966, Ser. No. 533,035
7 Claims. (Cl. 214—2.5)



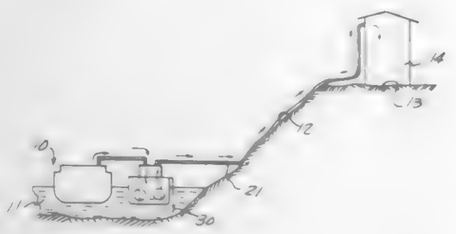
1. A stabilizer including
an arm pivotally mounted for motion between a lower position and an upper position,
jaw means pivotally mounted on the arm,
spring means holding said jaws in open position while said arm moves between said positions,
torque means to rotate said arm from said lower to said upper position,
stop means to block the travel of said arm when it reaches said upper position, and
means connecting said torque means to said jaw means to move said jaw means to closed position upon further actuation of said torque means but only after said torque means has moved said arm to said upper position against said stop,
said spring means exerting sufficient force to keep said jaw means fully open during the entire motion of said arm from said lower to said upper position despite the action of said torque means thereon tending to close the jaws during elevation of said arm from said lower to said upper position.

3,373,882
BALE LOADING AND STACKING DEVICE
Stanley L. Forest, Royal City, Wash. 99357
Filed Apr. 14, 1966, Ser. No. 542,635
5 Claims. (Cl. 214—6)



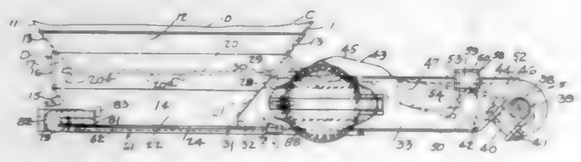
1. A bale loading and stacking device of the nature aforesaid comprising, in combination:
a steerable vehicle having a prime mover supplying power for motion and appurtenant systems carried thereon;
an operation deck, in a forward upper position thereon, having centralized operating controls accessible therefrom;
an elevator structure, in the forward position, having means to convey bales presented thereto to a transfer deck adjacent the upper part thereof;
a transfer deck communicating transversely from the upper portion of said elevator to a bale cart rearwardly adjacent thereto, said deck having first means of conveying bales therealong to a medial transfer portion and second means of transferring bales therefrom to a bale cart;
a bale cart adjacent said transfer deck moveable therefrom to and onto a rearwardly positioned bale stacker, said cart having means of laterally and vertically positioning bales thereon;
a bale stacker pivotably communicating with said vehicular frame, adapted to receive an array of bales from said bale cart and store them;
means of rotating said bale stacker rearwardly to deposit bales carried thereby upon a supporting surface; and
a pusher means of separating said vehicle from said deposited bales.

3,373,883
BARGE UNLOADING SYSTEM
Werner Ostberg, Milan, and Michael D. Challis, Ann Arbor, Mich., assignors to Dundee Cement Company, Dundee, Mich.
Filed Nov. 17, 1966, Ser. No. 595,259
1 Claim. (Cl. 214—14)



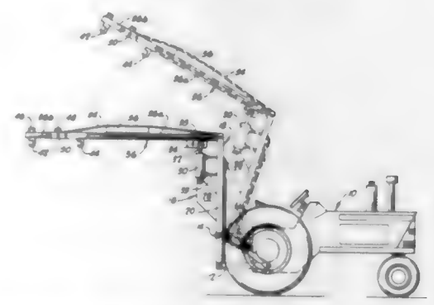
A cement unloading system for transferring dry cement from a barge to a highly elevated silo on a river bank employing an unloading barge with vacuum and pressure equipment.

3,373,884
SELECTIVE PNEUMATIC AND GRAVITY UNLOADING HOPPER CAR
George B. Dorey, Westmount, Quebec, Canada, assignor to Continental Transport Appliances Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Feb. 14, 1966, Ser. No. 526,996
4 Claims. (Cl. 214—83.18)



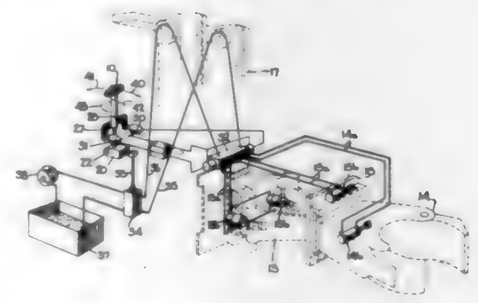
1. In a hopper car having an opening for selective discharge of lading either by gravity or pneumatic action, in combination,
(a) a sliding gate for the opening;
(b) a four-sided chute-like receptacle below the gate for directing the flow of lading from the discharge opening,
(c) one of the sides of the receptacle extending transversely beneath the gate,
(d) laterally spaced extension wall members projecting forwardly from the said transverse wall to support the gate in open position,
(e) a shiftable floor member arranged to funtion in one position as closure for the receptacle for operation as a pneumatic unloader and shiftable to a storage position beneath the extension wall members to adapt the car for gravity unloading, and
(f) a conduit system extending transversely to the path of movement of the gate including:
(1) a centrally located box-like casing disposed between the extension wall members in juxtaposition to the transverse wall of the receptacle,
(2) a communicating opening between the chute receptacle and the casing portion of the conduit for admission of lading into the conduit system,
(3) end conduit sections extending laterally from the respective side extension walls to present air and lading exit openings for connection with a source of reduced pressure,
(4) air inlet openings at the opposite ends of the central casing section for the admission of entraining air,
(5) valves for metering the entraining air,
(6) control rods for operating the air inlet valves from a location adjacent the remotely located exit opening whereby the stream of air enters at the distal end of the casing and flows along the length of the communicating opening.

3,373,885
LOADING ATTACHMENT
Virgil E. Allison, Rte. 1, Box 92, Morris, Okla. 74445
Filed July 8, 1966, Ser. No. 563,876
3 Claims. (Cl. 214—131)



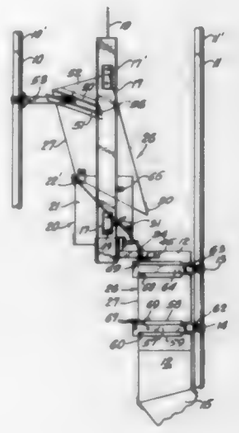
A load-lifting apparatus useful in combination with a self-powered vehicle having a three point hitch and including a vertically extending boom supporting assembly of generally rectangular configuration, an elongated boom having an end pivotally connected to the upper end of the boom supporting member for pivotation about a horizontal axis, a hydraulic cylinder support plate secured to the boom supporting member intermediate its length, and a hydraulic piston and cylinder assembly spaced from the boom supporting assembly, supported at one of its ends by the hydraulic cylinder support plate and connected at its other end to the elongated boom between the ends thereof. The vertically extending boom supporting assembly includes a pair of horizontally spaced, parallel, vertically extending beams which are connected at their lower ends to the outer hitch links of the three point hitch, and which are connected at their upper ends to a horizontal rod which journals a transversely extending sleeve to which the pivoted end of the elongated boom is secured.

3,373,886
MULTIPLE LOAD MANIPULATOR
Bronislaus I. Ulinski, Jenkintown, Pa., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Sept. 22, 1965, Ser. No. 489,147
2 Claims. (Cl. 214—653)



Relates to a control handle for controlling the manipulation of at least three load manipulating devices on the carriage of a lift truck. Movement of the handle in a fore-and-aft direction controls the direction of fluid to an electromagnetic valve which in turn controls fluid to each of the three load manipulating devices. The arrangement is such that control of any one device may be made in any fore-and-aft position of the control handle simply by rotating the control handle to actuate the electromagnetic valve.

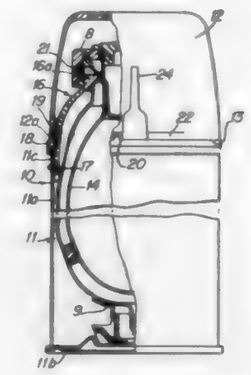
3,373,887
MATERIAL HANDLING APPARATUS WITH A TWO SECTION BUCKET ASSEMBLY
Fritz J. Nesslinger, College Point, and Arthur C. Borgman, Franklin Square, N.Y., assignors to Harsco Corporation, Harrisburg, Pa., a corporation of Delaware
Filed Feb. 3, 1966, Ser. No. 524,803
6 Claims. (Cl. 214—703)



1. Material handling apparatus for installation and operation in hoisting towers and wherein a bucket open at its top end is mounted in operative relation to a hopper open at its top end, said apparatus including hoisting means arranged and adapted to move said bucket vertically in a hoisting tower, said bucket including a base having an inclined material supporting floor and spaced side walls, a back wall and an open front, said hoisting means operative to limit the movement of said base to a vertical rectilinear path, and a tiltable top pivotally supported on said base and having a front wall and spaced side walls positioned for telescoping with and between the side walls of said base to retain a charge of concrete in the bucket, a latch pivoted on said base at each side thereof and operatively arranged and adapted to releasably retain said top in bucket closing and material confining position, latch actuating means on said hopper operatively positioned in the path of vertical movement of said latch and arranged and adapted to move the latch angularly into top releasing position with upward travel of the bucket and into top latching position with downward travel of the bucket, and top tilting means operatively arranged and adapted to tilt the top toward material releasing position with upward travel of said bucket and to return said top to bucket closing position with downward travel of said bucket, and a detent positioned and adapted to limit said angular top releasing movement of said latch.

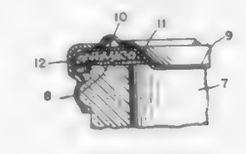
3,373,888
NON-BINDING CONTAINER AND COVER
George W. Fuller, Hampton, Conn., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Filed Apr. 3, 1967, Ser. No. 627,734
4 Claims. (Cl. 215—13)

Provides vacuum ware comprising an evacuated filler received in a holder having a breast at its upper end and a cup or cover threaded onto the breast, particularly characterized by co-engageable radial camming means on the



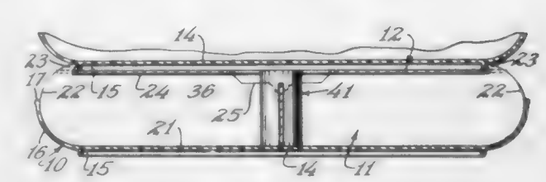
cup and breast which limit the threading-on movement of the cup and limit frictional binding between the cup and breast to less than the entire engaged areas thereof.

3,373,889
PRESSURE SEALING JAR LID
John S. Giles, Wayne, Ill., assignor to Phoenix Metal Cap Co. Inc., Chicago, Ill.
Filed May 31, 1961, Ser. No. 113,719
1 Claim. (Cl. 215—40)



1. A sealing lid for face-to-face engagement with the smooth lip of a receptacle, said lid having an inner homogeneous thermoplastic lining formed of a synthetic thermoplastic polymeric material containing wholly embedded discrete particles of inert material with those particles adjacent the surface of said lining projecting out of the normal plane of said surface and although wholly coated by said thermoplastic material producing a rough uneven surface pressure resistant at atmospheric temperature to form a rough venting surface but being yieldable at higher processing temperatures to form a sealing surface.

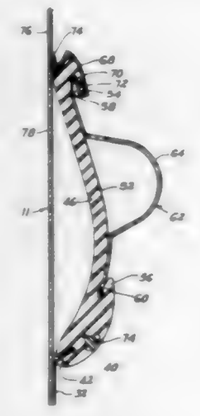
3,373,890
CONTAINER FOR CONTAINING FROZEN FOOD
Paul K. Schilling, St. Paul, Minn., assignor to Plastics, Inc., St. Paul, Minn., a corporation of Minnesota
Filed July 5, 1966, Ser. No. 562,814
6 Claims. (Cl. 220—22)



The invention relates to a serving dish structure designed for use by airlines and the like. The structure includes a dish having upwardly extending peripheral walls terminating in a peripheral edge. A divider structure is provided to divide the dish into sections. The divider section extends above the level of the peripheral dish edge and

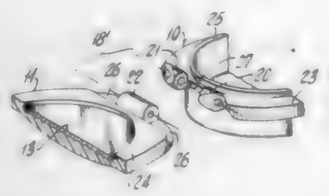
supports a disc-like cover in spaced relation to the dish. The dish is provided with a circular supporting flange extending downwardly therefrom. The divider structure includes upwardly extending projections at their outer extremities, extending above the level of the cover which is radially slotted to accommodate the projections. The circular flange of the dish is designed to extend between the upwardly extending projections of the divider structure of a similar container, holding them vertically aligned.

3,373,891
SEAL FOR FLOATING TANK ROOF
Joseph V. Kidd, Houston, Tex., assignor to Helmerich & Payne, Tulsa, Okla., a corporation of Delaware
Filed Apr. 6, 1965, Ser. No. 445,919
5 Claims. (Cl. 220—26)



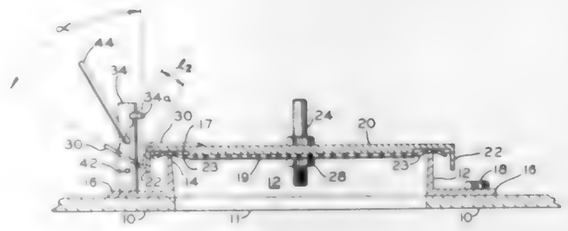
A secondary seal connecting a floating roof of a storage vessel to the wall of the storage vessel. The seal is arcuately configured and has a stiffening member positioned thereon. A sleeve is provided on the upper surface of the seal adjacent the sealing lip, the sleeve being less resilient and of a lower coefficient of friction than the sealing lip.

3,373,892
LADY'S COMPACT CONSTRUCTION
William James Landen, Cheshire, Conn., assignor to The International Silver Company, Meriden, Conn., a corporation of Connecticut
Filed Mar. 18, 1966, Ser. No. 535,400
1 Claim. (Cl. 220—31)



The invention contemplates essentially a two-piece plastic container construction, particularly useful as a lady's compact, wherein the cooperative hinge elements are integrally formed upon molding the lid or cover part and the body part, respectively, assembly being completed merely by press-fit insertion of a hinge pin through aligned bores in the hinge elements. The hinge elements are so configurated that, when the container is closed, the hinge is virtually unnoticable from above, so that the aesthetic appearance of the container design may be unmarred; the configuration of the hinge elements is further such that the lid may be opened at least 180° from closed position, and to an extent permitting positive support of both lid and body parts on a single horizontal working surface, to facilitate automated assembly of mirror and powder-cake elements into the container.

3,373,893
FLOATING HINGED COVER
Evalds Dunkelis, Glen Ellyn, Ill., assignor to GPE Controls, Inc., Morton Grove, Ill., a corporation of Illinois
Filed Mar. 2, 1966, Ser. No. 531,226
8 Claims. (Cl. 220—38)

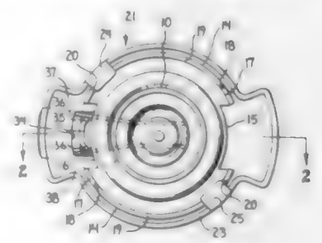


1. In a removable hinged closure assembly adapted to permit access through an opening in a wall and having a seat surrounding said opening and a cover movable between open and closed positions, said cover being adapted to engage said seat in said closed position, the combination of:

a post member assembly affixed to said wall and extending in a first direction;

and a hinge member attached to said cover, a clearance portion between two edges of said hinge member at least partially surrounding said post member, the line between said two edges being arranged at an angle to said first direction when said cover is in a closed position, whereby said edges fit more closely about said post member assembly when said cover is in a closed position than when said cover is tilted toward an open position.

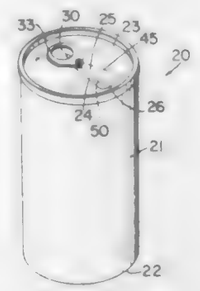
3,373,894
LOCKING, PRESSURE-RELIEF RADIATOR CAP
Glen A. Johnson, Connersville, Ind., assignor, by mesne assignments, to Stant Manufacturing Company, Inc., a corporation of Delaware
Filed Oct. 1, 1965, Ser. No. 492,041
5 Claims. (Cl. 220—40)



A cap for the filler neck of the radiator of the cooling system of an internal combustion engine, said cap including means engageable with a cammed surface associated with such a filler neck to secure said cap in place, a valve which is resiliently held in sealing relation with the mouth of such a filler neck when such means is so engaged, a lever operable while said means is so engaged to lift said valve out of such sealing relation, and means moving with said lever and cooperating with a portion of a conventional filler neck to restrain the cap against

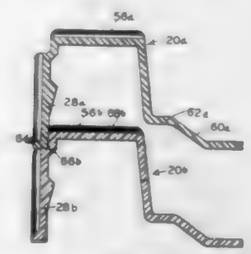
movement tending to disengage said first-named means until said lever has been operated so to lift said valve.

3,373,895
PULL TAB OPENING MEANS AND METHOD OF MAKING SAME
Horst F. W. Arfert, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed May 17, 1966, Ser. No. 550,759
32 Claims. (Cl. 220—54)



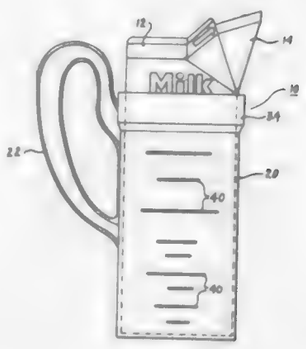
1. A container means having non-detachable opening means in wall means thereof comprising, first and second elongated strip means provided in said wall means alongside each other and having common end means, said first strip means having fastening means in its end portion arranged opposite said common end means and said second strip means having attached end means attached to said wall means adjoining said fastening means, and pull means fastened to said first strip means by said fastening means, said first and second strip means being easily and sequentially severed to define an opening in said wall means by pulling said pull means with a force of comparatively small magnitude in a direction generally transverse said wall means to thus form combination strip means, whereby said combination strip means is held to said wall means by said attached end means and has an overall length defined by said first and second strip means pulled approximately end to end while being held together by said common end means, said overall length enabling said combination strip means to be moved away from said opening for easy dispensing of the contents of said container means therethrough.

3,373,896
CONTAINER LID
Paul Davis, Beverly, Mass., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland
Filed Jan. 3, 1966, Ser. No. 518,054
10 Claims. (Cl. 220—60)



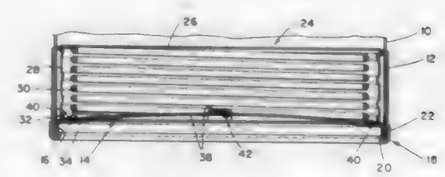
Recessed container covers of improved design are provided for use with tub-type containers. The recessed covers define an overfill channel and preferably define complementary stacking means enabling positive stacking and rapid release of an individual cover from a stack.

3,373,897
CARTON HOLDER AND CONTAINER
Clifford L. Haines, P.O. Box 3, Bristol, Ind. 46507
Filed Sept. 17, 1965, Ser. No. 488,005
4 Claims. (Cl. 220—85)



A holder for milk cartons and the like having four panels forming a rectangular holder portion with side walls enclosing a substantial portion of the side walls of the carton. A handle attached to one of the panels extends upwardly above the side walls to a point near the top of the carton, and a lug disposed in the inner wall of one of the panels near the bottom thereof holds the milk carton in the holder.

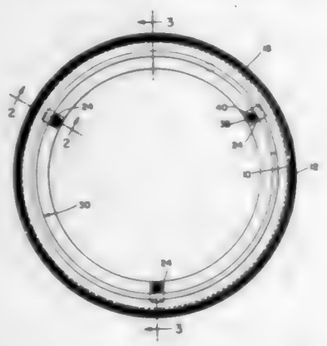
3,373,898
ROVING CAN WITH CROSS MEMBER SPRING RETAINER
Herbert J. Witzgall, Norristown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 31, 1966, Ser. No. 539,136
2 Claims. (Cl. 220—93)



1. In a container comprising a roving can of generally cylindrical configuration, a container body substantially open at the center, a bottom member for the container body, said bottom member including a peripheral depending flange juxtaposed to the body interior, and an annular inwardly directed flange formed substantially as a continuation of said depending flange, a movably mounted piston in said can having a piston depending flange thereon, a coil spring interposed between the upper surface of said piston, surrounded by said piston depending flange, and supported at its lower end upon said bottom member, said spring, upon depression of said piston by material weight thereon, being confined within a space defined by the piston, the piston depending flange and the can bottom member, cross-bracing disposed over the open portion of said container body and being affixed to said annular flange and adapted to serve as a support for said spring which carries at its upper end said movably mounted piston, whereby spring pressure resulting from material carried upon the piston is resisted by said cross-bracing and said bottom member, and said open

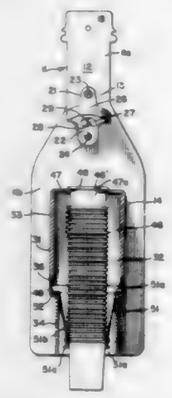
portion of said container body being adapted for substantially free discharge of material from the interior of the container below the piston.

3,373,899
ROVING CAN WITH CLAMP SPRING RETAINER
Herbert J. Witzgall, Norristown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 31, 1966, Ser. No. 539,218
6 Claims. (Cl. 220—93)



A roving can having an open bottom. Clamping means connect a spring to the bottom of the can with the spring disposed to carry a movable piston thereon.

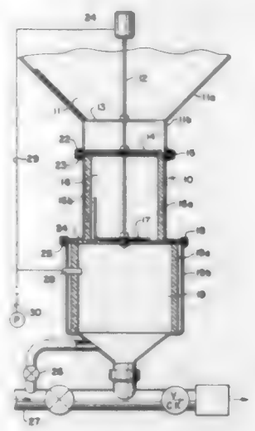
3,373,900
COMBINATION CUP DISPENSER AND CAP REMOVER
David A. Staley, Calhoun Falls, S.C.
(101 Wayside Drive, Laurens, S.C. 29360)
Filed Jan. 18, 1967, Ser. No. 610,171
8 Claims. (Cl. 221—199)



A support for the combination of a cup dispenser, a bottle cap remover and a flange on the dispenser adapted to accommodate a cup as a receptacle for removed bottle closures.

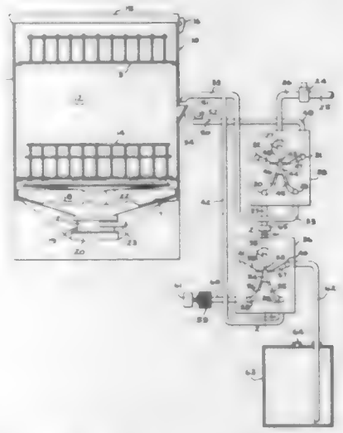
3,373,901
DISPENSER, MIXER AND FEEDER
Anton Pfeuffer, 301 E. 78th St., New York, N.Y. 10021
Filed Jan. 17, 1966, Ser. No. 521,132
3 Claims. (Cl. 222—57)

An even flow-rate device is coupled to a hopper for effecting even flow-rate of bulky material passing therethrough. The even flow-rate device comprises a first perforated member disposed adjacent the hopper and having a predetermined number of openings therethrough. A dispenser is coupled to the even flow-rate device for dispensing the bulky material to a mixing chamber. The even flow-rate device comprises a second perforated member disposed adjacent the dispenser and having a predetermined number of openings therethrough. The openings in the first and second perforated members are conically



shaped to form a smaller and a larger opening at the opposite faces of the perforated members and cutting edges are formed around the smaller openings of the first and second perforated members.

3,373,902
LIQUID DISPENSING MEANS
John C. Laufer, Sr., Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed May 25, 1966, Ser. No. 552,842
8 Claims. (Cl. 222—133)

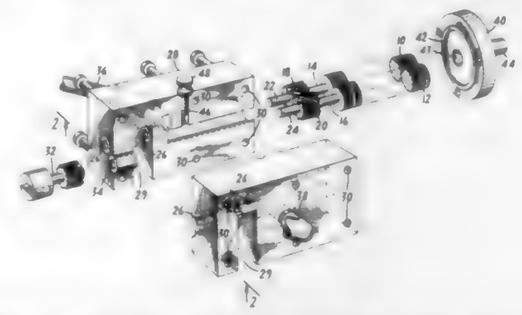


Liquid additive dispensing means for a washing machine. The dispensing means includes fluid amplifier means comprising a pair of fluid amplifiers. The first fluid amplifier selectively directs incoming water either directly into the washing machine wash chamber or into the second amplifier. When the incoming water is directed into it, the second amplifier aspirates the additive from a container and directs a mixture of it and the water into the wash chamber.

3,373,903
SELF-PURGING MIXING AND DISPENSING APPARATUS
Kenneth V. Hardman, Upper Montclair, and Alfred J. Anderson, Livingston, N.J., assignors to Hardman Incorporated, a corporation of New Jersey
Filed May 20, 1966, Ser. No. 551,663
10 Claims. (Cl. 222—142)

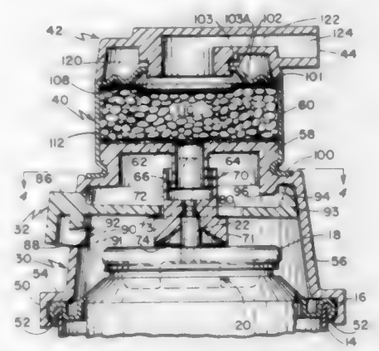
A mixing and dispensing apparatus is provided with two or more rotatable, screw-threaded rods mounted within a closely adjacent housing, the screw threads of each rod being interleaved with those of the adjacent rod. As the rods are rotated, two or more liquids are flowed

at different points into the space between the housing and screw-threads, and thereby the liquids are uniformly admixed and advanced under positive pressure out through a discharge opening. Continued rotation of the rods with



cessation of the liquid flow purges the space between the housing and the screw-threads of liquid residue, and this is aided by venting the space to the atmosphere to eliminate the pulling of vacuum or cavitation of liquids within the interior of the apparatus.

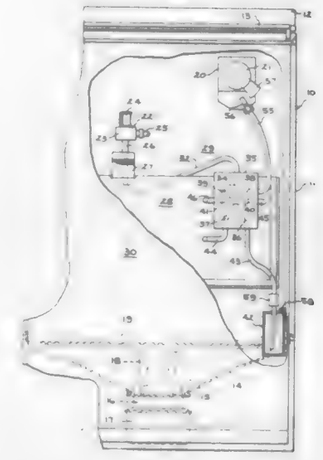
3,373,904
HEATER FOR MATERIAL DISPENSED FROM A CONTAINER
Alan B. Lowry, Canton, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed May 5, 1966, Ser. No. 547,898
18 Claims. (Cl. 222—146)



A heat exchanger for an aerosol soap dispensing package includes an aluminum chamber 1.35 inch in diameter, of 0.025 inch wall thickness in which is disposed a mass of aluminum shot at least 0.050 inch in diameter which is compressed to a density of 85% of solid aluminum and a resulting height of 0.42 inch. Discs of expanded aluminum are positioned above and below the compressed mass of shot. The inlet of the chamber is connected via a sleeve coupling to the valved outlet of the pressurized dispensing package and the 0.100 inch diameter outlet of the chamber opens into a larger rectangular discharge nozzle. The sleeve coupling has a flange which is engaged by a fulcrumed actuator lever which, when moved down, opens the package's valve. In latched position the enlarged end of the actuator lever fits tightly into the heat exchanger support shroud to minimize entry of and accumulation of moisture within the shroud.

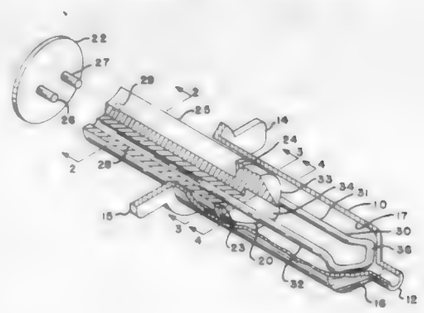
3,373,905
LIQUID DISPENSING MEANS
John C. Laufer, Sr., Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed June 17, 1966, Ser. No. 558,371
9 Claims. (Cl. 222—193)

1. Means to dispense a liquid from a container into a receptacle comprising:
   (a) a fluid amplifier having a main inlet, at least one control inlet, a first outlet and a second outlet,
   (b) means interconnecting said first outlet with the container,
   (c) said second outlet communicating with the receptacle,
   (d) said means interconnecting said first outlet with the container including means to prevent flow in a direction from said first outlet toward the container but to allow flow in the opposite direction,
   (e) means interconnecting said main inlet with a source of liquid under pressure, and



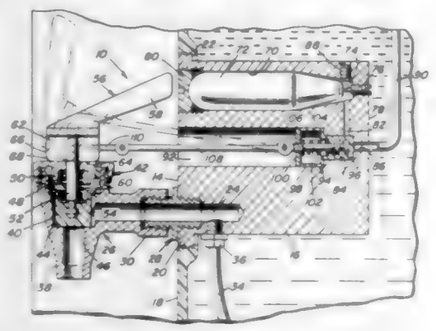
   (f) means to control the admission of control fluid to said control inlet whereby the liquid entering said fluid amplifier through said main inlet is selectively directed out through either of said first and second outlets,
   (g) said fluid amplifier being adapted to aspirate liquid from the container in through said first outlet to mix with the liquid entering said main inlet when the control fluid entering through said control inlet directs the flow out through said second outlet.

3,373,906
SYRINGE WITH STIRRER
Edward G. De Hart and Miner D. Allen, Cambridge, Mass., assignors to De Haart, Inc., Arlington, Mass., a corporation of Massachusetts
Filed Feb. 10, 1967, Ser. No. 615,144
4 Claims. (Cl. 222—235)



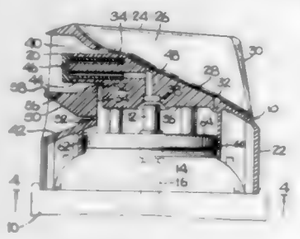
A plastic syringe with a stirrer which telescopes into the piston as the syringe is discharged is described. This device permits the use of syringe as sales package and dispensing device for preparations which must be mixed or blended just prior to use. The embodiment shown employs a hairpin-like loop, the legs of which slip into longitudinal holes in the piston or plunger of the syringe. Mixing requires the rotation of stirrer and piston within the syringe cylinder.

3,373,907
CONTROL UNIT FOR LIQUID DISPENSING
John A. Batrow, P.O. Box 402,
Branford, Conn. 06406
Continuation of application Ser. No. 553,347, May 27, 1966. This application Apr. 27, 1967, Ser. No. 634,147
10 Claims. (Cl. 222—399)



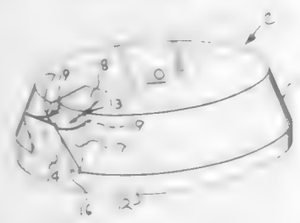
A self-contained liquid dispensing unit, mountable on a liquid container, incorporating a pressurized gas container and means for effecting a controlled introduction of the gas into the liquid container solely during the dispensing of the liquid.

3,373,908
ACTUATOR CAP WITH FRANGIBLE GUARD
Philip L. Crowell, Racine, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Dec. 13, 1965, Ser. No. 513,426
3 Claims. (Cl. 222—402.13)



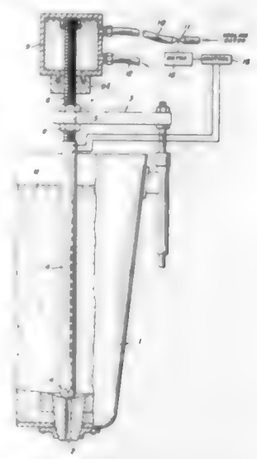
An overcap for aerosol dispensing containers having a removable lock member normally positioned to prevent discharge, wherein said overcap including the lock member is of unitary molded construction.

3,373,909
CLOSURE CAP AND POURING SPOUT
Samuel L. Belcher, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 15, 1966, Ser. No. 601,979
2 Claims. (Cl. 222—531)



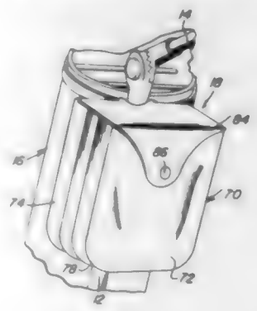
This invention is a dispensing-type of closure cap comprising a disk-like top or panel, at the periphery of which is a depending flared wall which is connected at its lower margin to a coaxial cylindrical attaching skirt for securing the cap to a container, the flared wall having a dispensing opening and pour-spout with the latter hinged to the cap at about the juncture of the flared wall and skirt.

3,373,910
STOPPER ROD WITH TEMPERATURE RESPONSIVE COOLING MEANS
Crawford B. Murton, Churchill Borough, Allegheny County, Pa. (1906 Brushcliff Road, Pittsburgh, Pa. 15221)
Filed Oct. 20, 1965, Ser. No. 498,527
6 Claims. (Cl. 222—559)



A stopper rod consisting of relatively high conductivity material with a collant being applied to the top of the rod only to extract heat conducted through the rod from its lower end.

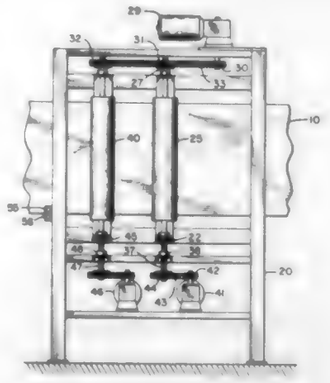
3,373,911
GOLF CART MOUNTED SHOE PACK
Melvin J. Kebelbeck, 304 Sunnyside Drive, Eugene, Oreg. 97402
Filed Nov. 25, 1966, Ser. No. 597,106
4 Claims. (Cl. 224—29)



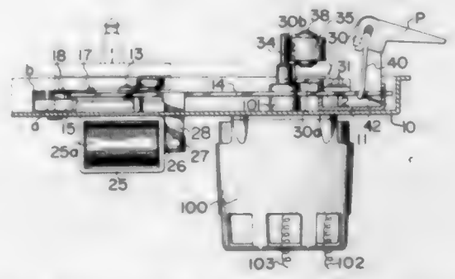
This disclosure is directed toward a receptacle adapted for attachment to a golf bag cart and to removably alternately receive therein street and golf shoes and also to a removable weatherproof cover for the receptacle.

3,373,912
AUTOMATIC POSITIONING OF CONTINUOUSLY MOVING WEBBING
James W. Toensing, Minneapolis, Minn., assignor, by mesne assignments, to Buckbee-Mears Company, St. Paul, Minn., a corporation of Minnesota
Filed Oct. 14, 1965, Ser. No. 495,955
11 Claims. (Cl. 226—20)

For handling a strip of webbing which is continuously moving lengthwise, rollers are provided for laterally positioning the web. A pair of rollers lie across the webbing on opposite sides of the web and pinch the webbing between them when they are moving the webbing one way or the other transverse to the direction of travel of the webbing. The rollers have only a limited degree of travel crosswise of the webbing so in the event they have not properly positioned the webbing when they reach this limit, they are separated, returned to a starting position, then again closed together to pinch the webbing and again moved across the webbing to position the webbing. These steps are repeated until the webbing is properly located. The positioning is accomplished by a single pair of rollers or by two cooperating pairs. When the rollers of one pair are closed together pinching the webbing, the rollers of the other pair are separated.



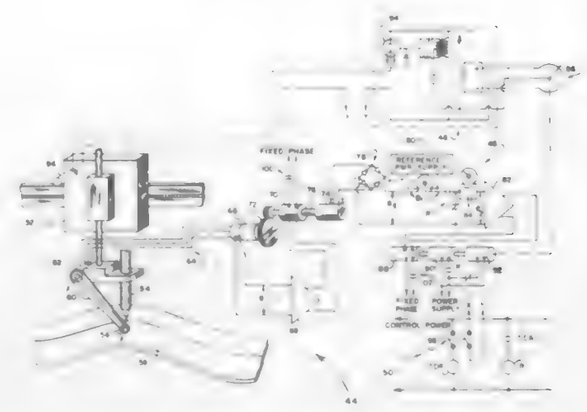
3,373,913
TAPE DRIVE CONTROL MECHANISM OF MAGNETIC TAPE RECORDERS
Katsuya Atsumi, Tokyo, Japan, assignor to Akai Electric Company Limited, Tokyo, Japan
Filed May 16, 1966, Ser. No. 550,502
Claims priority, application Japan, May 17, 1965, 40/28,655
4 Claims. (Cl. 226—176)



A tape drive control mechanism for a magnetic tape recorder having a plurality of control buttons for controlling a capstan drive arrangement includes a pinch roll mounted on a pivotable arm and connected by linkage to one of the buttons. When the button is depressed the pinch roll moves to engage the capstan, the linkage operates a rotatable cam carrying wheel which in turn operates a switch controlling an electromagnet linked to the linkage. The electromagnet pulls the linkage to engage the pinch roll with the capstan and is held in this engagement by a spring loaded locking member operating on the button after the cammed wheel allows the electromagnet to be deenergized.

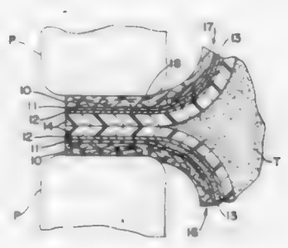
3,373,914
AUTOMATIC WELDING SPEED CONTROLLER
William A. Wall, Jr., Madison, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 30, 1965, Ser. No. 517,869
10 Claims. (Cl. 228—8)

1. In a device for welding curved surfaces, an automatic welding torch speed controller comprising:
(a) a welding torch mounted on a carriage having a carriage drive motor,
(b) a velocity tracker, responsive to the movement of the torch,
(c) an analog generator operatively connected to the velocity tracker, for generating a voltage proportional to the instantaneous speed of the tip of said torch,
(d) reference voltage supply means in circuit with the said analog generator, for supplying a voltage representing a desired constant speed for the tip of the welding torch,



(e) servoamplifier means connected to the outputs of the said analog generator and the said reference voltage supply means for comparing the two voltage outputs and furnishing a difference voltage,
(f) motor governor means for said carriage drive motor, connected to said servoamplifier means, whereby the speed of the motor may be controlled in accordance with the difference voltage, so as to maintain a substantially constant work speed for the tip of the said welding torch.

3,373,915
MOLDABLE POUCH MATERIAL
William E. Anderson and George P. Wiederecht, Bloomsbury, N.J., assignors to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,363
9 Claims. (Cl. 229—3.5)

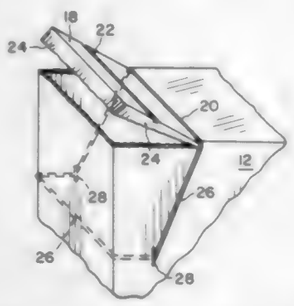


The disclosure is directed to a laminated packaging material including an outer glassine layer moldably bonded to an inner metal foil layer by a wax layer and including a continuous heat activatable coating interposed between the glassine and foil layers, which heat activatable layer is adapted to unite the glassine and foil layers upon subjecting said laminate to heat sealing temperatures and pressures.

3,373,916
CONTAINER DISPENSER AND CLOSURE
Anthony Montagano, 45 Eastview Ave., Pleasantville, N.Y. 10570
Filed Apr. 3, 1967, Ser. No. 628,007
7 Claims. (Cl. 229—7)

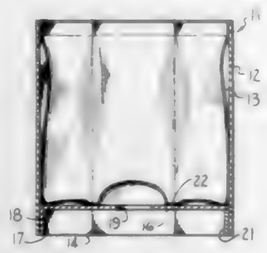
A dispenser and closure arrangement for a container

in which the flap of the closure element, when lifted from the container, automatically remains open and, when



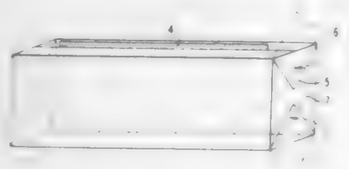
closed, automatically retains the closure element in a sealed position on the container.

3,373,917
FOLDABLE CONTAINER
Robert C. Cox, 600 16th St., Oakland, Calif. 94612
Filed May 10, 1966, Ser. No. 548,954
10 Claims. (Cl. 229—14)



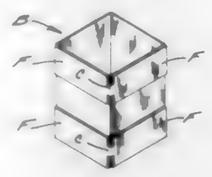
A foldable container is described which is erectable from a substantially flat collapsed condition to a distended condition of expanded volume. The container includes a flexible liquid impervious liner which is secured adjacent the upper end of a foldable outer casing of form retentive material so as to depend from such upper end into the casing interior upon erection. The container also includes a brace element which is hingedly secured to the interior of the casing adjacent its lower end so that it may be selectively positioned to brace a casing in distended position to prevent collapse thereof, and simultaneously provide its supporting base to the lower end of the liner.

3,373,918
MOISTURE PROOF PACKAGE
Adam Krings, Bonn, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Aug. 9, 1966, Ser. No. 571,223
Claims priority, application Germany, Sept. 2, 1965, D 31,896
6 Claims. (Cl. 229—14)



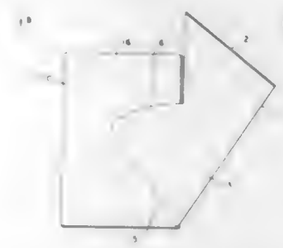
The present disclosure relates to packages. More particularly, the present invention relates to a protective covering for the moisture-proof packaging of objects, for example, ammunition having calibres from 20 to 40 millimeters wherein a six-sided rectangular box is folded from a flat rectangular pouch sealed on three edges, open on the fourth edge and having an air exhaust tube.

3,373,919
COMPOSITE PACKAGE
Wilbur A. Schaich, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Original application July 22, 1964, Ser. No. 385,831, now Patent No. 3,324,214, dated June 6, 1967. Divided and this application Feb. 13, 1967, Ser. No. 616,755
1 Claim. (Cl. 229—14)



A composite package comprising a continuous liner member positioned in a paperboard box having internal surfaces wherein said liner member contacts said internal surfaces in point-by-point contact.

3,373,920
CONTAINER
Yukio Kusunoki, 19 Kakano-cho, Toyama-shi, Japan
Filed Feb. 8, 1966, Ser. No. 536,169
Claims priority, application Japan, May 6, 1965, 40/35,521
3 Claims. (Cl. 229—23)



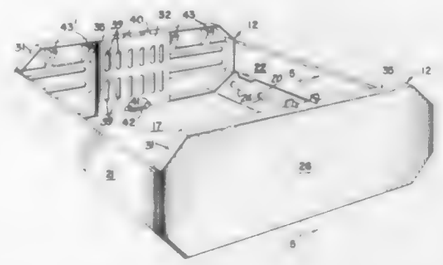
A container having generally rectangular lid and main body members folded from paperboard blanks and the like, characterized in that the body member has an open top and that the lid member is open at each end and includes a bottom wall contained between parallel lateral walls of the main body member, a pair of side walls each including at one vertical edge an intermediate portion carrying an arcuate guide surface, and a top wall. The aforementioned intermediate portions of the side walls of the lid member extend through corresponding angularly arranged linear slits contained within the lateral walls of the main body member, the length of the slits being equal to the radius of curvature of the arcuate guide surfaces.

This invention relates to a container made of paper, plastics, or the like. The container of this invention has a lid means whose guide portion is inserted through the slit of the main body, thus rendering the lid means movable, which opens and closes the upper side of the main body in accordance with the movement while pushing the bottom up and down obliquely.

3,373,921
SHIPPING CONTAINER
Walton B. Crane, Arcadia, Calif., assignor to Allied Plastics Company, Los Angeles, Calif., a corporation of California
Filed Nov. 17, 1966, Ser. No. 595,097
14 Claims. (Cl. 229—23)

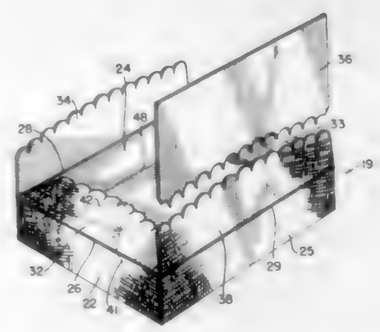
1. A tray-like container which is fabricated from a blank formed of a relatively thin sheet material and a

pair of rigid end frame members, each of which has a compressive strength substantially greater than that of said blank, said blank providing a bottom wall forming panel and side wall forming panels which form, when the container is set up, a bottom wall and side walls connected to the side edges of the bottom wall, said end frame members each having planar surfaces of substantial widths along at least portions of its top and bottom edges and said end frame members being positioned, one each, at opposite ends of said bottom wall forming panel at substantially right angles thereto with the bottom edge surfaces in engagement therewith and projecting upwardly



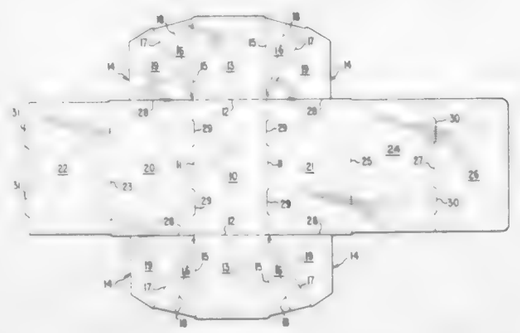
therefrom at substantially right angles, connecting panel means connected to said side wall panels at the opposite ends of said blank and end panel means connected to said bottom wall forming panel at the opposite ends thereof, said connecting panel means and said end panel means at each end of said blank being disposed in overlying relationship with the associated one of said frame members, and means securing said connecting panel means and said end panel means in such relationship to the associated one of said end frame members, whereby the weight of a plurality of like containers, when disposed in stacked relation, is supported by said end frame members.

3,373,922
CONTAINER AND BLANKS FOR MAKING THE SAME
Richard M. Watts, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,537
19 Claims. (Cl. 229—33)



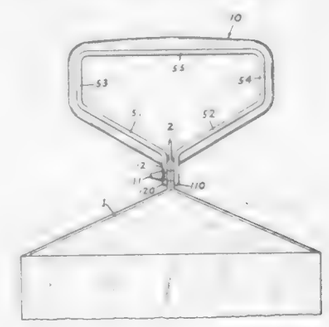
This disclosure relates to a preassembled collapsible container which serves the dual purpose of containing a product, such as a food product, for example, for sale thereof and then may be used to define a comparatively deep serving receptacle or dish from which such food product may be eaten merely by severing away a portion of the top wall of such container and folding the remaining portion of such top wall outwardly to define vertical extensions for its side walls.

3,373,923
EXPANDABLE TRAY CARTON
Homer A. Martelli, Westwood, N.J., assignor to Union Camp Corporation, New York, N.Y., a corporation of Virginia
Filed Aug. 12, 1966, Ser. No. 572,082
1 Claim. (Cl. 229—34)



An expandable carton comprising bottom, sides and ends, the ends having flaps on each side, each flap comprising a scored web portion and a terminal portion, each side having a hinged overlapping portion, the overlapping side portions being provided with locking lips fitting into slots in the bottom. When the carton is assembled, the end flaps are folded at 90° and are sandwiched between the sides and their overlapping portions, as the latter portions are folded over to fit within the carton, with the locking lips inserted in the bottom slits. The outer edges of the web and terminal portions are so shaped that the ends move freely to expand the carton until the outer edges of the terminal portions contact the hinge portion connecting the sides and their overlapping portions.

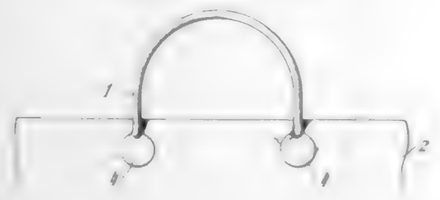
3,373,924
CONTAINER HANDLE
Frank R. Linda, South Norwalk, Conn., and Leigh D. Leiter, Philadelphia, Pa., assignors to International Paper Company, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 521,362, Jan. 18, 1966. This application July 6, 1966, Ser. No. 565,045
16 Claims. (Cl. 229—52)



A handle to assist in carrying, moving and pouring from paperboard containers, in which the handle is constructed from a single loop of material provided with a horizontal hand grip side, two vertical sides respectively attached to the two ends of the hand grip side, and two inwardly sloping sides, each of which is attached at one end to a respective one of the vertical sides at a selected acute angle, and each of which terminates at the other end in an element of a closure mechanism, the length of each sloping side and said acute angle being selected to bring said ends of said sloping sides which terminate in

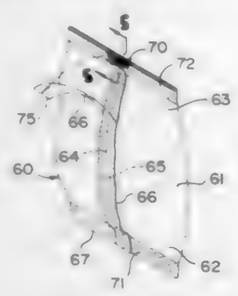
closure mechanism elements into contact with one another.

3,373,925
CARRIER BAGS AND HANDLES FOR ATTACHMENT THERETO
Harry Frederick Gatward, 72 Tottenham Court Road, London, England
Filed Aug. 12, 1965, Ser. No. 479,084
8 Claims. (Cl. 229—54)



A paper bag having a handle of plastics material heat sealed thereto. The handle being formed of a ribbon-like strip which can be helically wound to form a gripping portion. The bonding of the handle to the bag being reinforced by patch securing the handle ends between the bag and patch.

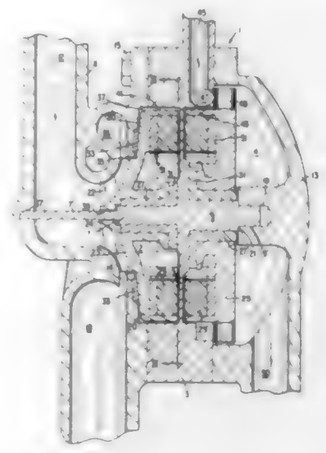
3,373,926
SEAMED CONTAINER WITH EASY OPENING FEATURE
Walter A. Voigtman, Sr., Beaumont, Tex., and Florren E. Long, La Grange, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 14, 1965, Ser. No. 455,699
18 Claims. (Cl. 229—66)



1. A readily openable package comprising a generally tubular body, said body having first and second end portions, transverse sealing means sealing one of said end portions, means closing the other of said end portions, said body having contiguous longitudinal edge portions extending from said first end portion toward said second end portion, a sealing strip overlying said edge portions, means securing a major portion of said strip to said longitudinal edge portions, and means preventing said securing means from securing a minor tab portion of said strip to said one end portion whereby said tab portion remains free of said body and can be grasped and pulled for at least partially removing the major portion of the strip from the body incident to the removal of the packaged product through said body between the longitudinal edge portions thereof.

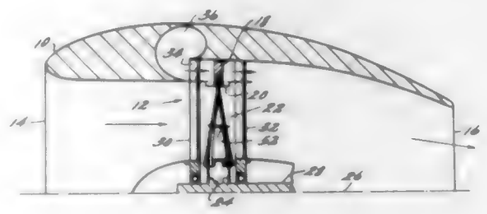
3,373,927
FLUID COMPRESSOR
Kenneth H. Miller, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed June 1, 1966, Ser. No. 554,417
6 Claims. (Cl. 230—116)

1. Fluid compression apparatus comprising:
a central frame member including a diaphragm formed thereon;
an impeller shaft on the diaphragm projecting substantially normal thereto;
impeller bearing means having an upstanding flange portion engaging said diaphragm;
an impeller mounted on said impeller bearing means, said impeller having blades formed thereon and a radially extending portion;
a cover connected to the central frame member and forming therewith a compressor section enclosing said compressor impeller, said cover having a process fluid inlet passage, a diffuser passage, a collection chamber, and a process fluid outlet passage formed therein;



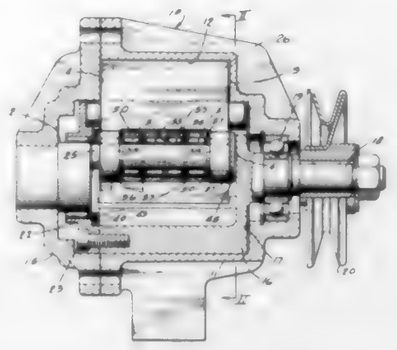
a thrust bearing affixed to the inner face of said cover for bearing engagement with the radially extending portion of said impeller;
magnetic means mounted on the back of said impeller on said radially extending portion; and
means positioned on the opposite side of the diaphragm magnetically coupled to said magnetic means for rotating said impeller.

3,373,928
PROPULSION FAN
John R. Erwin, Wyoming, Ohio, and Arthur P. Adamson, Marblehead, Mass., assignors to General Electric Company, a corporation of New York
Filed Aug. 29, 1966, Ser. No. 575,795
12 Claims. (Cl. 230—116)



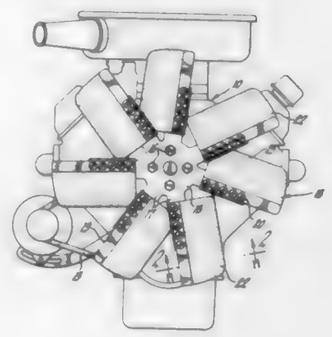
The invention is directed to a quiet aircraft propulsion fan that uses many short-chord airfoils in a bicycle-spoke arrangement to hold the tip turbine buckets. Angling and slanting of the airfoils provides triangular support for stiffness and the system employs the airfoils in a number which, multiplied by the speed, produces a minimum of 14,000 cycles per second or above the generally audible sound level.

3,373,929
VANE ASSEMBLY FOR ROTARY VANE COMPRESSORS
Donald W. Partain, Rocky River, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 15, 1965, Ser. No. 507,749
6 Claims. (Cl. 230—157)



Sliding vane type of pump or air compressor in which a rotor rotates about an axis eccentric of the axial center of the pump housing and sliding vanes extend from hubs journalled on anti-friction bearings mounted on a common shaft, concentric with the axial center of the housing for the compressor. In order to provide a pump in which the air has no entrained lubricant, the vanes have clearance with the wall of the pumping chamber. The hubs are arranged along the shaft in interleaving relation with respect to each other and positioner bearings in the form of washers are disposed between the interleaving hubs of the vanes. Other positioner bearings are disposed between the end hubs and opposite ends of the pumping chamber. These positioner bearings are made from materials capable of running as a bearing surface without lubrication. In order to keep lubricant leakage to a minimum, one end hub is sealed by a disc forming an end positioner bearing and the positioner bearings between the hubs take up clearance between the other hubs and seal the space between these hubs making it necessary for the lubricant to travel the entire length of the shaft if there should be any tendency for lubricant in the bearings to leak out.

3,373,930
FAN STRUCTURE
John D. Rom, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 29, 1966, Ser. No. 546,322
5 Claims. (Cl. 230—270)

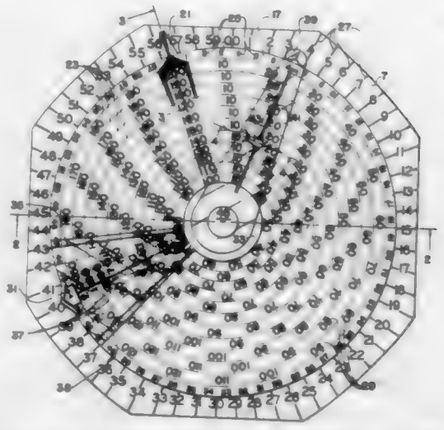


This invention relates to a speed and temperature-responsive fan having fan blades supported upon support arms extending outwardly from a fan hub and wherein the blades are spaced from the hub by the support arms. The blades are forward of a composite assembly of coextensive sheets of plastic and sheet steel bonded together by a thermosetting adhesive to provide a unitary blade structure responsive to rise of temperature to cause the blades to bend about the longitudinal blade axis to increase air displaced at any given speed of rotation and wherein the blades are responsive to increase in speed of rotation to decrease the air displaced at any given blade temperature upon increase in speed of rotation of the blade. The quantity of air displaced per revolution is a function of both fan blade temperature and speed which increases with temperature rise and decreases with increase of fan speed.

3,373,931
LOCKING AND ALARM DEVICE
Emil Mogler, Heilbronn (Neckar), Germany, assignor to Kassenfabrik Emil Mogler, Heilbronn (Neckar), Germany
Filed Oct. 22, 1965, Ser. No. 501,980
Claims priority, application Germany, Dec. 3, 1964, M 63,450
9 Claims. (Cl. 235—22)

A pre-settable locking device for preventing the unauthorized opening of a cash register drawer, which device includes a pivotable locking means movable between a locking position and an unlocking position, a plurality of positioning elements capable of being set in either one of two stable positions, and a plurality of levers arranged to be actuated from outside the drawer, the locking means being movable into its unlocking position for permitting the drawer to be opened only when those levers associated with positioning elements in one stable position are actuated, while those levers associated with the remaining positioning elements are not actuated.

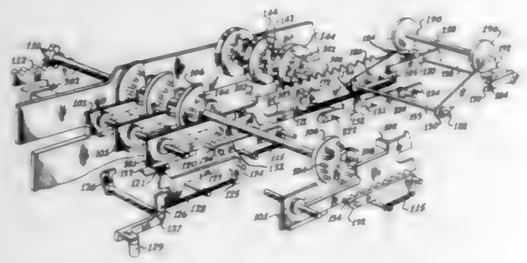
3,373,932
TIME, SPEED AND DISTANCE COMPUTER
John W. Copeland, 161 S. Oliver, Wichita, Kans. 67218
Continuation-in-part of application Ser. No. 436,129, Mar. 1, 1965. This application Oct. 20, 1965, Ser. No. 498,977
4 Claims. (Cl. 235—61)



This invention relates to computing devices, more particularly to computing devices for correlating time, speed and distance variables. Still more specifically this inven-

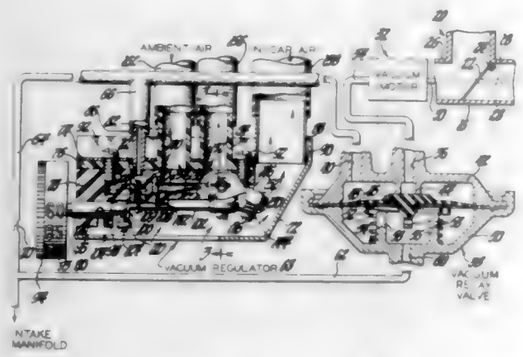
tion relates to computing devices which utilize linear scales that are easy to read and to interpolate, and which has a clock mechanism in conjunction therewith, which devices are simple to manipulate in operation. Additionally, this invention relates to a computing device easily usable by airline pilots to set forth current time past the hour, miles travelled from a given checkpoint, the estimated time of arrival, total flying time required, and time elapsed since passing last checkpoint.

3,373,933
MULTIPLE-COLUMN SETUP SYSTEM
Frederick W. Pfleger, 1152 Barbara Drive, Cherry Hill, N.J. 08034
Filed Mar. 28, 1966, Ser. No. 538,009
19 Claims. (Cl. 235—61)



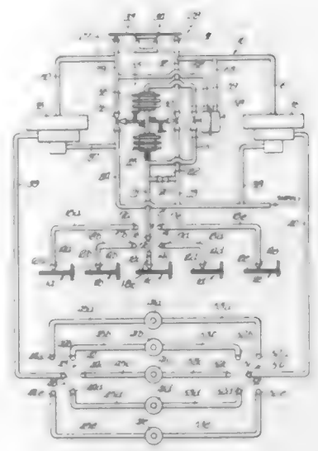
This invention is concerned essentially with a multiple-column setup mechanism wherein a plurality of setup members are respectively provided with operating members independently movable into and out of operative position. A cyclical drive is arranged for driving relation with the operating members in operative position, while control means effect movement of the operating members into and out of operative position and stop means are selectively locatable to interrupt shifting movement of the settable members.

3,373,934
AUTOMOTIVE TEMPERATURE CONTROL SYSTEM WITH INSIDE AND OUTSIDE AIR TEMPERATURE SENSING
William H. Kolbe, Birmingham, and Edward W. Yott, St. Clair Shores, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 611,928
7 Claims. (Cl. 236—13)



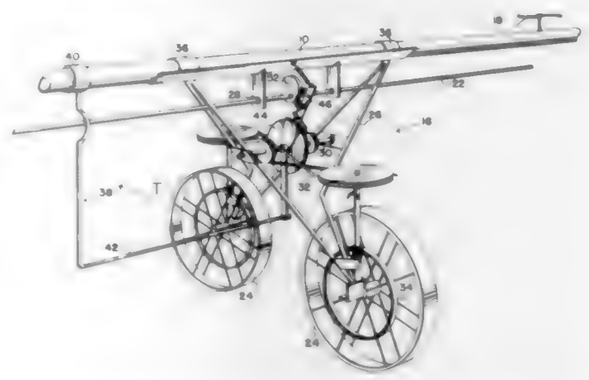
This invention relates to systems for automatically controlling the temperature of a passenger compartment in an automobile and includes a vacuum modulating valve for regulating heat flow with that valve being responsive to changes in ambient and in-car air temperatures.

3,373,935
MULTIPLEX PNEUMATIC CONTROL UNIT
David H. Thorburn, Oak Park, Ill., assignor to The Powers Regulator Company, Skokie, Ill., a corporation of Illinois
Filed Oct. 15, 1965, Ser. No. 496,629
10 Claims. (Cl. 236—82)



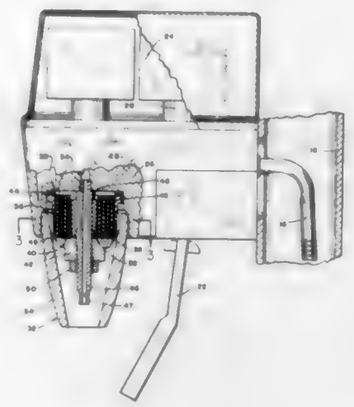
A multiplex digital pneumatic control system, employing a single signal generating device in conjunction with a plurality of analog pressure signal sources and a plurality of pressure pulse operated regulatory devices. The signal generating device is adapted to convert analog pressure signals to digital or pulsed pressure signals, and may employ negative feedback control. Switch means provide selective simultaneous connection of one each of the plurality of analog signal sources and the plurality of pulse operated regulatory devices with the signal generating devices.

3,373,936
IRRIGATION SYSTEMS
Rufus J. Purtell, Brownfield, Tex., assignor to The J. B. Knight Co. Inc., Brownfield, Tex., a corporation of Texas
Continuation-in-part of applications Ser. No. 26,636, Apr. 19, 1960, and Ser. No. 338,768, Jan. 20, 1964. This application Nov. 26, 1965, Ser. No. 509,900
13 Claims. (Cl. 239—1)



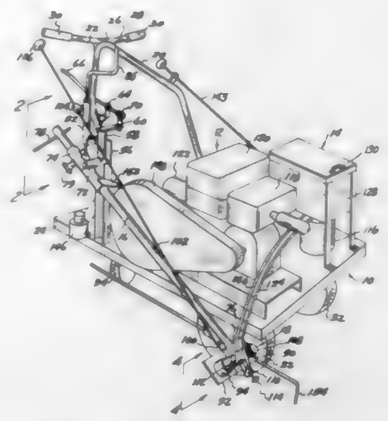
In an irrigation system, misalignment of a pipe supported by vehicles is detected by a stiff leg attached to the pipe. Upon misalignment the stiff leg moves a shield between a ratchet and dog, thus inactivating the drive to the vehicles.

3,373,937
CARBONATED WATER DISPENSING NOZZLE
Rudolph A. Yuza, Westchester, Ill., assignor to The Bastian Blessing Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 11, 1966, Ser. No. 541,548
9 Claims. (Cl. 239—11)



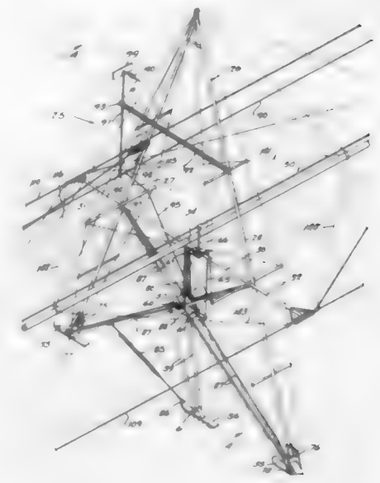
A carbonated water dispenser in which concentric sleeves are closely spaced in a radial direction to provide a nonturbulating and nonaccelerating flow at a gravity flow rate during dispensing operation and a capillary action during resting conditions for retaining CO_2 gas in the carbonated water while lowering the pressure thereon to atmospheric pressure for use.

3,373,938
BOOM DIRECTED SPRAY MARKING DEVICES
Harold C. Sweet, New Hudson, Mich., assignor to H. C. Sweet Co., Inc., New Hudson, Mich., a corporation of Michigan
Filed Mar. 7, 1966, Ser. No. 532,231
18 Claims. (Cl. 239—148)



A nozzle-supporting boom is mounted on a portable wheeled frame carrying a paint storage tank and a self-contained source of air pressure. A paint spray nozzle mounted on the boom can be rotated to selected positions to mark horizontal and vertical surfaces. The nozzle-carrying end of the boom can be raised and lowered as well as moved between lateral positions relative to the frame by the operator so that the nozzle can produce a stripe on a raised surface as well as the ground when the frame is advanced along a predetermined path by the operator.

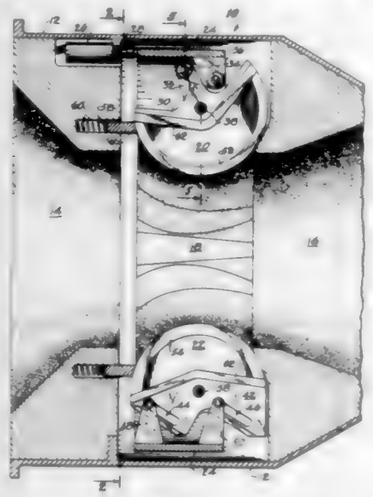
3,373,939
SELF-PROPELLED IRRIGATION SYSTEM OF THE RECIPROCABLE CABLE TYPE WITH MOBILE SUPPORTS ACTUATED BY PROPELLING SHOES
Leo J. Dowd, 117 S. Parkway, Columbus, Nebr. 68601
Filed July 1, 1966, Ser. No. 562,183
5 Claims. (Cl. 239—177)



1. A self-propelled irrigation system comprising an upstanding water-supply conduit, an elongated horizontally disposed water-distributing pipe having one end pivotally connected to said supply conduit for movement of said distributing pipe about said supply conduit as an axis, a main mobile support disposed transversely of said distributing pipe adjacent the other end thereof and fixedly carrying said distributing pipe, a plurality of discharge nozzles spaced along said distributing pipe between the ends thereof for spraying water onto the land as said distributing pipe moves about said supply conduit as an axis, a plurality of intermediate mobile supports arranged transversely of and at spaced locations, along said distributing pipe between said main support and said one end of said pipe, means on each intermediate support supporting the adjacent portion of said distributing pipe, a reciprocable flexible member disposed in parallel spaced relation with respect to said distributing pipe and having one end operatively connected to said supply conduit and having the other end operatively connected to the other end of said distributing pipe, each of said main and intermediate supports being provided with a ground-engaging propelling shoe and a shoe arranged in linear alignment with respect to said propelling shoe and slidably engaging the ground, a main ratchet drive wheel means on said main support and drivingly connected to said flexible member, a subsidiary ratchet drive wheel means on each of said intermediate supports and drivingly connected to said flexible member, a first means drivingly connecting the propelling shoe on each of said intermediate supports to the adjacent subsidiary ratchet drive means, a second means drivingly connecting the propelling shoe on said main support to said main ratchet drive wheel means also on said main support, and a control means operatively connected to the ratchet wheel of each subsidiary ratchet drive wheel means and operable to activate the ratchet wheel and the attendant propelling shoe of an intermediate support in accordance with lagging of and out of longitudinal alignment of said intermediate support with the main support and the other intermediate supports, and operable to deactivate the ratchet wheel and the attendant propelling shoe of said intermediate support in accordance with restoration of said inter-

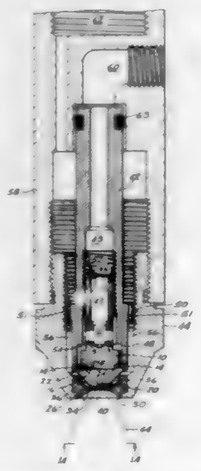
mediate support to the position of longitudinal alignment with the main support and the other intermediate supports.

3,373,940
VARIABLE AREA EXHAUST NOZZLE
Joseph F. Loprete, Wayne, N.J., Sanford Flanzenbaum, New York, N.Y., and John R. Campbell, North Haledon, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed July 12, 1965, Ser. No. 470,986
20 Claims. (Cl. 239—265.15)



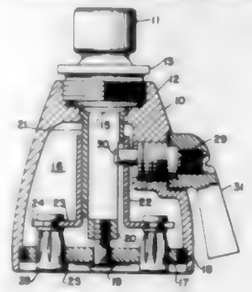
A variable area exhaust nozzle has, in the throat section thereof, a plurality of accurately shaped segments stacked in a side-by-side relationship around the nozzle axis. The radial inner surface of the segments defines a substantially smooth inner surface portion of the nozzle throughout. Means are provided for moving the segments toward and away from the nozzle axis to vary the cross sectional area of the throat section. As the segments move toward and away from the nozzle axis, alternate segments are movable relative to immediately adjacent segments such that the inner surface of the nozzle section remains substantially smooth.

3,373,941
NOZZLE
Orvis A. Davis, Sr., Gibsonia, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Feb. 3, 1966, Ser. No. 524,672
12 Claims. (Cl. 239—291)



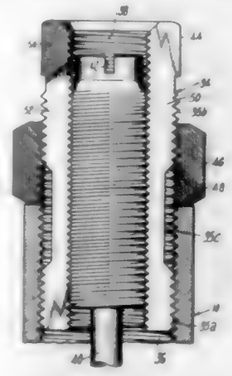
1. A nozzle comprising first means for discharging an axial spray, second means in said nozzle for charging a pressurized fluid in the direction of the periphery of said spray, said second means comprising channel means for charging separate streams of said fluid in collision course toward each other to form a resultant stream of said fluid having a low velocity, said second means also comprising passageway means in the zone of collision of said fluid streams which is substantially lateral with respect to said channel means to direct said resultant fluid stream in the direction of the periphery of said axial spray.

3,373,942
PLASTIC SHOWER HEAD PLUNGERS
Edward A. Roman, Wilmington, and Arthur Anthony Fiorentino, Newark, Del., assignors to Speakman Company
Filed Oct. 5, 1965, Ser. No. 493,063
4 Claims. (Cl. 239—460)



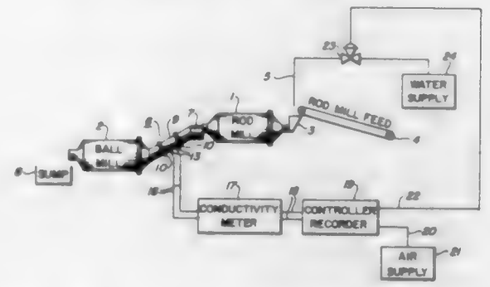
A shower head plunger made from a material having toughness, anti-liming, low water absorptivity and good dimensional stability characteristics is the subject of the instant invention. One of the following resins is used: polycarbonate, phenoxy resin or polyphenylene oxide.

3,373,943
FUEL INJECTION NOZZLE AND ADJUSTING MEANS THEREFOR
Vernon D. Roosa, P.O. Box 1440, West Hartford, Conn. 06101
Filed June 3, 1966, Ser. No. 555,152
8 Claims. (Cl. 239—533)



1. In a fuel injection device, a nozzle body having a valve chamber, a plunger valve of smaller cross section than said chamber disposed in the chamber, a guide supporting the plunger valve for reciprocating movement longitudinally within the chamber, a spring biasing the plunger valve toward a valve seat having a discharge orifice and adjusting and locking means for setting the spring biasing force and the lift of the valve from the valve seat, said adjusting and locking means comprising an externally and internally threaded spring adjusting sleeve threadably engaging mating threads provided by the nozzle body, a concentric lift stop pin threadably engaged with the inner threads of said sleeve, and a lock nut threadably engaged with the outer threads of said sleeve and engageable with a shoulder provided by said nozzle body wherein the improvement comprises a longitudinal portion of the spring adjusting sleeve spanning said shoulder provided by the nozzle body being externally unthreaded to permit elongation and a gradual change in pitch of the internal threads upon the tightening of the lock nut so as to lock the stop pin in position.

3,373,944
METHOD AND APPARATUS FOR CONTROLLING CONSISTENCY
Lloyd V. Fegan, Jr., Lebanon, and Amable E. Emond, Reading, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 529,820
8 Claims. (Cl. 241—15)



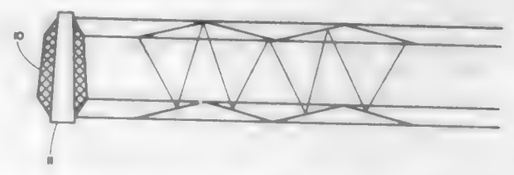
7. Method for continuously controlling and maintaining at a desired value the consistency of an electrically conductive mixture, said mixture including solids and a liquid continuously being added to said solids, said method comprising:

(a) forming a moving stream of said mixture, said stream having a depth varying directly with variations in the consistency of said mixture, there being a predetermined depth of stream corresponding with the desired value of consistency,

(b) measuring the resistance of said mixture in a portion of said stream by passing an electrical current between two fixed spaced stations in said stream and through the mixture between the two said stations,

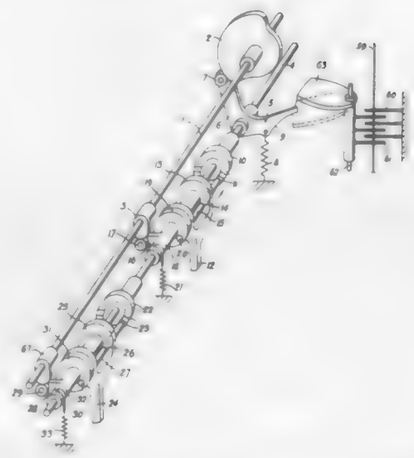
(c) regulating the flow of liquid to said solids to increase the flow of liquid when the resistance of said mixture between the two stations decreases below a predetermined value corresponding to an increase in the depth of said stream above a predetermined value and alternatively to decrease the flow of liquid when the resistance of said mixture between the two stations increases above the predetermined value corresponding to a decrease in the depth of said stream below the predetermined value.

3,373,945
WINDING OF YARN
Bryan K. Johnson, Abergavenny, England, assignor to British Nylon Spinners Limited, Pontypool, England
Filed Mar. 2, 1965, Ser. No. 436,664
Claims priority, application Great Britain, Mar. 11, 1964, 10,192/64
5 Claims. (Cl. 242—18)



Yarn is traversed to and fro along a rotating bobbin during the winding thereof on the bobbin with a cyclically varying traverse stroke. The length of yarn laid in one cycle of varying traverse strokes or in a low whole number multiple thereof is at least substantially equal to the length of yarn formed into a given textile article of required defined dimensions.

3,373,946
COP EXCHANGING APPARATUS
Vladimir Prasil, Brno, Czechoslovakia, assignor to Elitex, Zavody textilniho strojirenstvi, Liberec, Czechoslovakia
Filed Sept. 6, 1966, Ser. No. 577,487
Claims priority, application Czechoslovakia, Sept. 8, 1965, 5,505/65
10 Claims. (Cl. 242—35.6)

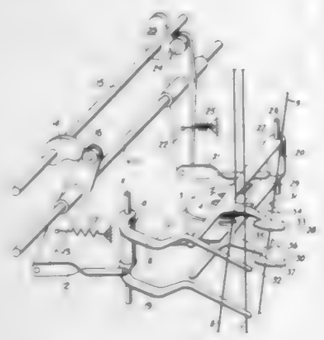


1. Cop exchanging apparatus for a winding machine, comprising, in combination, actuating means controlled by the winding machine upon a yarn breakage or exhaustion of a supply cop to perform an actuating motion; cop exchanging means; coupling means having a normal coupling position for coupling said actuating means with said cop exchanging means, and an inoperative position wherein said actuating means and said cop exchanging means are decoupled; control means for said coupling means; connecting means for connecting said actuating means with said control means for placing during said actuating motion said coupling means in said inoperative position for preventing actuation of said cop exchanging means upon a yarn breakage; and sensing means for sensing a yarn wound off a supply cop and located to respond to the exhaustion of a yarn, but not to a yarn breakage, said sensing means controlling said connecting means to render the same inoperative when responding to the exhaustion of the yarn of a supply cop so that said coupling means remains in said normal coupling position and said actuating means actuate said cop exchanging means to effect the substitution of a new full cop for the exhausted cop.

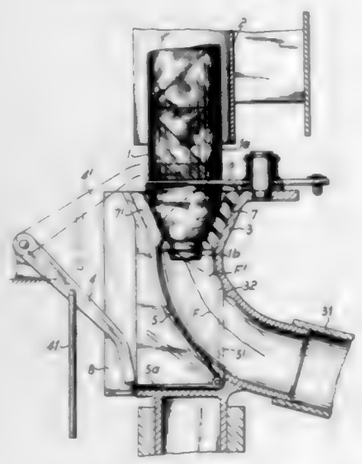
3,373,947
YARN POSITIONING AND TYING DEVICE
Vladimir Prasil, Brno, Czechoslovakia, assignor to Elitex, Zavody textilniho strojirenstvi, Liberec, Czechoslovakia
Filed Sept. 6, 1966, Ser. No. 577,506
Claims priority, application Czechoslovakia, Sept. 8, 1965, 5,503/65
10 Claims. (Cl. 242—35.6)

1. Yarn end tying apparatus comprising, in combination, a tying device having first and second receiving means for yarn ends and adapted to tie yarn ends in said first and second receiving means to each other; yarn inserting means mounted for movement toward and away from said tying device and having two first yarn holding means passing said first receiving means, and a second yarn holding

means passing said second receiving means during movement of said inserting means; and drive means for moving said inserting means so that a broken yarn end located in the path of movement of one of said first yarn holding means, or a new yarn end located in the path of movement of the other of said first yarn holding means, is engaged by the respective first holding means and inserted into said first receiving means while another yarn end located in the path of movement of said second yarn holding means is engaged by the same and inserted into said second receiving means whereby either a broken yarn end or a new yarn end is tied by said tying device to said other yarn end.

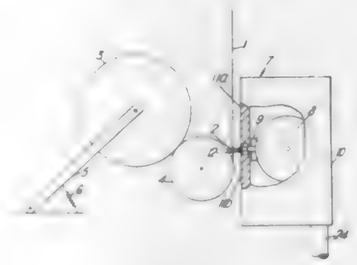


3,373,948
METHOD AND DEVICE FOR PNEUMATICALLY REMOVING THE TIP OR FOOT BUNCH FROM SUPPLY COILS
Hans Raasch, Rheydt, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed Nov. 30, 1966, Ser. No. 598,063
Claims priority, application Germany, Dec. 2, 1965, R 42,113
5 Claims. (Cl. 242—35.6)



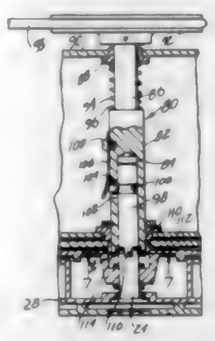
Supply coil is readied for subsequent processing by removing a tip or foot bunch therefrom by subjecting the bunch to be removed to the action of an air current supplied by a suction tube for relatively short time intervals until a thread end is exposed. The exposed thread end is clamped at a clamping location with a clamping device located in an opening of the suction tube between the intervals during which the bunch is subjected to the air current. The supply coil and the clamping location are relatively movable by means of a thrust member while the thread is clamped so as to mechanically draw off the thread end from the supply coil.

3,373,949
YARN WINDING MECHANISM
Ian Henry Swallow, Goytre, Monmouthshire, England, assignor to British Nylon Spinners Limited, Pontypool, Monmouthshire, England, a corporation of Great Britain
Filed Oct. 4, 1965, Ser. No. 492,653
Claims priority, application Great Britain, Oct. 21, 1964, 42,939/64
8 Claims. (Cl. 242—43)



A yarn traversing mechanism for a rotating yarn package includes means for lubricating the sliding surfaces in the mechanism and means for preventing contamination of the yarn with lubricant. The mechanism includes a horizontally disposed, grooved barrel cam, a cam follower, parallel upper and lower guide tracks for the follower, a yarn guide carried by the follower and disposed on the opposite side of the guide tracks from the cam. Reduced pressure on the cam side of the guide tracks causes an air stream to pass through the space between the tracks, thereby preventing passage of lubricant in the opposite direction.

3,373,950
REEL DRIVE ARRANGEMENTS
Yale J. Greenberg, Canton, Mass., assignor to Keystone Camera Company, Inc., Boston, Mass., a corporation of Massachusetts
Filed Nov. 23, 1964, Ser. No. 412,948
6 Claims. (Cl. 242—55.13)



1. Reel drive apparatus for use with transducing equipment of the type in which a flexible record member is moved past a station in an information transfer operation, comprising

a casing having a compartment for receiving a magazine that supports two spaced reels for transport of a flexible record member,

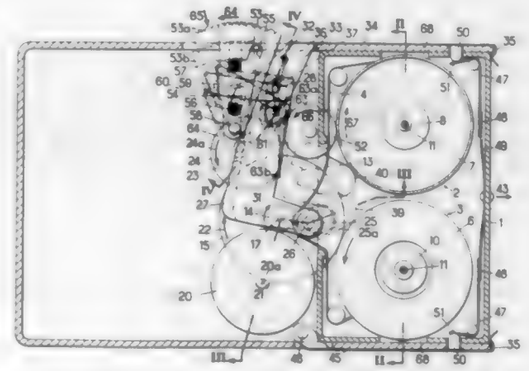
reel drive means disposed in said casing having a pair of concentric drive elements,

means for frictionally coupling said drive elements together,

one of said drive elements including coupling means for engaging in driving relation one of said magazine supported reels,

and the other of said drive elements including coupling means for engaging in driving relation, the second magazine supported reel so that said record member in a first position of said magazine may be transferred in one direction from one reel to the other by a frictionally coupled drive and in a second position of said magazine may be transferred in the reverse direction by a direct drive.

3,373,951
DRIVE MEANS FOR MINIATURE TAPE RECORDERS
Jean Mazoyer, 6 Rue des Clamarts, Nogent-sur-Marne, Seine, France
Filed Nov. 5, 1965, Ser. No. 506,486
6 Claims. (Cl. 242—55.13)



A drive system for miniature magnetic recorders, characterized by the fact that it comprises a symmetrical magazine containing a magnetic tape mounted on two reels. The reels each consist of a hub having a first flange rigidly connected on one end and a second flange engaged by friction on the other end. The mechanism for driving the tape and reels comprises, in combination, a capstan rigidly connected to a large wheel which is driven by frictional contact between its periphery and an electric micro-motor, the large wheel frictionally driving an inertia flywheel and an engaged wheel of the take-up reel; a presser roller mounted on an oscillating arm to press the magnetic tape against the capstan; a transmission roller, which rolls on the first flange of the feed reel and contributes to the braking thereof; and finally, a control member consisting of a movable part which in a first position displaces the oscillating arm to move the presser roller away from the capstan and, in a second position, elastically presses a small roller between the periphery of the flywheel and the periphery of the transmission roller so as to effect high speed rewinding of the magnetic tape.

3,373,952
DRUM WINDER FOR PAPER AND THE LIKE
Edward J. Klaczkiewicz, Wilmington, Del., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware
Filed Jan. 7, 1966, Ser. No. 519,206
13 Claims. (Cl. 242—66)

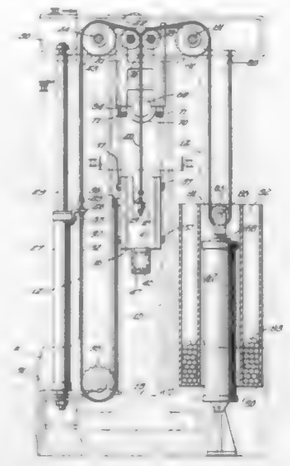
1. A drum winder for webs of paper and the like comprising:

a frame structure having a pair of parallel laterally spaced upright posts at each end of said frame structure,

a pair of horizontal parallel spaced power driven winder drums disposed between said posts adjacent the lower ends thereof,

parallel spaced guides extending vertically along each of said posts on opposite sides of the space between said winder drums,

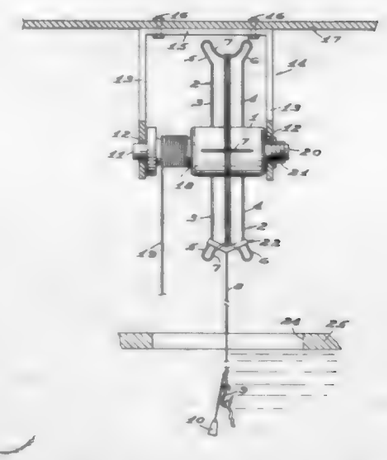
core shaft slides disposed between and slidably guided in said guides,



fluid pressure operated means vertically moving said core shaft slides along said posts,

and a core shaft journalled in said core shaft slides between said guides.

3,373,953
FISHING REEL CONSTRUCTION
Aaron M. Grove, 526 N. Antler St., Gladwin, Mich. 48624
Filed May 25, 1966, Ser. No. 552,763
8 Claims. (Cl. 242—104)

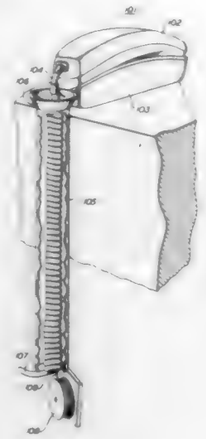


A fishing reel having a rotatable drum from which extends a plurality of radial spokes having free ends about which a fishing line may be wound circumferentially of the drum and including an elastic band mounted on and surrounding one of the spokes at its free end so as to overlie a selected number of convolutions of the line.

3,373,954
RETRACTILE TELEPHONE CORD STORAGE ARRANGEMENT
Harry A. Hilsinger, Jr., Hope Township, Warren County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 11, 1966, Ser. No. 533,637
10 Claims. (Cl. 242—107)

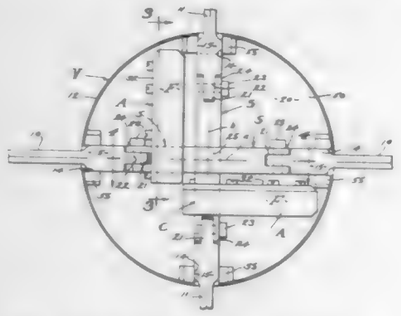
In a retractile coiled cord arrangement for an electrical appliance for a telephone handset, a retracting wire

mounted on a spring-loaded drum has its free end affixed to the cord near its operating end so that upon the release



of tension on the wire, the coiled cord is automatically retracted and stored within an accommodating tube.

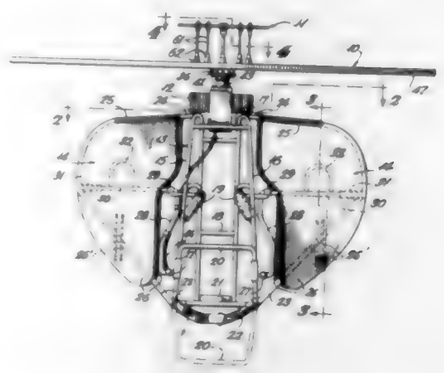
3,373,955
PITCH AND YAW ACTUATOR ASSEMBLY FOR VEHICLE GUIDANCE SURFACES
Paul Huska, 739 Moreno, Los Angeles, Calif. 90049
Filed May 25, 1964, Ser. No. 369,903
6 Claims. (Cl. 244—3.21)



5. A pitch and yaw actuator assembly for installation on a transverse bulkhead member within a cylindrical vehicle body and comprising in combination, a pair of identical right angularly related and interesecting shafts to be independently revolved in diametrically disposed axes, an actuated element coupled to each opposite end of each shaft, an offset saddle at the center of at least one shaft whereby said shaft clears the other said shaft for independent revolvement, and a pair of identical actuators and one coupled to each shaft and each actuator comprising a frame with a chamber therein and with bearings rotatably supporting one of said shafts at and inward of the coupling at one end thereof and with the opposite ends of said shaft extending free from the bearings, said chamber of the frame being disposed radially of the shaft carried in said bearings and disposed adjacent to the other right angularly related shaft, and there being means operable within said chamber to revolve the shaft.

3,373,956
OVERHEAD ROTOR AIRCRAFT
Walter K. Owens, Crestview, Fla., assignor to Souri, Inc., Pensacola, Fla., a corporation of Florida
Continuation-in-part of application Ser. No. 430,282, Feb. 4, 1965. This application Sept. 7, 1966, Ser. No. 577,662
7 Claims. (Cl. 244—4)

A single passenger overhead sustaining rotor aircraft in which said rotor has automatic gyroscopic cyclic pitch control means for the individual rotor blades operable in response to tilting of the depending aircraft structure



away from the vertical, in combination with manually controllable fins which are constantly subjected to the downward air stream produced by the rotor.

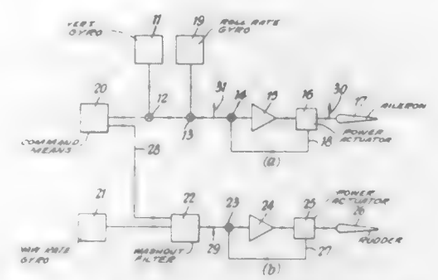
3,373,957
REMOTE VEHICLE CONTROL
Wolfgang Budde, 758 E. 24th St., Erie, Pa. 16500
Filed Mar. 28, 1966, Ser. No. 537,724
5 Claims. (Cl. 244—75)

The present invention involves a control for model airplanes. The control is made up of a conventional receiver on the airplane, which transmits signals to the control surfaces of the airplane. The transmitter is a multi-tone or multi-channel transmitter and is controlled by signals from four sectors of a surface that conforms to a part of a sphere. A joy stick is supported above the surface with its center of rotation at the center of curvature of the sphere, and the operator can move the joy stick to move the contact thereof selectively over the several sectors and hereby control the flight of a model airplane. The control of the joy stick relative to the control surface is exactly the same relative to the airplane as a joy stick connected directly to the controls of a conventional airplane would be for corresponding maneuvers.

3,373,958
AIRCRAFT TURN ENTRY
George E. Sims, Century Works, Lewisham, London, SE. 13, England
Filed Aug. 6, 1965, Ser. No. 477,886
Claims priority, application Great Britain, Aug. 10, 1964, 32,478/64
2 Claims. (Cl. 244—77)

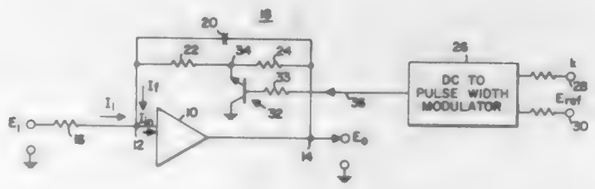
An aircraft control system having an aileron control loop and a rudder control loop, which latter includes a yaw rate gyro and a wash-out filter having yaw rate

its input, and interconnects the aileron and rudder control loops by connecting the aileron loop roll command input



to the input of the rudder loop wash-out filter. Rudder response upon termination of a turn is improved.

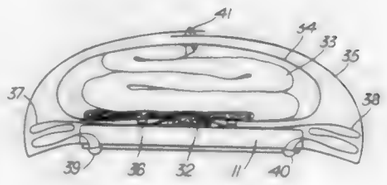
3,373,959
CONTROL APPARATUS
John F. Petersen, New Brighton, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,386
6 Claims. (Cl. 244—77)



1. Computing means comprising in combination:
a D-C amplifier, having input and output terminals;
means connected to the amplifier input terminal, causing a current directly proportional to a first signal to flow thereinto;
a network connected between the amplifier output and input terminals, comprising a capacitor and tapped resistor, in parallel;
a pulse width modulator, providing a train of periodic pulses, the width of the pulses linearly decreasing and increasing as a second signal increases and decreases respectively; and,
switching means connected to the resistor tap, responsive to the pulses and interrupting resistive current flow, in said network, between amplifier input and output terminals in coincidence with the pulses.

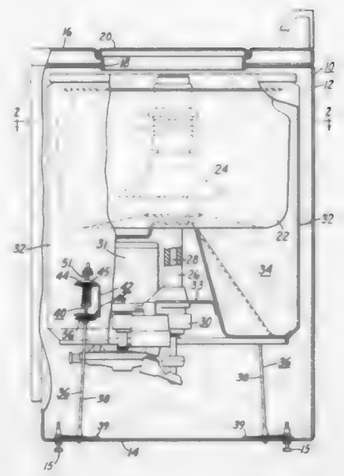
6. In aircraft attitude control apparatus, a computing means comprising in combination:
a D-C amplifier, having input and output terminals;
means connected to the amplifier input terminal causing a current which is a function of the vertical acceleration of the aircraft flow thereinto;
a network connected between the amplifier output and input terminals, comprising a capacitor and tapped resistor, in parallel;
a pulse width modulator, providing a train of periodic pulses, the width of the pulses linearly decreasing and increasing as cosine ϕ, where ϕ is the angle of bank of the aircraft, increases and decreases respectively;
switching means connected to the resistor tap, responsive to the pulses and interrupting resistive current flow, in said network, between amplifier input and output terminals, in coincidence with the pulses;
second switching means, responsive to the pulses and interrupting the current that is a function of the vertical acceleration of the aircraft, in coincidence with the pulses; and,
servo means connected to the output of the amplifier, operating the aircraft elevator surface to prevent loss of altitude of the craft in a banked turn.

3,373,960
PARACHUTES
John Rothwell Mitchell, Woking, Surrey, England, assignor to G. Q. Parachute Company Limited, Woking, Surrey, England, a British company
Filed July 25, 1966, Ser. No. 567,656
Claims priority, application Great Britain, July 27, 1965, 32,078/65; Oct. 14, 1965, 43,623/65
6 Claims. (Cl. 244—148)



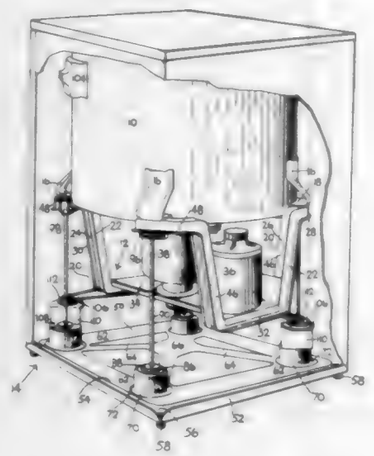
A parachute enclosed within an inner bag, the inner bag being composed of sections unattached to each other except through loops at each end thereof, the inner bag being enclosed within an outer bag, a force means also within the outer bag engaging the inner bag to force the inner bag and parachute from the outer bag upon opening of the outer bag, the outer bag having releasable means holding the same closed.

3,373,961
SUSPENSION SYSTEM
George B. Long, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 514,911
8 Claims. (Cl. 248—18)



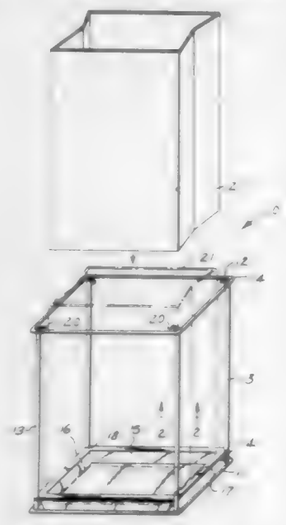
In the preferred form, a suspension system for a domestic washing appliance having a water container in combination with a spin tub and a means to rotate the spin tub, all supported from a base frame by springs on a plurality of supporting rods used in conjunction with plural snubbing devices mounted on each support rod to give a high snubbing restraint at and below critical speed and a lesser restraint above critical speed.

3,373,962
WASHING MACHINE SUPPORT STRUCTURE
William M. Blaiklock, London, Ontario, and Donald L. Allen, Don Mills, Ontario, Canada, assignors to General Steel Wares Limited
Filed Dec. 29, 1965, Ser. No. 517,228
1 Claim. (Cl. 248—18)



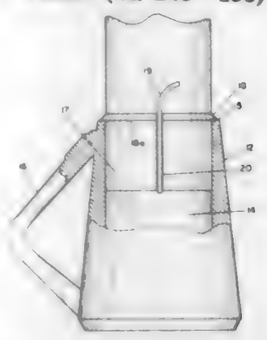
The upright tub of a washing machine is supported upon the base by flexible rods; the lower ends of the rods are rigidly secured in the base and the upper end of each rod is encased in rubber-like material which attaches the rod to the tub.

3,373,963
BAG HOLDING DEVICE
Jolene Snell, 20—56 29th St., Long Island City, N.Y. 11105
Filed Aug. 4, 1965, Ser. No. 477,239
3 Claims. (Cl. 248—97)



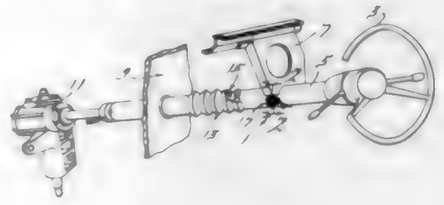
A bag holding device formed of a wire or rod formed cage which may be rectangular or otherwise shaped to form a hollow cage-like enclosure for receiving a paper or bag or other material which is to be filled with garbage or other refuse. The cage has upright corner rods or wires with top and bottom frames, and there is a bottom tray portion which is slidable from bottom to top of the cage, and which is weighted to normally be at the bottom to lower the center of gravity to avoid accidental tipping over. The tray portion is dished upwardly to retain any liquid contents of the garbage to avoid soiling the floor beneath, and when the garbage bag is to be emptied, the tray can be pushed upwardly on its track guides formed by the uprights of the cage, to push the bag out of the device into a garbage can or the like without soiling the hands, stops being provided at the top and bottom of the cage to retain the tray within the cage.

3,373,964
LAMP CONSTRUCTION
Gary A. Bunders, R.R. 2, Box 66, S. Marquette, Prairie du Chien, Wis. 53821
Filed May 5, 1966, Ser. No. 547,910
1 Claim. (Cl. 248—158)



The combination of a lamp standard and an imperforate mug supporting the standard. The mug has a cylindrical receptacle portion and the standard has a lower connection portion removably received in the receptacle portion of the mug. The standard has an integral annular flange engaging the rim of the mug. The connector portion and the annular flange have an upright laterally open groove therethrough receiving the electrical cord extending from the bottom of the lamp standard.

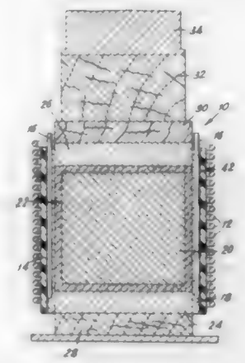
3,373,965
RELEASABLE STEERING COLUMN CLAMP
Alfred A. Bien, Birmingham, and Ronald M. Gerweck, Royal Oak, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed June 8, 1966, Ser. No. 556,096
16 Claims. (Cl. 248—226)



1. A clamp for frictionally securing an elongate member to a support means comprising preformed portions on said member adapted to receive fasteners, each of said preformed portions having an opening therethrough extending to one edge thereof, fasteners adapted to extend through said support means and said openings for securing said member to said support means, at least one of said fasteners including a frictional clamp for exerting a predetermined frictional gripping force on said preformed portions adjacent at least one of said openings, said preformed portions being adapted to slip out of said frictional clamp for releasing said member when the frictional gripping force is overcome by a force on said member.

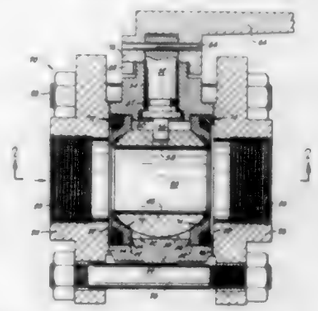
3,373,966
APPARATUS FOR FORMING LARGE CARBONACEOUS BODIES
Gayle L. Rowe, Parma Heights, and Joe R. Wilson, North Olmsted, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Dec. 1, 1965, Ser. No. 510,921
5 Claims. (Cl. 249—80)

1. In an apparatus wherein a large carbonaceous body is produced by the application of high pressure and temperature, said high temperature being produced by the electro-magnetic field of an induction heating means, the improvement which comprises a fiberglass mold shell, a refractory liner adjacent to said fiber glass shell, and



cooling means positioned between said shell and said liner, cooling means being so structured and so positioned as to be minimally affected by said electromagnetic field whereby said shell is cooled during the application of heat to said body.

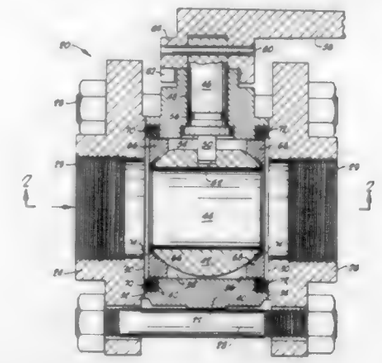
3,373,967
BETWEEN-FLANGE BALL VALVE
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73129
Filed Apr. 12, 1965, Ser. No. 447,282
17 Claims. (Cl. 251—148)



A ball valve including a tubular body having counterbored upstream and downstream end faces. A ball is positioned in the tubular body between a pair of seals which each include a high strength seating ring having a portion positioned in one of the counterbores and axially slidable in such counterbore parallel to the direction of fluid flow. Each seating ring has a frusto-spherical front face configured to sealingly engage the ball and an outer face facing toward the nearest end face of the valve body. An elastic material sealing ring is adhered to each seating ring and is dimensioned to bear resiliently against the wall of the respective counterbore receiving a portion of the seating ring to which it is bonded, and is also dimensioned to extend beyond the nearest end face of the valve body in its relaxed condition, so that assembly of the valve between two flanged members contacting the end faces places the sealing ring in compression and in sealing engagement with said flanged members.

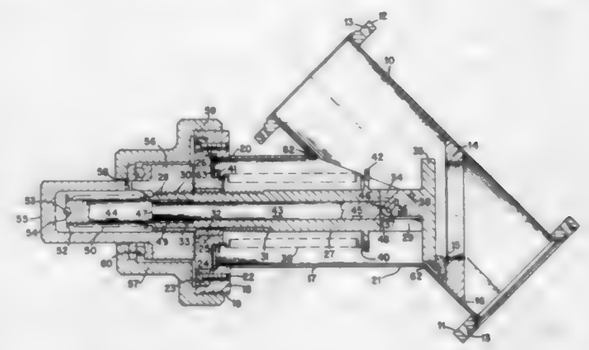
3,373,968
BETWEEN-FLANGE BALL VALVE WITH SLIDABLE SEATS
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73129
Filed Apr. 12, 1965, Ser. No. 447,448
16 Claims. (Cl. 251—148)

A floating ball-type valve wherein the seating rings are slidable in the valve chamber with upstream and downstream movement of the ball. Each seating ring has an elastic material seal ring bonded around the outer periphery thereof positioned to form a seal between the seating ring and the body and between the body and a pipe flange



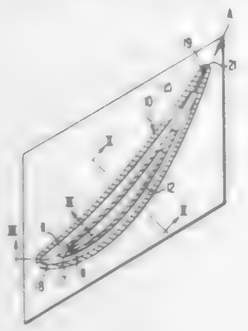
secured to the respective end of the body. Each seal ring also functions to urge the respective seating ring against the ball, whereby the upstream seat provides an upstream seal for the valve when the valve is closed.

3,373,969
VALVE FOR VACUUM SERVICE
Matthew J. Teitt, Trafford, Pa., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 6, 1965, Ser. No. 493,597
2 Claims. (Cl. 251—229)



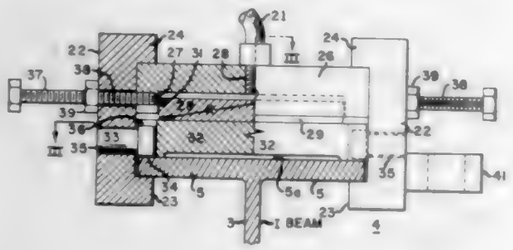
1. A valve for vacuum service comprising:
(a) a housing containing a valve member and a valve seat therein;
(b) a stem assembly disposed within said housing comprising an outer member and an inner member slidably disposed within said outer member;
(c) means for first causing combined axial movement of the outer member and the inner member while the valve member is proximate the valve seat and for secondly causing relative axial movement of the outer member with respect to the inner member while the valve member is distant the valve seat;
(d) said valve member, adapted for sealing engagement with the valve seat, being mounted to the outer member and cammed to the inner member of the stem assembly so that combined axial movement of the outer member and the inner member causes axial movement of the valve member and relative axial movement of the outer member with respect to the inner member causes pivotal movement of the valve member,
whereby the valve member moves from sealing contact with the valve seat to a position allowing substantial unimpeded flow through the valve.

3,373,970
GAS TURBINE BLADE
Heinz Brockmann, Fellbach-Wurttemberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 9, 1966, Ser. No. 600,540
Claims priority, application Germany, Dec. 11, 1965, D 48,895
12 Claims. (Cl. 253—39.15)



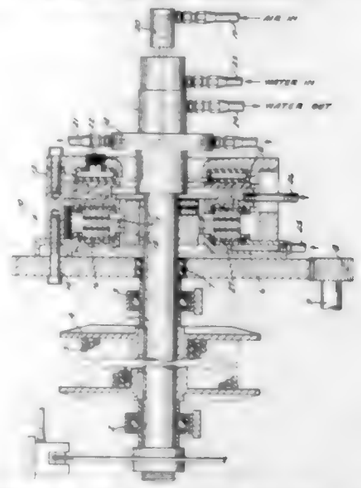
The present disclosure relates to a blade for a gas turbine, particularly a turbine to be used in a flight propulsion unit. The blade is constructed of inner and outer substantially identically contoured hollow blade members, which are connected together by cooling fins or ribs that extend substantially in the plane of propulsion gas flow. A cooling fluid is introduced into the inner hollow blade and is discharged through radially elongated slots in the forward edge of the inner blade against the interior surface of the outer hollow blade forward edge. The cooling fluid will travel from the forward edge between the inner and outer hollow blade members rearwardly where it is discharged through radially elongated slots in the rearward edge of the outer hollow member smoothly into the flow of propulsion gases so that it will not disturb the flow of propulsion gases and enhance the aerodynamic effect of the turbine blade. The blade construction may be employed in either a rotating blade or a stationary guide vane.

3,373,971
HYDRAULIC GRIPPER FOR DERRICK JACK
Henry B. Chambers and Clair W. Tellefson, Santa Barbara, Calif., assignors to Hydranautics, Santa Barbara, Calif., a corporation of California
Filed Feb. 1, 1966, Ser. No. 524,041
8 Claims. (Cl. 254—107)



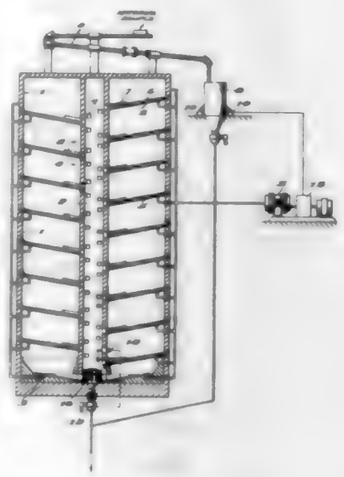
A double flanged member such as an I beam is gripped by a pair of smooth jaws on one side of the flanges and by a smooth shoe or shoes on the other side of the flanges, and the shoe and jaws are mechanically interconnected to move together longitudinally but with a universal motion to fit irregularities of the flanged member. A hydraulic motor moves the shoe toward the jaws. The gripper acts as an anchor for pulling or pushing heavy objects supported on the I beam.

3,373,972
SLIP CLUTCH CONSTANT TENSION WINCH
Earl A. Peterson, 11221 Loch Lomond Drive, Los Alamitos, Calif. 90720
Filed Aug. 25, 1966, Ser. No. 575,095
5 Claims. (Cl. 254—187)



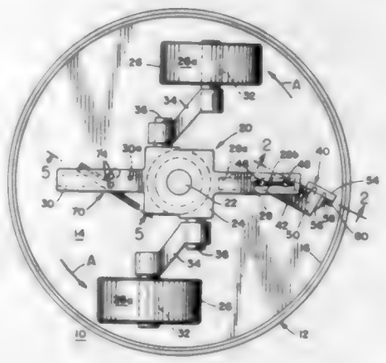
The combination of a constant tension winch with a constantly slipping clutch provides a mechanism when the load attached to the winch has a constant tension thereon, so that this load will not move relative to the winch. The amount of slippage of the clutch can be varied to alter the tension on the winch as might be required. Even though the load is stationary at times, the clutch is still slipping during the periods of movement or non-movement of the load.

3,373,973
MIXING APPARATUS FOR BLENDING BULK MATERIAL
Hans-Joachim Schmidt-Holthausen, Hamburg-Sasel, Germany, assignor to Fuller Company, Catasauqua, Pa., a corporation of Delaware
Filed Apr. 13, 1967, Ser. No. 630,600
Claims priority, application Germany, Apr. 16, 1966, P 39,218
13 Claims. (Cl. 259—4)



A mixing silo for blending dry bulk material having a vertically disposed mixing chamber arranged within the silo. The mixing chamber carries a plurality of material inlets at various levels for receiving material which is thereby blended in the mixing chamber and discharged by gravity through the outlet in the bottom of the silo.

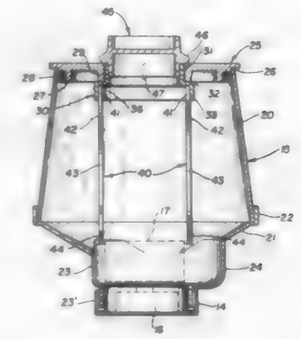
3,373,974
ROTARY MIXER
Elbert C. Troy, Highland Park, Ill., assignor to National Engineering Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 8, 1967, Ser. No. 614,669
13 Claims. (Cl. 259—107)



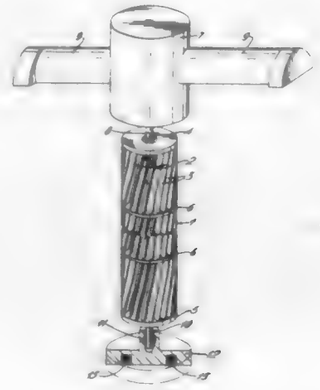
A rotary mixer for particulate material, such as foundry sand and the like, including a mixing chamber having a bottom wall and an upstanding peripheral sidewall with a mixing head mounted for rotation in said chamber about an upstanding axis inwardly of the sidewall. The mixing head includes a pair of outwardly extending support arms and a pair of inner and outer plow assemblies mounted on the arms. The outer plow assembly includes a plow having a planar advancing face sloping upwardly of the bottom wall and rearwardly in a direction opposite the movement of the plow into the material. This plow includes an outer and inner end and is positioned with the outer end trailing the inner end in a direction opposite the direction of movement of the plow into the material. The plow is supported from one of the support arms on the mixing head by a downwardly extending leg intermediate the ends of the plow which acts as a divider for dividing the material inwardly and outwardly thereof as it flows over the upper edge of the plow. The mixing head includes an inner plow assembly supported from the other arm of the mixing head which includes an inner plow having inner and outer planar advancing faces. The outer face is sloped upwardly and rearwardly in a direction opposite the movement of the plow into the material and the inner face is generally normal or perpendicular of the bottom wall.

3,373,975
BLENDER AND BUILT-IN SPATULA
George L. Congdon, Fort Atkinson, Wis., assignor to Scovill Manufacturing Company, New Haven, Conn., a corporation of Connecticut
Filed Mar. 15, 1966, Ser. No. 534,358
7 Claims. (Cl. 259—120)

A power operated blender provided with a built-in spatula for removing ingredients from the blender container wall and directing them toward the agitator-cutter of the blender without interruption of blender operation, comprising an open top ingredient container having a reduced diameter lower portion, an agitator-cutter unit located in the said portion, a removable cover provided with a central opening closing the top of the container, a knob rotatable in the cover opening, and a spatula detachably connected to and rotatable with the knob while the blender is in operation and the cover is in place. The knob is removable from the spatula and cover to permit adding ingredients through the cover opening while the blender is in operation. The spatula includes a hub and two blades attached to the hub in parallel transversely spaced apart relationship, said blades each having an edge portion slightly spaced from the inner surface of the container side wall and an inwardly directed portion terminating adjacent the agitator-cutter of the blender in said reduced diameter portion of the container.



3,373,976
FLOW MACHINES
Nikolaus Laing, Aldingen, near Stuttgart, Germany, assignor to Laing-Vortex, Inc., New York, N.Y., a company
Continuation-in-part of application Ser. No. 450,749, Apr. 26, 1965. This application Feb. 17, 1966, Ser. No. 528,204
3 Claims. (Cl. 259—135)

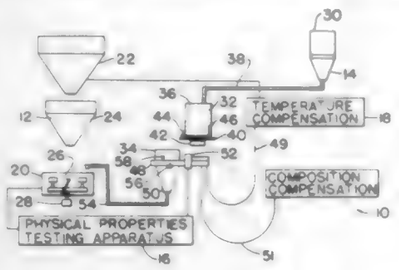


1. A mixer comprising a long bladed cylindrical rotor having forwardly curved blades and adapted for vertical mounting in a fluid to be mixed, a foot bearing of self-aligning type mounted in a magnetic foot with said bearing being connected to the lower end of said rotor, and drive means for the rotor at the upper end.

3,373,977
GRANULAR MATERIAL CONDITIONING APPARATUS
Harry W. Dietert, Kerrville, Tex., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 391,420, Aug. 24, 1964. This application June 10, 1966, Ser. No. 556,616
4 Claims. (Cl. 259—154)

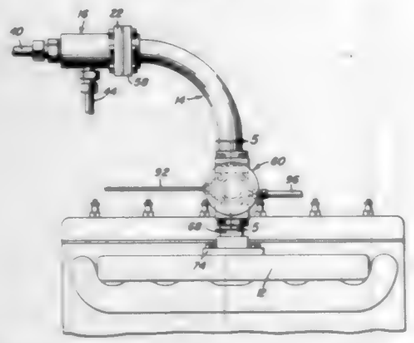
Apparatus for mixing foundry sand and additives therefor, including a mixer for the foundry sand and additives, means for metering additives into the mixer, means for testing the final physical properties of the mixed foundry sand and additives in the mixer, and means for compensating the metering means in accordance with the

final physical properties of the foundry sand and additives in the mixer and for the initial physical properties of the



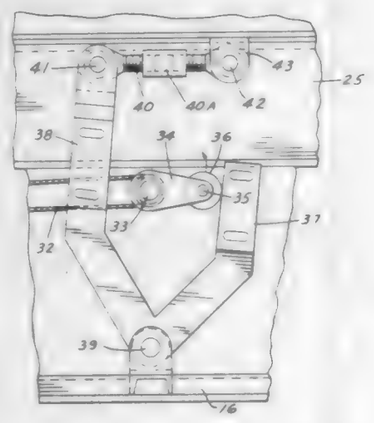
foundry sand, including the initial temperature and composition of the foundry sand.

3,373,978
CHARGE-FORMING DEVICE FOR INTERNAL COMBUSTION ENGINES
Orland W. Ellis, 411 Gibbs Road, Warrington, Fla. 32507
Filed Oct. 12, 1965, Ser. No. 495,244
1 Claim. (Cl. 261—16)



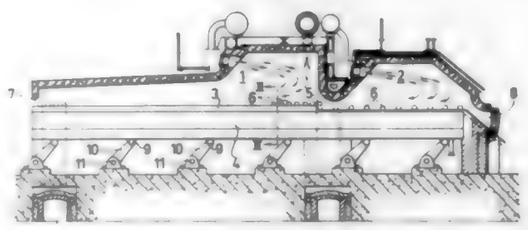
An apparatus utilizing a relatively small quantity of air under pressure to form a partial vacuum adjacent a jet of pressurized air for drawing quantities of liquid fuel into said jet of air to be broken up into fine droplets and at least substantially vaporized by said jet of air, the jet of air and vaporized fuel being then discharged into the inlet end of intake air passage means of an associated internal combustion engine subject to engine vacuum and subsequently mixed with metered fresh air before passing out the outlet end of said intake air passage means.

3,373,979
CONTINUOUS FORGE FURNACE
Russell B. Hammond, 2620 Crane, Detroit, Mich. 48214
Filed June 1, 1966, Ser. No. 554,477
2 Claims. (Cl. 263—6)



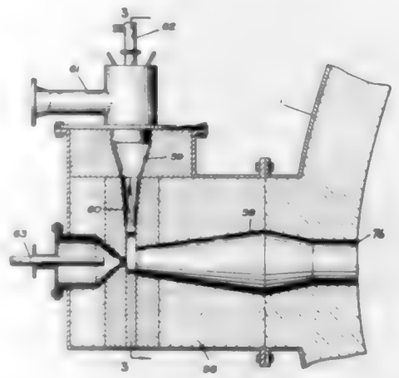
This application discloses a continuous forge furnace, in which the workpieces are moved through the heat zone by means of a pair of stationary side rails of refractory material and a vertically and laterally reciprocable center rail, which is actuated by motor driven push rods and pivoted yokes. The center refractory rail is provided with a declining angular discharge end.

3,373,980
WALKING BEAM FURNACE FOR EFFECTING DIFFERENT FEED SPEEDS OF THE CHARGE
Tage Ansheim Borgkvist, Stockholm, Sweden, assignor to Aktiebolaget Tabougnar, Stockholm, Sweden, a Swedish joint-stock company
Filed June 2, 1966, Ser. No. 554,736
Claims priority, application Sweden, Feb. 28, 1966, 2,573/66
6 Claims. (Cl. 263—6)



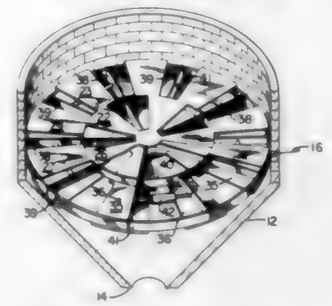
A walking beam furnace comprises a pre-heating zone and a final heating zone arranged to give charges different feed speeds through the zones over a stationary hearth. The walking beams extend in an undivided manner through all zones of the furnace and are arranged to be reciprocated at different levels in relation to the stationary hearth so as to effect the feed of the charge.

3,373,981
APPARATUS FOR OPERATING A BURNER FIRED SHAFT FURNACE
Harro Taubmann, Niederhochstadt, Taunus, and Hubert Boderke, Hemkenrode uber Braunschweig, Germany, assignors to Didier-Werke A.G., Wiesbaden, Germany
Filed May 26, 1965, Ser. No. 459,071
Claims priority, application Germany, May 29, 1964, W 36,875
2 Claims. (Cl. 263—29)



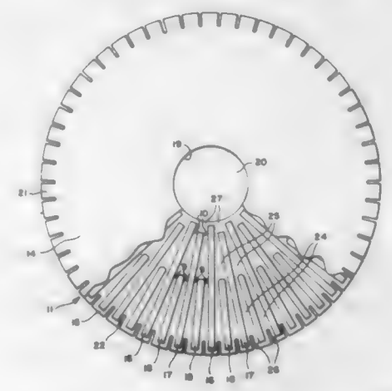
The quantity of fuel required for the heat treatment of the material is subdivided differentially or uniformly to the individual burners so that the combustion in the burners of the individual burner planes or levels takes place differentially or uniformly stoichiometrically, sub-stoichiometrically or super-stoichiometrically and the quantity of cool air is measured or dosed. In this way, the heat distribution in the furnace can always be adapted to the particular heat treatment to be carried out. When the burner is operated sub-stoichiometrically, the present invention employs stage burners provided with two combustion chambers and interposed guide or conduit means with the first combustion chamber located at the inlet end of the second combustion chamber and at substantially right angles thereto. Such a construction of the burners makes it possible to realize a relatively strongly reduced combustion without difficulties. Honeycomb-like nozzle blocks may be arranged in the outlet openings discharging into the furnace shaft in order to improve the penetration effect of the outflowing gases through the loose material being treated and such blocks may, of course, also be built into burners which do not operate according to the two-stage principle.

3,373,982
RADIAL GRATE FOR SHAFT KILNS
John B. Jones, Jr., Denver, Colo., assignor, by direct and mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,891
9 Claims. (Cl. 263—29)



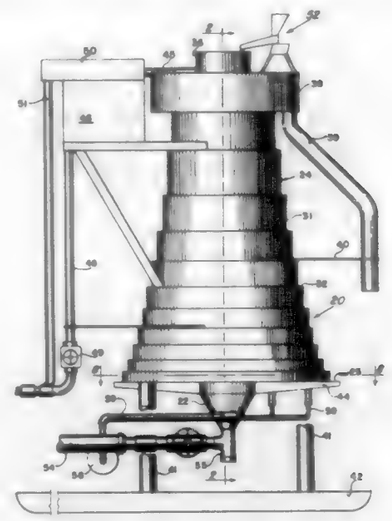
A discharge mechanism for shaft furnaces having narrow, concentric radial openings extending outwardly from the furnace center, with a retarder plate mounted under each opening, to prevent direct vertical movement of material, and an oscillating pusher bar is mounted on each retarder plate in close proximity to the edges of the openings pushes material from both sides of the plate, discharging it from the furnace. Each opening has radially directed side edges so that oscillation of the pusher bar pushes material uniformly from each plate, providing uniform flow of material across the lateral extent of the furnace.

3,373,983
SEPARATOR PLATE
Carl G. A. Johnson, Rocky River, and James L. Whitten, Fairview Park, Ohio, assignors to The Alloy Engineering Company
Filed Jan. 7, 1966, Ser. No. 519,210
24 Claims. (Cl. 263—47)



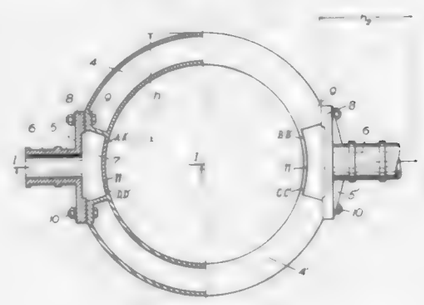
A separator for supporting coiled strip in an annealing furnace including a support plate and a plurality of ribs secured to the plate to define fluid passages extending from the outer perimeter of the separator to a central opening.

3,373,984
APPARATUS FOR THE CONTINUOUS PRODUCTION OF COPPER
Thomas Valle, Idaho Springs, Colo., assignor to The Fall River Exploration and Mining Company, Idaho Springs, Colo., a corporation of Colorado
Filed Oct. 22, 1965, Ser. No. 501,196
10 Claims. (Cl. 266—12)



The described apparatus for the continuous production of copper embodies a central vertical core member surrounded by a stack of spaced plates enclosed within a housing and defining a plurality of reaction chambers. The plates include a plurality of nozzles. A liquid-solid slurry is introduced into the top of the central core, flows downwardly through the core, and then upwardly through the reaction chambers. The nozzles direct the slurry into a swirling, mixing flow through each chamber.

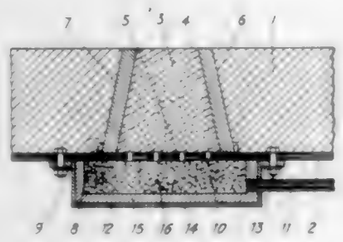
3,373,985
ANNULAR SUPPORT RING FOR CONVERTERS
Peter Puxkandl, Linz, Austria, assignor to Vereinigte Österreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Jan. 29, 1964, Ser. No. 340,916
Claims priority, application Austria, Feb. 28, 1963, A 1,595/63
3 Claims. (Cl. 266—36)



1. A metallurgical vessel comprising upper and lower sheet metal portions and a load-bearing middle portion wherein said middle portion comprises two spaced symmetrical segment members rigidly and undetachably connected to said upper and lower vessel portions with the respective ends of the segments facing each other, said segment members having a double-wall hollow structure, one wall thereof being rigidly and undetachably connected to the upper and lower vessel portions, two flat metal plates welded respectively to the facing ends of the two segment members to complete the middle portion of the

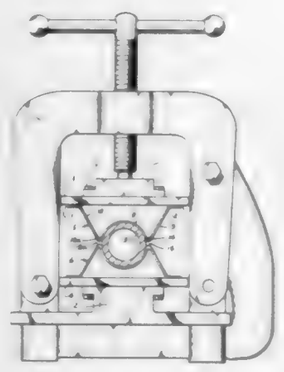
vessel, and a pair of trunnion-carrying connecting members removably mounted to the outer sides of said facing ends of said segment members by releasable screw connections, a cavity remaining between each trunnion-carrying connecting member and the corresponding flat metal plate.

3,373,986
METALLURGICAL VESSEL WITH SAFETY DEVICE
Etienne Spire, Westmound, Montreal, Quebec, Canada, assignor to L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude
Filed June 11, 1965, Ser. No. 463,176
Claims priority, application France, June 18, 1964, 978,778, Patent 1,407,225
5 Claims. (Cl. 266—39)



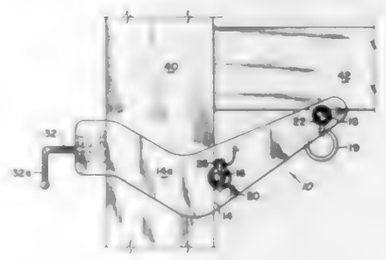
Under a porous plug **3** intended for insufflating a gas into molten metal is a blast box **12**. Said box is filled with refractory material granules **16** which retain the molten metal in case it would leak through or around the plug. A metal plate with openings **10** may be located between the porous plug and the granules.

3,373,987
PIPE VISE
Sanford W. Herrington, 606 Roddy, Clute, Tex. 77531
Filed Feb. 23, 1965, Ser. No. 434,601
6 Claims. (Cl. 269—275)



1. A pipe vise, including a pair of vise jaws, a rigid base on each jaw, means for moving the jaws relatively toward and away from one another, a pipe gripping member on each base, each pipe gripping member comprising a flexible, substantially non-stretchable section having a concave pipe engaging surface and thrust members carried by the base and convergingly inclined in a direction away from the base and attached to the section adjacent opposite longitudinal edges of the section so as to locate the concave surface spaced from the base and opposite the concave surface of the other section for receiving a pipe therebetween, the angular inclination of said thrust members with respect to the base being equal, said thrust members having sufficient stiffness to cause said sections to flex and contract around the pipe, as said jaws are moved relatively toward one another, and each of said concave surfaces being substantially a half cylinder, when said sections have been so flexed and contracted, so that there is clearance between the opposite longitudinal edges of said sections.

3,373,988
REMOVABLE BEAM SEAT
Michael J. McKelvey, 1304 Berryman Ave., Bethel Park, Pa. 15102
Filed Sept. 22, 1965, Ser. No. 489,333
6 Claims. (Cl. 269—309)

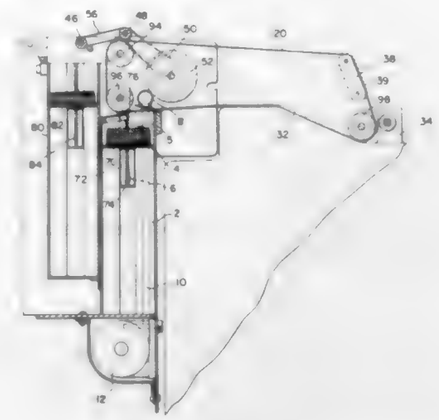


1. A removable beam seat for temporarily supporting a horizontal beam in position realtive to a vertical column comprising:
(a) a first lever;
(b) a second lever identical in size and shape to said first lever, said levers adapted to be positioned on either side of said vertical column;
(c) a fulcrum bar fixed to said first lever near the center thereof and extending perpendicularly thereto;
(d) a seat bar fixed to said second lever near one end thereof and extending perpendicularly thereto;
(e) securing means associated with said fulcrum bar and said second lever for clamping said first and second levers to each other securely about said vertical column;
(f) adjustment means fixed to the end of each of said first and second levers remote from said one end and operable to contact said vertical column and vary the effective distance between the end of each of said levers and said fulcrum bar when said beam seat is clamped upon said vertical column;
(g) said first and second levers, said fulcrum bar and said adjustment means each being in firm contact with said vertical column and said seat bar being supported horizontally by said levers at a spaced distance from said vertical column when said beam seat is in position on said vertical column.

3,373,989
AUTOMATIC FOLDED MATERIAL CONVEYOR
John E. Le Baron, Exeter, N.H., assignor to Tab Products Company, San Francisco, Calif., a corporation of California
Filed Mar. 18, 1966, Ser. No. 535,487
13 Claims. (Cl. 271—2)

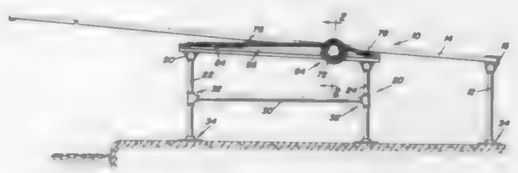
1. A method for automatically conveying a plurality of individual pieces of materials having a fold to a printer, comprising:
A. feeding a stack of said individual pieces to a slotted moving conveyor belt;
B. creating a suction force directly above the top piece of the stack with a vacuum device, forcing the fold of successive pieces into engagement with successive slots in the conveyor belt;
C. conveying the engaged pieces to the printer via the conveyor belt.

7. A method for disengaging a series of flaps of folded material being carried on slots of a conveyor belt comprising:
A. contacting the flaps being carrird between an eject belt and the conveyor belt;



B. rotating the eject belt at a faster speed and in a direction opposite to the conveyor belt, thereby discharging the flaps from the slots.

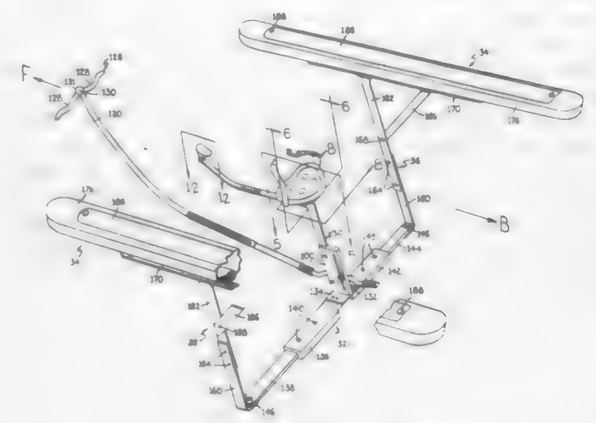
3,373,990
ADJUSTABLE FULCRUM FOR DIVING BOARD
Walter J. Riniker, 1059 Aileen St., Lafayette, Calif. 94549
Filed July 27, 1965, Ser. No. 475,133
6 Claims. (Cl. 272—66)



An elongated generally cylindrical fulcrum member extending transversely beneath a diving board intermediate its opposite ends and rollingly supported for rolling movement longitudinally of the diving board, sprocket means carried by said fulcrum member and elongated chain means entrained over and at least slightly bowed by said sprocket means and generally paralleling the board with means anchoring the opposite ends of the chain relative to a support structure from which the fulcrum member is rollingly supported with the anchor means at one end of the chain including spring means anchoring the corresponding end of the chain means in a manner such as to lengthwise tension the chain.

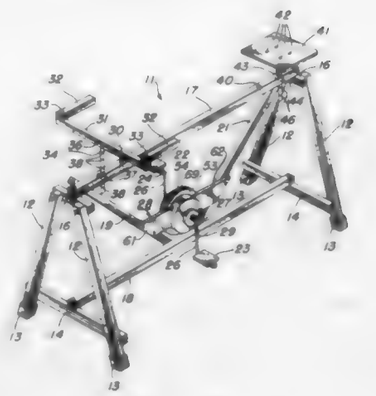
3,373,991
MOBILE SWIMMING SUPPORT AND INSTRUCTION APPARATUS
Harry R. Smalley, 1616 Mount Eagle Place, Alexandria, Va. 22302
Filed Apr. 29, 1965, Ser. No. 452,464
5 Claims. (Cl. 272—71)

A support apparatus for swimmers having a mobile base with adjustable and resilient torso support, an adjustable and resilient auxiliary head support attachment, and an auxiliary dual purpose attachment to support either the arms or legs of swimmers. The apparatus with auxiliary attachments provides the resilient support function, supporting swimmers partially submerged in water,



while not impeding natural swimming movements of swimmers.

3,373,992
BICYCLE EXERCISER
Gilbert K. Luderman, 3548 College Ave., San Diego, Calif. 92115
Filed Sept. 17, 1965, Ser. No. 488,052
2 Claims. (Cl. 272—73)



2. In a bicycle exerciser having a frame with handle bars and a seat mounted thereon and first and second rotatable pedals carried thereby, the improved pedal impedance means comprising:
a liquid bath mounted between said first and second pedals;
said first and second pedals being operably connected to an axle, said axle passing through said liquid bath; and
a paddle wheel carried by said axle and positioned within said liquid bath.

3,373,993
RESISTANCE EXERCISER AND BRAKEABLE MOBILE CARRIAGE
Carl W. Oja, 2190 Marshall Ave., St. Paul, Minn. 55104, and Richard L. Scheuerman, Inver Grove, Minn., assignors, by mesne assignments, to said Carl W. Oja, St. Paul, Minn.
Filed Oct. 26, 1964, Ser. No. 406,265
7 Claims. (Cl. 272—81)

6. A mobile carriage assembly capable of being braked against movement, comprising a base frame, casters supporting said base frame, and brake means, said brake means comprising plungers having friction-surfaced ends capable of elevating said base frame and supporting it

in said elevated condition with support removed from said casters, said plungers being mounted near the location of said casters on said base frame to depend downwardly from said base frame and be movable slidably in an essentially vertical direction, shiftable means adapted to act upon said plungers to slidably elevate and lower the same, pivotable means carried on said base frame in a position horizontally displaced from said shiftable means, said pivotable means being pivotable about a vertical axis, means extending horizontally from said pivotable means to said shiftable means and adapted to transfer motion from said pivotable means to said shiftable means, and handle means for pivoting said pivotable means between one position causing elevation of said plungers and another position causing lowering of said plungers to brake said carriage against movement.

7. Apparatus for aiding the support of weak limbs during therapeutic exercise movement of the same, said apparatus being mobile and adapted to be moved into a position behind an upright individual whose arms require said aid, the essential features of said apparatus, comprising, in combination, (1) a carriage comprising a base frame, (2) at least one upright standard supported from said base frame, (3) at least one essentially horizontal supporting arm mounted at the upper terminus of said upright standard, with the forward end of said arm cantilevered outwardly from said upright standard, pivot joint means rendering a substantial portion of the cantilevered end of said arm adjustable from said operative essentially horizontal position to an inoperative collapsed position, (4) resistance means mounted on said apparatus, said resistance means being adjustable to provide varying degrees of resistance as determined by an operator, (5) a flexible connecting line extending from said resistance means toward the forward cantilevered end of said arm over guide means carried on said arm to a downwardly freely suspended terminal position, and (6) means to adjust the height of said supporting arm.

3,373,994

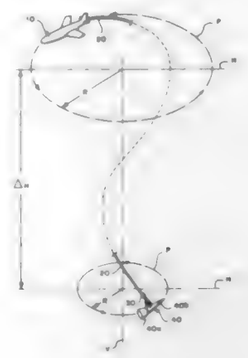
METHOD OF ACHIEVING VERTICAL DISPLACEMENT OF A TOWED TARGET FROM A TOWING AIRCRAFT

Wilmer C. Woodward, Blue Bell, Pa., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 25, 1966, Ser. No. 522,989
3 Claims. (Cl. 273—105.3)

1. In a target system, the method of positioning a towed target at a predetermined vertical distance below the towing aircraft so that the aircraft is at an altitude beyond the range of the weapons being used against the target, comprising:

continuously flying the towing aircraft in a predetermined fixed orbit calculated to achieve a desired vertical distance of the target below said towing aircraft;



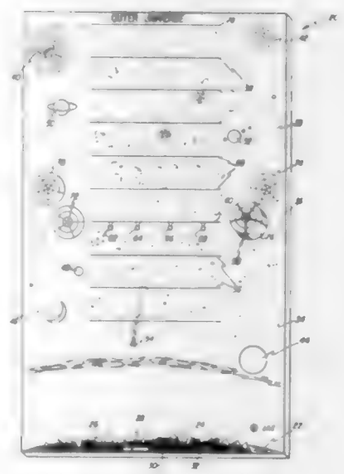
and maintaining said towing aircraft in said predetermined fixed orbit.

3,373,995

SPACE GAME HAVING MULTIPART COUNTERS AND MULTIPART PLAYING PIECES

James A. Fors, 4958 W. Parker Ave., Chicago, Ill. 60639

Continuation of application Ser. No. 753,379, Aug. 5, 1958. This application Jan. 24, 1964, Ser. No. 341,482
5 Claims. (Cl. 273—134)



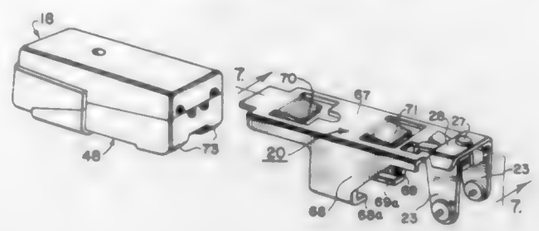
1. A game comprising a game board having indicia thereon simulating a cross section of space extending out from the earth, indicating a starting place for each player on the surface of the earth and indicating a division between two parts of space, one adjacent to the earth and the other remote, said board also having thereon a series of spaced apart lines substantially parallel to the said surface of the earth for indicating steps of movement, one being located substantially at said division and others being located on opposite sides of said division, the one most remote from the starting place being the winning line, a selector device operable in turn by each player to give positive and negative indications according to chance, and a set of playing pieces for each player including a multipart counter movable on said board from one of said starting places to said winning line and providing means for indicating cumulatively the number of negative limitations accruing to each player up to a predetermined maximum, one part of the said counter being separated from the remainder for each such negative indication, and means comprising multipart playing pieces for indicating the number of times each player's counter has achieved the said line located substantially at the division, one part of said last named playing piece being placed on the board each time said last named line is achieved.

3,373,996

CARTRIDGE MOUNTING ASSEMBLY

Seymour Kessler, Wilmette, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Aug. 25, 1965, Ser. No. 482,403
5 Claims. (Cl. 274—24)



1. In a phonograph for reproducing sound from records, a tone arm and cartridge assembly comprising:

a first cartridge casing section;

a second cartridge casing section mating with said first section, at least one of said casing sections having a notch extending at least partially across one side thereof, and at least one of said casing sections having a channel formed therein, said casing sections defining in assembled relation an interior cavity;

a record engaging stylus;

transducer means occupying said cavity and having a portion thereof extending exteriorly of said casing to operatively engage said stylus for developing an electrical signal proportional to the physical movement of said stylus;

means for maintaining said cartridge casing sections in demountable assembled relation and consisting essentially of a bracket comprising a first surface portion adjacent the side of one of said casing sections opposite that mating with the other of said casing sections and having a side portion extending from said first surface portion and terminating in an inwardly facing portion, said first surface portion having bias means engaging said adjacent casing section for yieldably urging said assembled cartridge firmly into engagement with said inwardly facing portion and preventing movement of said cartridge with respect to said bracket means when said inwardly facing portion resides in said notch of one said casing sections and whereby said assembled cartridge is easily withdrawn from said bracket means by simultaneously forcing said cartridge upward against said bias means and longitudinally with respect to said bracket;

and means including said bracket means for mounting said cartridge to said tone arm.

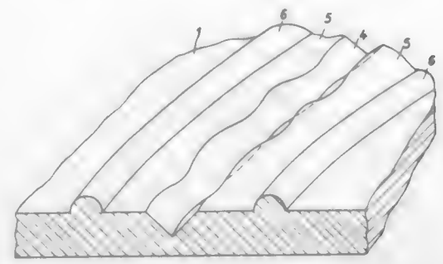
3,373,997

RECORD

Walter Berndt, Ulm (Danube), and Horst Redlich, Berlin-Wilmersdorf, Germany, assignors to Telefunken Aktiengesellschaft, Berlin-Charlottenburg, Germany

Filed Mar. 18, 1965, Ser. No. 440,888
Claims priority, application Germany, Mar. 19, 1964, T 25,845
2 Claims. (Cl. 274—42)

A recording disc having an erasable magnetic track and a non-erasable mechanical track. The disc is provided with a ridge which follows the Archimedean spiral substantially about the center of the disc and which defines, between successive ridges, a magnetic recording track. The mechanical track, consituted by a laterally modulated groove, is cut into and is positioned substantially at the center of the magnetic recording track, the width of the



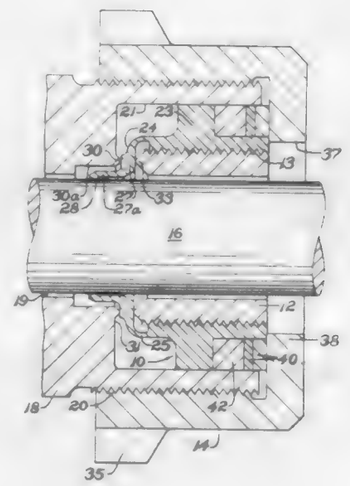
magnetic track being great enough to accommodate the maximum lateral groove deflections, peak to peak.

3,373,998

DIAPHRAGM SEAL WITH A TUBULAR EXTENSION CARRYING THE SEALING EDGE

Ludwik S. Bialkowski, Troy, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed Oct. 14, 1965, Ser. No. 495,778
10 Claims. (Cl. 277—110)



A diaphragm-type fluid pressure seal useful for static reciprocating or rotary service on rods or in cylinders has its annular sealing edge formed on a tubular extension of the diaphragm which is generally concentric with the surface against which the seal is made. Deflection of the diaphragm alters the circumferential length of the sealing edge and therefore the sealing load. Although the seal is rigid and preferably of metal, the tubular extension has adequate flexibility so that it can conform to non-circularity, eccentricity and is better able to withstand side loads or wobble motions of the part engaged by the sealing edge.

3,373,999

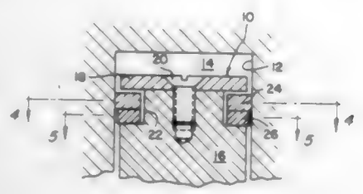
PISTON RINGS

Robert E. Jepsen, Emmaus, Pa., assignor to Air Products and Chemicals, Inc., Allentown, Pa., a corporation of Delaware

Filed July 26, 1965, Ser. No. 474,781
2 Claims. (Cl. 277—193)

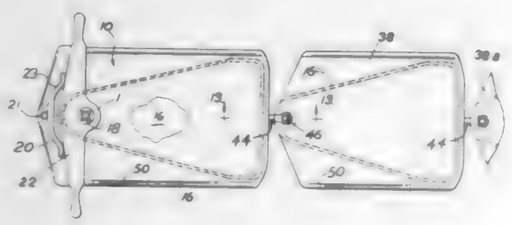
A pair of fluid sealing piston rings in which the upper ring is a split ring readily expandable into sealing engagement with the cylinder and the lower ring is a nonsplit,

integral ring having a normal outer diameter less than that of the cylinder. Fluid passages admit high-pressure fluid



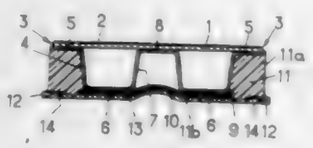
to the interior of the integral ring so as to expand it into sealing engagement with the cylinder only when such fluid pressure exceeds a predetermined value.

3,374,000
COMBINATION VEHICLE
Ervin H. Wetzel, 1440 Lawrence Ave., Lake Forest, Ill. 60045
Filed Apr. 25, 1966, Ser. No. 544,858
2 Claims. (Cl. 280—8)



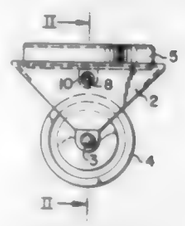
A vehicle for coasting or the like has a supporting platform provided with means for removably associating therewith mobil supporting units such as wheel units or runner units. A simple socket arrangement is provided for this purpose. For enlarging the vehicle a trailer unit is provided connectable with the basic vehicle.

3,374,001
METALLIC SKI
Antoine Joseph Georges Baudou, Les Eglisottes, Gironde, France
Filed Sept. 10, 1965, Ser. No. 486,268
Claims priority, application France, Aug. 12, 1965, 28,225, Patent 1,459,879
11 Claims. (Cl. 280—11.13)



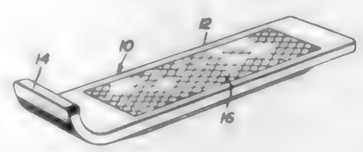
A ski comprising an elongated metallic upper plate, a channel member having laterally projecting flanges having their longitudinal edge portions secured to and registering with the longitudinal edge portions of said upper plate. The channel member has a bottom divided by a longitudinal corrugation which extends upwardly to the level of said flanges, an elongated metallic lower plate spaced from said upper plate by said channel member and is provided with a shallow groove seated in said corrugation. The upper plate is secured along its longitudinal edge portions to said flanges and centrally to said corrugation, while the lower plate is fixed to the bottom of said channel member, the space between said flanges and above said bottom plate being filled with a moldable material.

3,374,002
ONE-WHEELED ROLLER SKATE
Samuel Lewis, 670 Riverside Drive, New York, N.Y. 10031
Filed June 3, 1966, Ser. No. 555,106
2 Claims. (Cl. 280—11.24)



1. A roller skate comprising, in combination:
(a) support means defining a supporting platform;
(b) a wheel;
(c) bracket means securing said wheel to said support means for rotation about an axis substantially parallel to said platform, said platform having a medium plane transverse of said axis through said wheel; and
(d) securing means for securing the foot of a wearer to said platform in a position in which said foot is elongated substantially parallel to said platform and to said plane,
(e) said support means including a plate member, said bracket means being fixedly mounted on one side of said plate member,
(f) said securing means including two jaw members mounted on said plate member and projecting from the other side of said plate member on opposite sides of said median plane, and
(g) adjusting means for moving said jaw member relative to each other on said plate member in the direction of said axis,
(h) the dimension of said platform in the direction of said median plane being not substantially greater than the width of said platform in the direction of said axis.

3,374,003
SNOW SKI BOARD
John L. Fulsom, 2747 Wismer Road, Overland, Mo. 63114
Filed Jan. 12, 1966, Ser. No. 520,117
3 Claims. (Cl. 280—18)

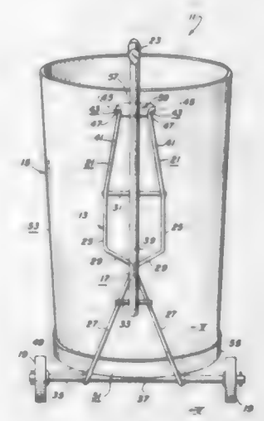


An elongated generally planar body including a forwardly and upwardly curving toe portion, being of a width slightly greater than the width of the shoe and of a length approximately five times it width and including depending opposite side runners spaced inwardly from the corresponding side edges of the body but depending from the outer half portion of the corresponding side of the body.

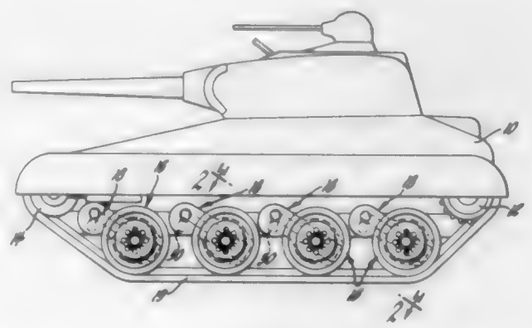
3,374,004
TRASH HANDLING APPARATUS
Ray D. Oliver, Rte. 3, Perryville, Mo. 63775
Filed Oct. 19, 1966, Ser. No. 587,876
5 Claims. (Cl. 280—47.26)

1. Trash handling apparatus comprising a cart and a container; said cart including upstanding support structure, ground engageable wheel means rotatably mounted

on the lower portion of said support structure, handle means fixed on the upper portion of said support structure, a pair of substantially short oppositely projecting generally horizontal prong portions individually movably supported from said support structure and spring means for yieldably urging said pair of prongs apart and substantially in opposite directions, said pair of prongs being adapted to be manually manipulated simultaneously equidistantly between a first arrangement in which said pair of prongs are arranged substantially together and a second arrangement in which said pair of prongs are arranged substantially apart; said container being generally barrel shaped and including a bottom portion and an upstanding circumferential walled body portion including a vertical wall portion defining a horizontally elongated through opening, said container being removably fitted on said cart with said oppositely projecting prongs being arranged in said second arrangement and extending through said elongated opening and engaging said vertical wall portion.

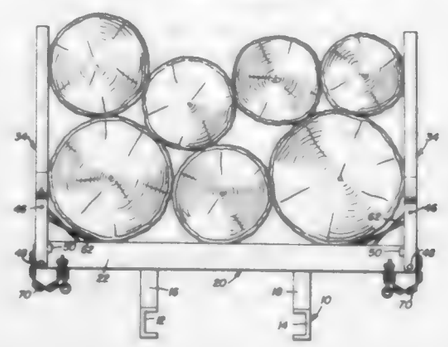


3,374,005
INDEPENDENT WHEEL SUSPENSION
Richard H. Donlon, Haunstetten, Germany, and Henry Sinko, Bay Village, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 26, 1965, Ser. No. 482,689
5 Claims. (Cl. 280—124)



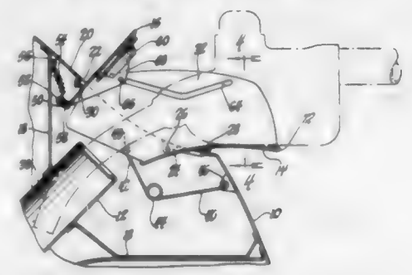
A vehicle suspension unit having a hollow arm pivotally connected adjacent one end to the vehicle and having a road wheel rotatably mounted on the arm adjacent the other end thereof. A spring device is located within the arm for movement therewith and for cushioning oscillatory movement of the arm relative to the vehicle. Means are also provided for pivotally connecting one end of the spring device to a fixed point adjacent the connection between the arm and the vehicle.

3,374,006
LOGGING BUNK
Wilmer R. Possinger and Wilson W. Myers, Port Angeles, Wash., assignors to Lincoln Welding, Inc., Port Angeles, Wash., a corporation of Washington
Filed Feb. 16, 1966, Ser. No. 527,820
8 Claims. (Cl. 280—145)



An elongated logging bunk defining body having corresponding ends of a pair of elongated stakes pivotally secured to its opposite ends for rotation about generally parallel axes extending transversely of the stakes and the body, the body being tubular and a pair of flexible tension members extending longitudinally of the body each including an end portion secured to the corresponding stake at a point spaced from the axis of rotation thereof and the adjacent portions of said body with the free end portions of the tension members passing downwardly through openings formed in the top wall of the body and extending outwardly of the ends of the body remote from the stakes to which the tension members are secured.

3,374,007
TANK FILLER ARRANGEMENT
Anthony J. Ingolia, St. Clair Shores, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 9, 1966, Ser. No. 556,503
6 Claims. (Cl. 280—152)

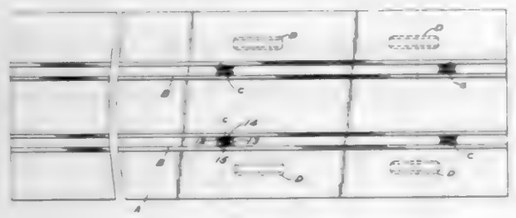


An automobile fuel tank filler arrangement including two covers which are simultaneously operable, one cover being a sealing closure and the other being ornamental ordinarily but also serving as a trough support for a gas pump nozzle during tank filling.

3,374,008
VEHICLE TIE-DOWN STRUCTURE
Donald J. Blunden, Southfield, James E. Black, Jr., Trenton, Louis K. De Shetler, Allen Park, and Eugene D. Gotcher, Gibraltar, Mich., assignors to Whitehead & Kales Company, River Rouge, Mich., a corporation of Michigan
Filed July 18, 1966, Ser. No. 565,970
8 Claims. (Cl. 280—179)

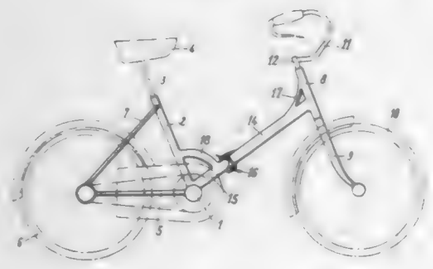
1. A vehicle tie-down structure, comprising a longitudinally extending rail adapted to be anchored lengthwise upon a longitudinally extending deck of a transport

vehicle and having an upright side wall provided with a plurality of longitudinally spaced openings, a carriage carried by and adjustable lengthwise of said rail, a rotatable stub shaft extending transversely of said carriage, a ratchet gear fixed to said stub shaft, a stub shaft movable in one direction transversely of said carriage to an extended position engaging a selected opening in the upright side wall of said rail to hold said carriage in adjusted position and movable in the opposite direction to a retracted position withdrawn from the opening in the upright side wall of said rail, means for tying down and holding a vehicle after said carriage has been held in adjusted position, including a flexible element connected to said rotatable stub shaft and adapted to be connected to a part of the vehicle, said flexible element being adapted to be wound on said rotatable stub shaft and tensioned thereby during rotation thereof, a pawl rotatably mounted on said carriage and movable from an inoperative position withdrawn from said ratchet gear to an operative position



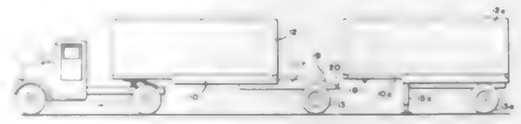
in engagement with a selected tooth of said ratchet gear to hold the latter against rotation after said flexible element has been attached to a vehicle and has been tensioned, and means for preventing movement of said transversely movable stub shaft in said opposite direction from its extended position and withdrawal thereof from the opening in the upright side wall of said rail when said pawl is in its operative position, said means comprising a flange on said transversely movable shaft, a lug on said pawl disposed alongside said flange in said operative position of said pawl and said extended position of said transversely movable shaft so that upon initial movement of said transversely movable shaft in said opposite direction from its extended position said lug will engage said flange and prevent further movement of said transversely movable shaft in said opposite direction, said lug on said pawl, when said pawl is in inoperative position, clearing said flange to permit movement of said transversely movable shaft in said opposite direction to its retracted position.

3,374,009
FOLDING BICYCLE
André Jeunet, 24 Ave. de Besacon, Dole, Jura, France
Filed Mar. 14, 1966, Ser. No. 534,073
Claims priority, application France, Mar. 24, 1965, 10,466
4 Claims. (Cl. 280—287)



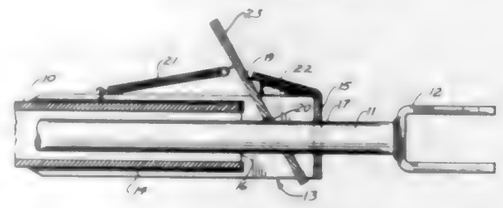
A folding bicycle has a main frame member in the form of a single tubular beam comprised by two aligned tube sections hinged together for relative vertical swinging movement about a horizontal axis disposed below the beam at an oblique angle to the axis of the beam. In this way, weight on the bicycle is transmitted as compression acting lengthwise in the beam. A lock for maintaining the bicycle extended comprises a pair of radial ribs one on each beam section and a wing nut for releasably securing them together. The pivotal connection comprises a yoke on one beam section that receives a sleeve on the other beam section, with a pivot pin extending through the yoke and sleeve.

3,374,010
COUPLEABLE CHASSIS
Joseph G. Crockett, Lynnfield, Mass., and Roy C. Belcer, Opp, Ala., assignors of one-half to XTRA, Inc., Boston, Mass., a corporation of Massachusetts, and one-half to Dorsey Trailers, Inc., Elba, Ala., a corporation of Delaware
Filed May 6, 1966, Ser. No. 548,106
9 Claims. (Cl. 280—415)



A chassis module which may be used as an individual trailer unit coupled to a highway tractor or in tandem when longitudinally coupled with an identical module to form a double-length trailer. The tandem arrangement is accomplished by sliding a sub-chassis rearwardly from the chassis module to provide the fifth wheel for attachment of the second module. The modules are rigidly coupled longitudinally and the respective wheels of the module bogies are joined to provide a single load distributing bogie.

3,374,011
ADJUSTABLE FARM IMPLEMENT TONGUE
John A. Schipper, Aplington, Iowa 50604
Filed Feb. 4, 1966, Ser. No. 525,064
1 Claim. (Cl. 280—478)



A telescoping implement tongue having a locking means which is engaged by pulling on the tongue and is easily releasable. The inner bar is readily adjustable to various lengths by the telescopic action so that it may be extended for connection to a pulling device.

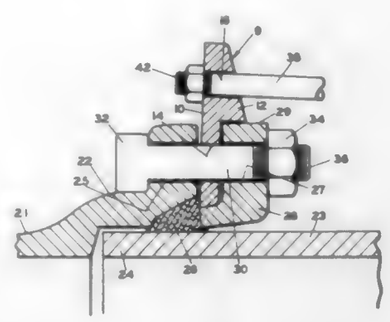
ERRATUM

For Class 280—512 see:
Patent No. 3,374,268

3,374,012
TIE LUG
Paul V. Metcalfe, Columbus, Ohio (367 Riverside Drive, Tequesta, Fla. 33458), and James D. Ford, 1479 Blaine Drive, Columbus, Ohio 43227
Filed Sept. 12, 1966, Ser. No. 578,752
8 Claims. (Cl. 285—114)

This invention relates to improvements in tie lugs for use in plumbing installations. More particularly the invention concerns a lug for anchoring the end of a tie rod at a bell flange and spigot pipe joint and for sealing more effectively the bell flange and spigot joint. One portion of

the lug designated herein as the lower portion of the lug is positioned on a bolt which connects the bell flange and the gland and is inserted between said bell flange and said gland. The other end of the lug designated herein as the upper portion is formed to hold securely the end of a

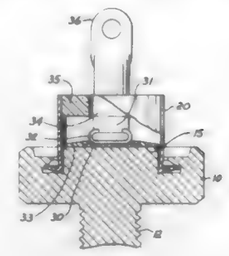


tie rod. The tie lug is designed in such a manner that when the tie rod is tightly anchored to the lug, pressure is thereby exerted on the gasket between the bell flange and the gland with the result that a more effective seal is achieved.

3,374,013
HOSE CONTAINMENT DEVICE
Albert L. Clay, Mystic, and Alfred W. Fidrych, Stonington, Conn., assignors to The Kellems Company, Incorporated, Stonington, Conn., a corporation of Connecticut
Filed Sept. 25, 1964, Ser. No. 399,214
4 Claims. (Cl. 285—114)

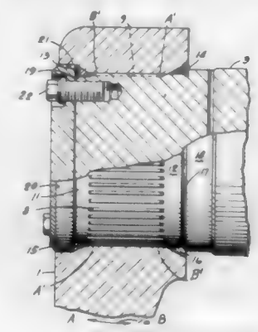
1. The combination of a supply pipe for fluid under high pressure, a delivery pipe spaced from said supply pipe, a length of hose provided at its two ends with coupling members and coupled at one end to said supply pipe and coupled at its other end to said delivery pipe, and hose containment means for safety containing said hose in the event of failure thereof or failure of either of said coupling joints, said hose containment means being separate from the hose and permitting the hose to flex substantially normally, and including elongated woven structure means composed of strands interwoven in open mesh fashion and mounted in surrounding relation on said entire length of hose, the outer hose gripping end portions of said woven structure means being located on the end portions of said hose inwardly of said coupling joints, a support associated with and located outwardly of each of said coupling joints and being fixed with relation to the pipe associated with such joint, and means securely connecting said outer end portions of said woven structure means to said supports, said connecting means extending from said end portions in by-passing relation to and independently of the coupling joints to directly connect the outer ends of said woven structure means to said supports, thereby eliminating abnormal stress on the coupling joints.

3,374,014
SWAGED SEALS
Francis R. Kull, Warminster, and Ronald Waeltz, Hatboro, Pa., assignors to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed July 27, 1965, Ser. No. 475,059
4 Claims. (Cl. 287—20.3)



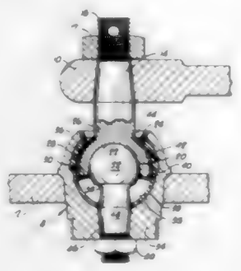
1. In combination, a base member and a cap adapted to be interlocked, said cap having a tube part of circular cross section, said base member having an annular groove adapted to concentrically receive the leading end portion of the tube part, said tube end portion terminating at a sharp annular edge and having an outwardly cantilevered circumferential flange whose outer edge lies in a plane intersecting the axis of the tube part at a point inboard the sharp annular edge; swaged material from the outer wall of the groove pressing against the flange surface around its entire upper periphery, the flange being deflected and bent downwardly to a position in which the outer peripheral portions of the bottom surface of the flange are spaced from and not in contact with the base and the leading end of the tube immobilized by the sharp annular edge of the tube part being driven into and below the surface of a shoulder of base material projecting into the groove to interlock and seal the cap and base, said interlock being characterized in that an elastic stress is induced and maintained in the flange by the co-action of the swaged material pressing against the upper surface of the flange and the immobilization of the tube end.

3,374,015
METHOD OF COUPLING SHAFT TO ARM TO TRANSMIT TORQUE AND MOMENT WHICH ARE NOT COPLANAR
Paul E. Gies, Amherst, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed July 22, 1965, Ser. No. 474,126
3 Claims. (Cl. 287—53)



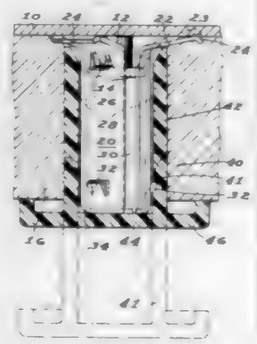
A torque transmitting assembly having a shaft mounted for rotation which is splined to a torque arm at one end thereof and wherein first and second cylindrical rings are disposed at opposite edges of the splined shaft region to maintain the radial alignment between the shaft and externally fitted arm. A locking plate is bolted to the shaft and engages one of the cylindrical rings to hold the rings in position and thereby prevent peening of the splined surfaces due to the twisting or torqueing of the arm relative to the shaft.

3,374,016
BALL JOINT
James O. Melton, Norman, and Thomas B. Wilkinson and James H. Jackson, Oklahoma City, Okla., assignors to Jamco, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Aug. 19, 1965, Ser. No. 481,015
15 Claims. (Cl. 287—87)



A ball joint having a spindle adapted to be connected at one end to one of two members movable relative to each other, and having a ball-receiving socket at the other end. A housing surrounds the socket and has an aperture therein accommodating the spindle. The housing is adapted for connection to the other of the two members. A ball fits in, and is engaged by, the socket, and a stud interconnects the ball with the housing at a point on the opposite side of the housing from the spindle-accommodating aperture therethrough.

3,374,017
RETAINER ASSEMBLY
Engelbert A. Meyer, Union Lake, Mich., assignor to Warren Fastener Corporation, Mount Clemens, Mich., a corporation of Michigan
Filed Mar. 31, 1966, Ser. No. 539,127
7 Claims. (Cl. 287—189.35)



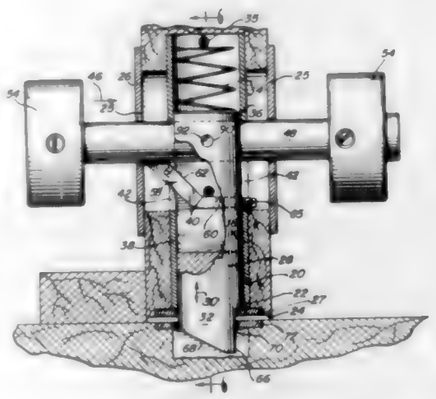
This disclosure relates to a retainer assembly adapted to secure a structural member to a support, including a headed button secured to the support, a metal clip secured beneath the button head having downwardly facing locking spurs, and a retainer formed of a material softer than the clip spurs telescopically received over the clip and deformably retained thereon by the spurs.

3,374,018
SNAP-ACTION CATCH
Ernst Adam Lust, Industriestrasse 13–15, Lampertheim, Hesse, Germany
Filed Jan. 6, 1966, Ser. No. 519,113
Claims priority, application Germany, Jan. 8, 1965, L 49,670
6 Claims. (Cl. 292—45)

A catch mechanism for latching a door member in an associated frame member. The mechanism comprises at least one forked element mounted for pivotal movement on either the door or the frame, a catch pin for each forked element mounted on the other of the two for engaging the forked element, a resilient thrust rod slidably mounted in the same member as the forked element, means connecting the forked element and the thrust rod for displacing the thrust rod as the forked element moves

pivotally, a roller secured to the thrust rod and movable together with the thrust rod, a peg fixed in the path of the roller such that as the roller passes over the peg, the thrust rod being resilient is laterally deformed. The peg is positioned relative to the roller so that it is in engagement with the roller when the forked element is positioned for the door to be either opened or closed.

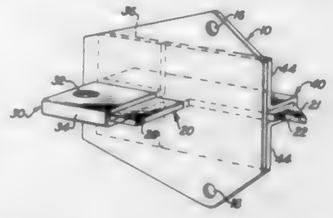
3,374,019
LOCK ASSEMBLY WITH PRIVACY MEANS
Albert C. Sanowskis, Chicago, Ill. (16600 Patricia Ave., Tinley Park, Ill. 60477)
Filed Oct. 23, 1965, Ser. No. 503,366
8 Claims. (Cl. 292—170)



A push-pull type lock device mountable in a door and incorporating a hollow housing in which a retractile spring biased latch bolt is slidably movable in a first direction and a straight hollow member is engaged at right angles to said housing and bolt through aligned transverse passages formed therein and is movable in a second direction at right angles to said first direction, the hollow member carrying a cam surface bearing arm adapted to contact a pin carried in the latch bolt to retract the bolt on movement of the hollow member, said hollow member also carrying, disposed entirely therewithin, a solid member having a reduced thickness portion in which a lug is ridable between a condition blocking movement of said hollow member and said latch bolt and a condition freeing

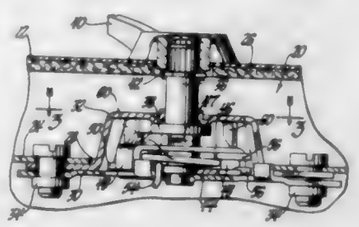
the same, thereby to comprise privacy lock means disposed entirely within the intersecting portions of said latch bolt, said housing and said hollow member. The invention also provides a dead-bolt means operable to immobilize the latch bolt independent of the means to immobilize the hollow member's movement but releasable by release of said last mentioned means.

3,374,020
LATCH MECHANISM
Robert D. W. Berg, 9200 Upton Ave. S., Bloomington, Minn. 55431
Filed May 2, 1966, Ser. No. 546,767
6 Claims. (Cl. 292—175)



A locking unit for a closure comprising a rigid L-shaped latch bolt which is spring projected and secured to a mounting plate by a pair of U-shaped brackets.

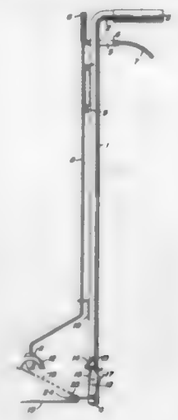
3,374,021
LATCH OPERATING ASSEMBLY
Ronald S. Gulette, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 23, 1966, Ser. No. 596,676
5 Claims. (Cl. 292—336.3)



1. In a vehicle body having a door and a door latch, latch operating means comprising, support means on the door, operating handle means mounted on said support means for rotation about an axis between a nonactuating and a latch actuating position, actuating means rotatably mounted on said support means in axially spaced relation to said handle means and being connected to said latch for actuation thereof, and connecting means responsive to rotation of said handle means from said nonactuating toward said latch actuating position thereof to move axially of said handle means to connect said handle means and said actuating means for simultaneous rotation and actuation of said latch, said actuating means being free of connection with said handle means by said connecting means in the nonactuating position of said handle means.

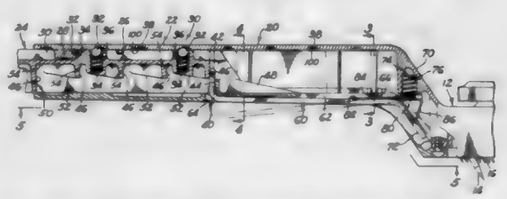
3,374,022
COMBINATION OBJECT MOVING DEVICES AND CANES OR WALKING STICKS
Howard L. Tagg, 17 Hawk Lane, Levittown, N.Y. 11756
Filed Feb. 8, 1966, Ser. No. 525,983
5 Claims. (Cl. 294—2)

The combination object moving device and cane or walking stick is a cane with a lever under the handle moving a spring-returned push rod downward on far side from handle, the bottom end of push rod fitted with a flat footed but undercutted edge and underside part at 90 degrees to axis of push rod, its feet mating in parallel plane with an object receiving plate at bottom of rod. The object receiving plate is pivoted to swing up at an angle position for storage against the object holding piece to



provide clearance from ground for use of the device as cane or walking stick. The object receiving plate is moved down from storage position by pushing the push rod, and is held in position by springs. The plate is returned by pushing against the ground or a walk. Special pick-up means can be fastened to an auxiliary rod attachable to the object receiving plate.

3,374,023
KNEE-ACTUABLE CARPET STRETCHER WITH ADJUSTABLE-LENGTH SHANK
Harvey J. Hill, Monterey Park, and Nicholas Giandomenico, Covina, Calif., assignors to Roberts Consolidated Industries, Inc., City of Industry, Calif., a corporation of California
Filed Apr. 4, 1966, Ser. No. 539,965
8 Claims. (Cl. 294—8.6)

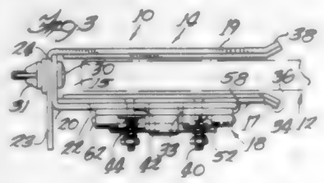


An adjustable-shank knee-actuable carpet stretcher having a trigger-operated laterally-movable stop acting in shear between a laterally-extending fixed stop on one shank member and each of a series of longitudinally-spaced laterally-extending fixed stops on another shank member telescopically connected to the first. Mechanism for releasably latching the shank members in their different relative longitudinal positions for indexing purposes, and for simultaneously longitudinally biasing the shank members relative to each other in directions to maintain the movable stop in positive engagement with the two fixed stops between which it is inserted, so as to prevent rattling.

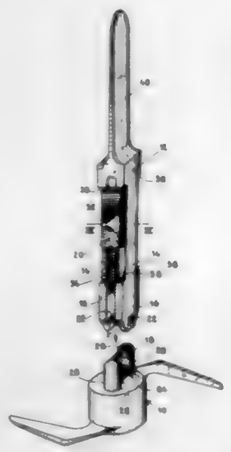
3,374,024
HANDLING DEVICE
Jesse Le Roy Reynolds, Decatur, Ill., assignor to Woare Builders Supply Company, Decatur, Ill., a partnership
Filed June 17, 1965, Ser. No. 464,752
6 Claims. (Cl. 294—16)

A handling device for flat panels is provided which includes a U-shaped recess within which is a plate which cooperates with one side of the U to grip the panel. The plate is moved by a cam attached to the pivot of a handle

which pivots upward and outward about a line parallel to the side of the U to which it is attached and perpendicular to the base of the U so that a workman standing on one side of the panel grips and lifts the panel in one movement.

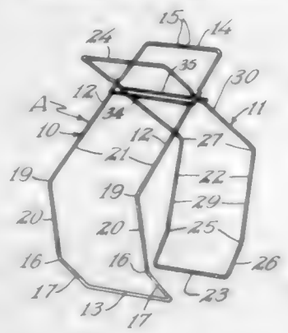


3,374,025
GRIPPERS FOR HANDLING OBJECTS
Jean Mantelet, Paris, France, assignor to Moulinex Societe Anonyme, Bagnolet, France
Filed June 3, 1966, Ser. No. 555,171
Claims priority, application France, June 14, 1965, 20,680
5 Claims. (Cl. 294—16)



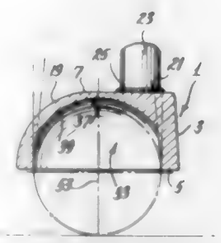
A gripper for handling an object, comprising a fork having two resilient limbs with jaws adapted to resiliently engage the object, and a releasing thrust element having an active part in the form of a pair of blades which insert between the limbs of the fork and the sides of the object to move the jaws out of the object-engaging positions.

3,374,026
MEAT TONGS
Lawrence J. Coleman, 304 Northwest Bank Bldg., St. Paul, Minn. 55101
Continuation-in-part of application Ser. No. 402,308, Oct. 7, 1964. This application Oct. 3, 1966, Ser. No. 583,739
4 Claims. (Cl. 294—16)



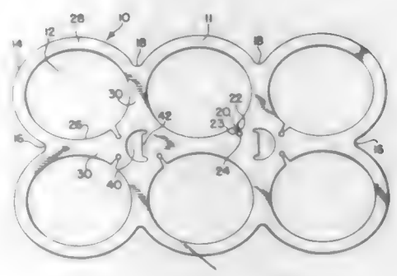
This invention involves a pair of tong arms pivotally connected in intersecting relation. The tong levers are rectangular, elongated, loop-shaped members, one end of each loop forming the handle and the other end forming the gripping ends of the lever arms. The tong arms are bent transversely to provide an intermediate section, a handle section which is substantially longer than the intermediate section, and a gripping section substantially shorter.

3,374,027
GOLF BALL RETRIEVING CLUB
Charles D. Jacobs, 1100 S. Lakeside Drive, Lake Worth, Fla. 32566
Filed Sept. 24, 1964, Ser. No. 399,008
10 Claims. (Cl. 294—19)



A golf ball holding cavity formed in the bottom wall of the head of a golf club. The walls of the cavity are rigid and spaced apart a distance to slightly compress a golf ball inserted therein at the diametrical mid-portion thereof, thus frictionally and releasably holding the ball in the cavity.

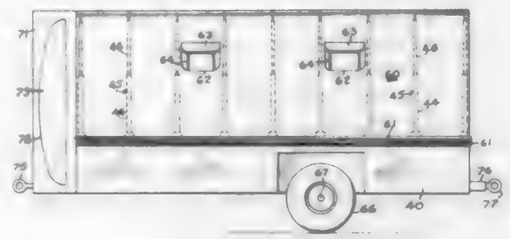
3,374,028
CONTAINER CARRIER
Herbert J. Wanderer, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 27, 1967, Ser. No. 634,255
4 Claims. (Cl. 294—87.2)



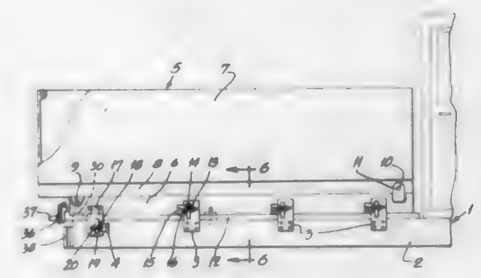
Container carrier formed of plastic sheet material having a plurality of apertures therein for receiving and holding peripheral enlargements at one end of a plurality of containers. The plastic material has at least one notch projecting into the body thereof from each of the apertures. The notches serve to facilitate the initial attachment of the carrier to the plurality of containers and also permit the easy removal of containers from the carrier.

3,374,029
TRAILER CONSTRUCTION
Joseph K. Barker, Rte. 2, Abingdon, Va. 24210
Filed Oct. 14, 1965, Ser. No. 496,071
7 Claims. (Cl. 296—28)

A vehicle body, and more specifically, a trailer body, is made up of hollow structural elements of square cross section, including upper and lower side frame members and vertical members, the upper members being made up of short aligned sections cut off square at their ends and welded in solid abutting relationship with the adjacent flat surfaces of the vertical members, all outer surfaces of the upper and lower side frame members and the vertical members being flush in a common vertical plane so that a closure and rigidifying panel can be secured to all of such flush faces.

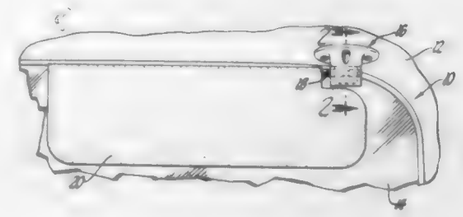


3,374,030
DETACHABLE CONNECTION OF A VEHICLE BODY TO A CHASSIS
Romeo Brisebois, 75 Archambault St., L'Assomption, Quebec, Canada
Filed Dec. 23, 1965, Ser. No. 515,939
Claims priority, application Canada, Dec. 23, 1964, 919,479, Patent 734,310
9 Claims. (Cl. 296—35)



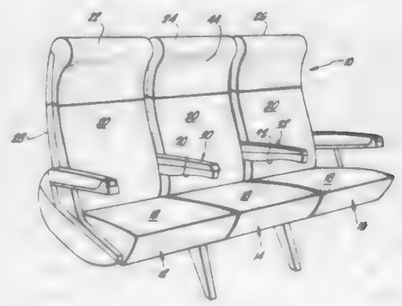
This invention concerns trucks having a body detachably connected to the chassis by means of inter-engageable wedging and anchoring members, firmly held in position by anchoring rods attached to the chassis and detachably engaging the body.

3,374,031
SUNSHADE SUPPORT ASSEMBLY
Floyd I. Dully, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 544,893
5 Claims. (Cl. 296—97)



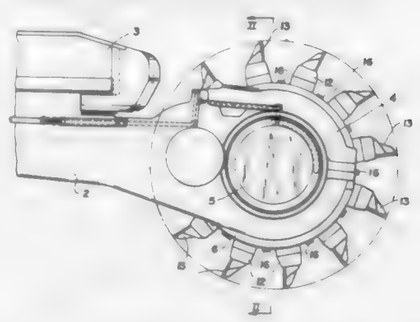
1. A sunshade support assembly comprising, in combination, support means adapted to be fixedly mounted on a vehicle body, a pair of generally telescopically movable members, means rotatably mounting one of said members on said support means, the other of said members being supported on the one member and including at least a pair of spaced clamping portions movable relative to each other, a sunshade support rod located between said portions and being clamped thereby upon relative movement of said portions, cooperating cam means on said members operative upon telescopic movement of said members relative to each other to move said clamping portions relative to each other and into clamping engagement with said support rod, and resilient means biasing said members relative to each other.

3,374,032
AIRCRAFT SEAT
Frank J. Del Giudice, Seattle, Wash., assignor to Hardman Tool and Engineering Company, Los Angeles, Calif., a corporation of California
Filed Feb. 13, 1967, Ser. No. 615,462
12 Claims. (Cl. 297—394)



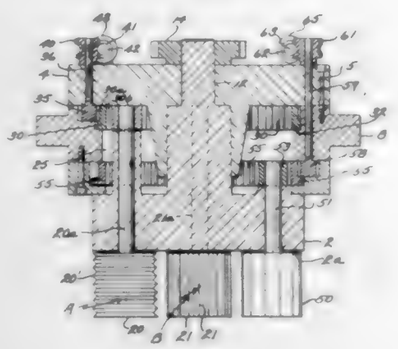
A multiple seat assembly for aircraft having three passenger seats mounted on a frame. Each seat has a headrest above its back in position to cushion a passenger's head. The middle headrest may be removed and positioned above its seat's bottom between the end seats to form an armrest and seat divider. When a three-seat arrangement is desired, armrests between adjacent seats are lowered from the seat's back.

3,374,033
CUTTER HEAD HAVING FLUID SUPPLY MEANS
Einar M. Arentzen, Charleroi Borough, Washington County, Pa., assignor to Lee-Norse Company, Charleroi, Pa., a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 528,726
2 Claims. (Cl. 299—81)



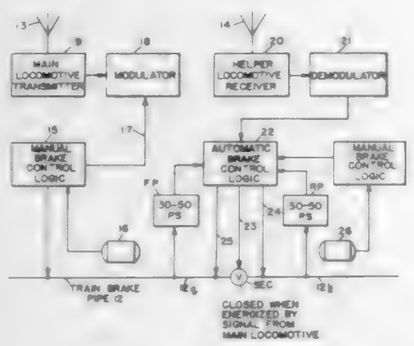
A cutter head for mining machines, which includes a plurality of spaced cutter bits peripherally carried by a rotatable cutter wheel. A plurality of fluid supply nozzles are alternately arranged with the cutter bits and connected to a source of fluid, such as water, through a valving arrangement whereby fluid is supplied through each of the nozzles only when the cutter bits thereadjacent are actually engaged in cutting.

3,374,034
ADJUSTABLE APPARATUS FOR PULVERIZING SOLID MATERIALS
Guy O. Conner, Cleveland Heights, Ohio, assignor to Rolls-Royce of Canada, Limited, Lachine, Quebec, Canada
Filed Nov. 19, 1965, Ser. No. 508,655
9 Claims. (Cl. 299—86)



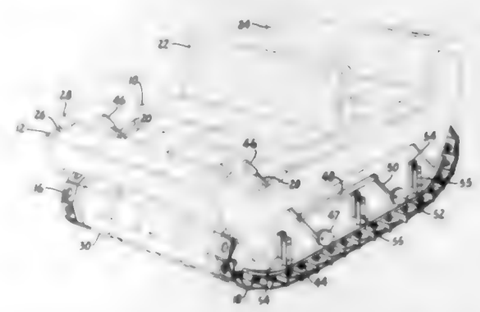
A pulverizing head comprising a large mass for pulverizing solid materials and wherein the head is rotatable in a first direction on an axis that is parallel to and spaced from the material to be pulverized. The head includes at least one breaker element which may be somewhat cylindrical in configuration and rotatably mounted on the head on an axis that is also spaced from and parallel to the rotatable axis of the head. The breaker element is rotable about its axis in a direction that is opposite to the direction of rotation of the head. Adjustable drive means are provided to adjust the relative rotation between the head and each of the breaker elements mounted thereon such that at the instant when the breaker element is brought into engagement with the surface to be pulverized the rotational speed of the breaker elements and the head are synchronized whereby a peripheral point or projection on any one of said breaker elements is disposed so that its linear velocity due to the rotation of the head is substantially equal and opposite to the linear velocity of said projection due to the rotation of the breaker element whereby substantially compressive forces only are applied by said element perpendicularly against the surface to be pulverized.

3,374,035
BRAKE CONTROL SYSTEMS FOR MULTIPLE UNIT TRAINS
James Y. Howard, Spencerport, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed July 1, 1966, Ser. No. 562,247
8 Claims. (Cl. 303—20)



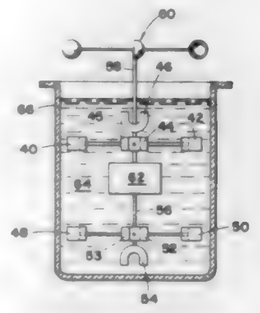
1. A brake control system for a multiple unit train having a main locomotive at the head of the train and a helper locomotive at an intermediate point in the train, each of the locomotives having air brake control apparatus, comprising, communication means for communicating brake control signals from the main locomotive to the helper locomotive, a brake control air line extending throughout substantially the entire length of the train for controlling application of brakes by the respective cars of the train in accordance with air pressure in the air line, sectionalizing means controlled by at least one of the brake control signals communicated from the main locomotive for sectionalizing the brake line at the location of the helper locomotive in the train into forward and rear control sections, and means effective when the brake line is sectionalized for controlling the rear section of the line by the air brake control apparatus associated with the helper locomotive in accordance with the brake control signals communicated from the main locomotive.

3,374,036
RETRACTABLE CLEAT
Hugh H. Shaw, Salinas, Calif., assignor to Domino Sugar Company, a corporation of Delaware
Filed May 17, 1966, Ser. No. 550,808
2 Claims. (Cl. 305—13)



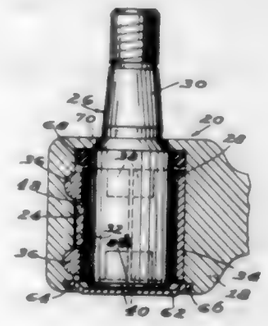
A retractable cleat for track laying vehicles having a resilient cushion and support portion for attachment at the marginal edges of the vehicle tracks and self cleaning features for cleaning snow and ice from the cleat during operation.

3,374,037
MAGNETIC BEARING
Sanford M. Weinberger, Philadelphia, Pa., assignor to General Electric Company, a corporation of New York
Filed Dec. 21, 1964, Ser. No. 420,024
4 Claims. (Cl. 308—10)



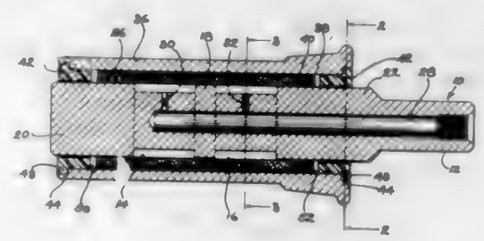
1. A position-seeking device comprising:
a source of magnetomotive force having magnetic poles;
a magnetic fluid whose viscosity and fluidity are substantially independent of any magnetic field applied to it surrounding the said poles;
container means bounding the same fluid and generally conforming to the shape of the said source of magnetomotive force.

3,374,038
PIVOTAL JOINT
William C. Welmer, Detroit, Mich., assignor to Moog Industries, Inc., St. Louis, Mo., a corporation of Missouri
Filed Mar. 23, 1966, Ser. No. 536,824
13 Claims. (Cl. 308—66)



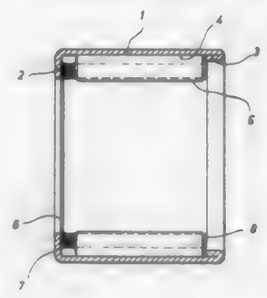
1. A self-adjusting idler arm assembly, comprising: an idler arm having a socket defined therein, a stud having a substantially cylindrical head received within said socket, a bearing comprising two separate bearing halves disposed about said head within said socket, said bearing halves providing substantially cylindrical bearing pads in bearing engagement with said head forming at least a four-point support for said head said points being initially substantially equally spaced about the circumference of said head, and a wedge means continuously and non-reversibly urging one bearing half against said head and said head against the other bearing half to maintain said four-point support of said stud head.

3,374,039
ANTIFRICTION BEARING
Donald A. Voorhies, West Hartford, Conn., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 1, 1965, Ser. No. 484,315
9 Claims. (Cl. 308—107)



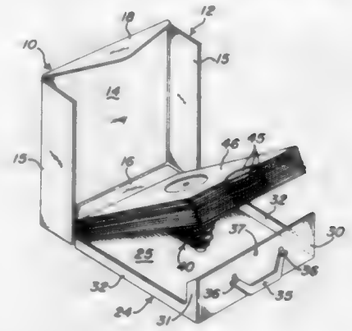
An air bearing of the externally pressurized type in which the stationary support includes a hub and a chamber which opens onto the inside of a porous sleeve portion so that the pressurized air fed to the chamber permeates through it into a controlled clearance between the sleeve and a rotatable shell which surrounds it. The shell includes end bushings spaced from the end faces of the porous member so that the air supports the shell and centers it on the hub. In one embodiment, the end bushings are spaced from the hub outboard of the porous sleeve with the space between the hub and the end bushings providing a restricted leakage path for the air. In a modification, one end of the shell is completely sealed and a valving arrangement is provided at the other end to center the shell on the hub.

3,374,040
ANTIFRICTION BEARINGS WITH CYLINDRICAL ROLLERS
Georg Schaeffler, Herzogenaurach, Germany, assignor to Industriewerk Schaeffler OHG, Herzogenaurach, Germany, a corporation of Germany
Filed Aug. 15, 1966, Ser. No. 572,279
Claims priority, application Germany, Sept. 7, 1965, J 14,183
2 Claims. (Cl. 308—213)



1. An antifriction bearing comprised of a thin-walled outer race with rims at both ends, one of the said rims being directed substantially radially inwardly and the other is directed axially inwardly to the bearing and the height of the latter rim corresponding approximately with the wall thickness of the race, a comb-cage therein with an outer diameter identical to or smaller than the inner diameter of the rim directed axially inwardly to the bearing and with the end ring connecting the bars of the cage abutting against the radially directed rim and cylindrical rollers between the bars of the cage which abut directly against the rim directed axially inwardly to the bearing.

3,374,041
CARRIER FOR DISK RECORDS
Golden C. Davis, 420 S. Spring St., Springfield, Ohio 45505
Filed May 10, 1967, Ser. No. 637,418
11 Claims. (Cl. 312—10)

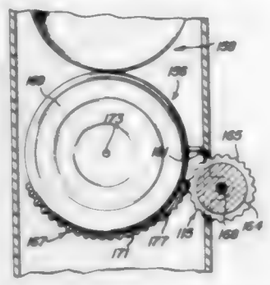


A case for protecting, preserving, storing and transporting disk records, formed with mating case members hinged together and incorporating collapsible spring means carried by one case member and extending towards the other case member for maintaining the records in flat stacked relation when the case is closed to prevent warping of the records, and for supporting the records in a conveniently accessible position when the case is open.

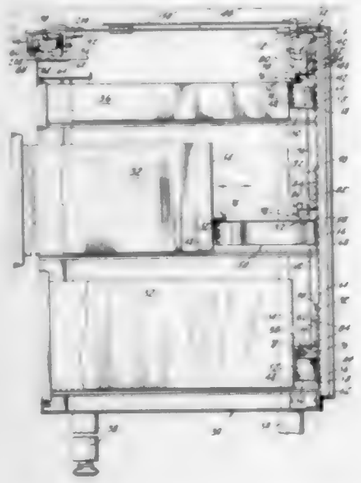
3,374,042
TOILET TISSUE DISPENSER
James A. Smith, 520 Hilda St., Morgan City, La. 70380
Filed Sept. 27, 1966, Ser. No. 582,454
7 Claims. (Cl. 312—39)

1. A toilet tissue dispenser comprising elongated upstanding guide means adapted to support a plurality of toilet tissue rolls stacked in side-by-side relation therefrom

for free downward guided movement therealong, said guide means including roll retaining means spaced above the lower end thereof and adapted to releasably support the lowermost roll in said stack against downward movement past said retaining means, said guide means including roll journaling means disposed below said retaining means adapted to removably rotatably journal a roll of tissue after it has passed down said guide means past said roll retaining means, said roll retaining means including an actuator journaled from said guide means and operative, in response to its rotation, to cause said lowermost roll to move downwardly along said guide means past said retaining means for subsequent journaling from said roll journaling means, said roll retaining means including upwardly opening cradle means journaled from said guide means for oscillation between an upright upwardly opening position adapted to cradle said lowermost roll from beneath and an inverted downwardly opening position allowing downward movement of said lowermost roll therefrom and defining an abutment for the next to the lowermost roll in said stack.

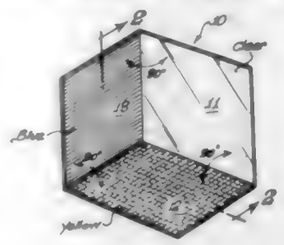


3,374,043
LEVER CONTROLLED COMPONENT LOCKING AND MOVING ARRANGEMENT FOR CABINETS
Otto Lewin, York, Pa., assignor to The Leopold Company, Burlington, Iowa, a corporation of Delaware
Filed Feb. 15, 1967, Ser. No. 616,250
24 Claims. (Cl. 312—219)



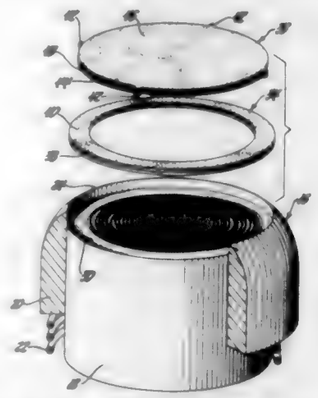
A lever, controlled component latching and moving apparatus for a cabinet utilizing a first leaf-type spring to urge the component from a position confined within the cabinet to a position exposed from the cabinet and a second leaf type spring to latch the component in its position confined within the cabinet and against the bias of the first spring. A lever is provided for each component to remove the latching spring from its latching position and permit the other spring to move the component and a lock actuated plate is provided to prevent actuation of the levers and lock all components in place. Information carrying buttons may furthermore be provided to indicate the nature of the components and connectors utilized between lock actuated plates of adjacent cabinets to permit the utilization of a single lock for locking plural cabinets.

3,374,044
FILTERED WAVE-ENERGY CORNER-REFLECTOR
Howard F. Benson, Pomona, Calif., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Nov. 3, 1964, Ser. No. 408,530
7 Claims. (Cl. 350—102)



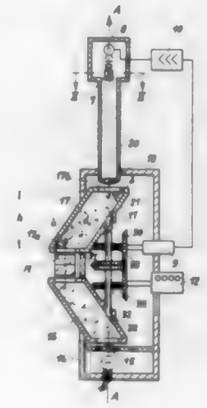
This disclosure is directed to a reflector device adapted to receive wave-energy from a source and to reflect it back so encoded that physical orientation of the point source relative to the reflector may readily be determined. More particularly, the illustrated reflector is in the form of a corner-reflector comprising three relatively fixed planar reflectors so disposed that each reflector is perpendicular to the other two. Two of the reflectors are each covered with a filter, while the third reflector is left unfiltered. The filters utilized for illustration are primary color filters, for example, one of the filters is a primary yellow, while the other is a primary blue. Orientation of the wave-energy source relative to the reflector is determined by the particular type of wave-energy being reflected back toward the source, whether, as illustrated, it be basically green, yellow-green, blue-green, etc. The wave-energy reflected will be dependent on the type of filters utilized and the angle at which an incident beam strikes the device.

3,374,045
DIELECTRIC HEAT AND PRESSURE EMBOSSED REFLECTOR ASSEMBLY
John J. Mance, Huntington Woods, and Ralph M. Stallard, Rochester, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application May 15, 1963, Ser. No. 280,681. Divided and this application Oct. 17, 1966, Ser. No. 587,032
1 Claim. (Cl. 350—105)



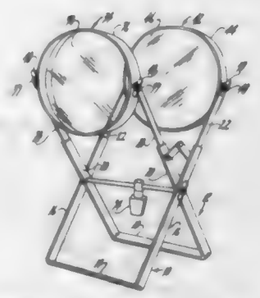
A dielectric heat and pressure embossed reflector assembly door trim panel. The reflector assembly comprises a sheet of opaque vinyl fused to the cover sheet of the trim panel. A sheet of translucent acrylic resin having a plurality of V-shaped grooves formed in one surface thereof is bonded to the acrylic sheet by a layer of adhesive having a plurality of glass beads disposed therein. A metallic rim surrounds the sheet of acrylic resin and is fused to the cover sheet.

3,374,046
READING MICROSCOPE WITH INTERPOLATION PRISM
Kurt Räntsch, Heidenheim, and Adolf Weyrauch, Wetzlar, Germany, assignors to Carl-Zeiss Stiftung, Wurttemberg, Germany, a corporation of Germany
Filed Mar. 26, 1964, Ser. No. 355,044
Claims priority, application Germany, Mar. 29, 1963, Z 10,023
3 Claims. (Cl. 350—112)



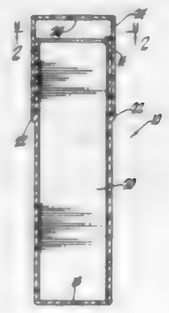
A reading microscope comprising a microscope objective, a parallel mirror arrangement consisting of two similar rhombic prisms arranged to be rotatable about the optical axis of the objective, a transparent measuring scale arranged between said two rhombic prisms and having at least one scale line adapted to be projected by one rhombic prism of said mirror arrangement into the microscope, a servo system controlled by a photoelectric cell for rotating said mirror arrangement so as to bring the image of said scale line in coincidence with a fixed mark in the object plane of the microscope, and means for passing a beam of illuminating light through the other one of said rhombic prisms and through said transparent measuring scale.

3,374,047
MAKEUP AID WHICH INCLUDES A MAGNIFYING LENS IN FRONT OF A MIRROR
Azeline D. Gatchell, Boston Hill Road, Andover, Conn. 06232
Filed Apr. 16, 1964, Ser. No. 360,456
4 Claims. (Cl. 350—199)



1. The combination in a makeup aid or the like of first and second upright support means each having a pair of spaced interconnected legs, means pivotally connecting the legs of said first and second support means so that lower end portions thereof engage and rest upon a flat horizontal surface with the upper portions spaced apart, a mirror supported between the legs of one of said first and second support means, a magnifying glass supported between the legs of the other of said support means so as to be aligned with the mirror for viewing therethrough, and means releasably holding the first and second support means in selected pivotally adjusted positions to vary the spacing between said magnifying glass and the mirror.

3,374,048
DISPENSING AND STORAGE CONTAINER
Toivo W. Koskinen, 317 N. Main St., Romeo, Mich. 48065
Filed Apr. 5, 1966, Ser. No. 540,375
1 Claim. (Cl. 401—98)



A storage and dispensing container and, more specifically, a container including a housing of flexible organic polymeric material adapted to receive and slidably support a stick of material, and including a cap removably disposed about an open end of the housing with an end wall of the cap disposed in spaced relation to the open end of the housing so that the container may be inverted to allow the stick of material to slide out of the open end of the housing and abut the end wall of the cap to position a predetermined length of the stick out of the housing whereupon the walls of the housing may be grasped and flexed inwardly to frictionally engage the stick for engaging the stick with an article upon removal of the cap.

3,374,049
TABBING MECHANISM
Craig V. Taylor, Canoga Park, Calif., assignor, by mesne assignments, to Craig V. Taylor and Carl De Wald, both of Van Nuys, Calif.
Filed Apr. 19, 1966, Ser. No. 543,681
7 Claims. (Cl. 401—171)

A tabbing machine is described in the following specification, which takes the form a long tubular instrument which is intended to apply an adhesive under the tabs

of composition asphalt, or the like, type of roof shingles, so as to provide a seal for the shingles. The instrument has an internal pressurized supply of adhesive which is discharged at the bottom thereof between a pair of especially configured blades, the blades extending up under the roof shingles when the instrument is in use.

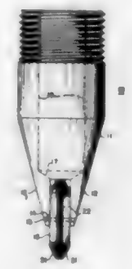
3,374,050

Herbert Rabin, 2935 Kanawha St. NW. 20015, and Harold S. Goulart, 227 Valley Ave. SE. 20032, both of Washington, D.C.

Filed Oct. 22, 1965, Ser. No. 502,730

1 Claim. (Cl. 401—208)

This invention is directed to a paint dispenser in which a small beveled wheel that is knurled on its circumference and has chamfered sides, is rotatable in a slot cut in the end of a cone that is machined on the end of a short rod. The short rod is provided with an axial passage which permits electrically conducting ink to flow from a marking pen reservoir secured to the upper end of the short rod down to the small wheel rotatable in the opposite end of the short rod. Since the wheel is chamfered on the sides, paint flows down over the side of the wheel onto the center portion thereof which contacts a recording paper upon which the wheel is rotated. Surface tension



between the paper and the paint applies paint onto the recording paper such that the center portion of the conductive line applied to the surface is thicker than the outer surface edges of the line.

CHEMICAL

3,374,051

POLYURETHANES MADE FROM DIISOCYANATES OF DIAMINO CARBOXYLIC ACID ESTERS IN LEATHER TREATMENT AND THE SO-TREATED LEATHER

John D. Garber, Allendale, Gordon M. Ide, Morristown, and Frederick M. Meigs, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 24, 1964, Ser. No. 413,611

12 Claims. (Cl. 8—94.21)

1. The method for improving leather comprising treating it with an aqueous emulsion of an isocyanate terminated adduct, said adduct produced by reacting a mixture comprising:

(A) a diisocyanate within generic formula

$$OCN-(CH_2)_n-\underset{\displaystyle COOR}{\underset{|}{CH}}-NCO$$

wherein *n* is selected from the group consisting of 3 and 4; and R is an alkyl radical of 8–20 carbon atoms; and

(B) a polyol whose average molecular weight is at least 700, whose ratio of the number of carbon atoms to the number of hydroxyl radicals therein is at least 15 and being free of other functional groups which will react to any significant degree with (A) at 25°–80° C.; the NCO/OH ratio in said mixture being in the range of about 1.3 to about 2.0.

3,374,052

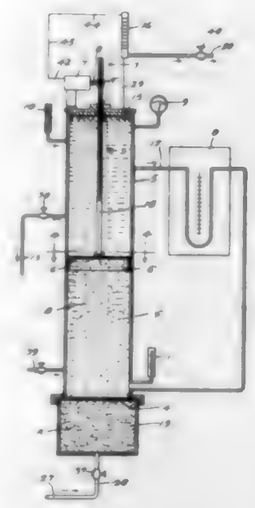
SYSTEM FOR SOLID PARTICLES-FLUID CONTACT OPERATIONS

Liang-Tseng Fan, 2059 College View Road, Manhattan, Kans. 66502, and Chin Yung Wen, % Department of Chemical Engineering, West Virginia University, Morgantown, W. Va. 26506

Continuation-in-part of application Ser. No. 292,408, July 2, 1963. This application Dec. 20, 1965, Ser. No. 524,360

15 Claims. (Cl. 23—1)

An apparatus and method for producing and utilizing a convertible fluidized bed having an upper phase in which the particles are closely packed in nonfluidized relation



and a relatively less dense fluidized phase below the upper phase is disclosed.

3,374,053

PROCESS FOR PREPARING VANADIUM OXYCHLORIDE

Albert Krettler and Ernst Dönges, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed June 22, 1965, Ser. No. 466,481

Claims priority, application Germany, June 27, 1964, F 43,283

4 Claims. (Cl. 23—21)

A process has been provided for preparing vanadium oxychloride by reacting vanadium pentoxide with a chlorinating agent in the presence of an excess of vanadium oxychloride as the reaction medium. A suitable chlorinating agent is thionyl chloride. Improved yields on absolute as well as space-time basis are obtained.

3,374,054

METHOD OF RECOVERING FLUORINE, ALUMINUM AND SODIUM COMPOUNDS FROM ELECTROLYTIC FURNACE WASTES

Sven Gregert Terjesen and Arnfinn Ve, Trondheim, Norway, assignors to Elektrokemisk A/S, a corporation of Norway

No Drawing. Continuation of application Ser. No. 548,337, May 6, 1966, which is a continuation of application Ser. No. 315,341, Oct. 10, 1963. This application June 16, 1967, Ser. No. 646,736

9 Claims. (Cl. 23—88)

9. The method of recovering fluorine, aluminum and sodium compounds from aluminum electrolytic furnace wastes which comprises leaching said furnace wastes with an aqueous solution of alkali to extract said fluorine, aluminum and sodium compounds, mixing with the leach liquor at a pH from 7.5 to 13 a liquid containing hydrogen fluoride to form a precipitate of said fluorine, aluminum and sodium compounds without determining in advance the precise quantities of said compounds that are dissolved in said leach liquor, then mixing with the resulting precipitate-containing liquor at a pH from 2.0 to 6.0 a liquid containing aluminum trifluoride to form a further precipitate of said fluorine, aluminum and sodium compounds again without determining in advance the precise quantities of said compounds that are still dissolved in said precipitate-containing liquor, whereby substantially all of the fluorine, aluminum and sodium in said leach liquor and in said first and second liquids is recovered.

3,374,055

EXTRACTION OF PHOSPHORIC ACID AND THE PURIFICATION THEREOF

Ernest Michel Villalon, Attichy, Oise, France, assignor to Compagnie des Gelatines Francaises, Paris, France, a joint-stock company of France

Filed Sept. 24, 1963, Ser. No. 311,029

Claims priority, application France, Nov. 12, 1962, 915,417; June 4, 1963, 937,585

12 Claims. (Cl. 23—107)

7. A process comprising the steps of: treating a charge containing tri-calcium phosphate with an aqeuous solution of phosphoric acid at a concentration of about 80–150 g./l. and at not greater than about 20° C. to obtain a solution of mono-calcium phosphate; passing a first portion of said resulting aqueous solution of mono-calcium phosphate over a first strongly acidic cation-exchange resin in the acid form to recover the quantity of phosphoric acid necessary for said treatment of tri-calcium phosphate; recycling said recovered phosphoric acid to said tri-calcium phosphate treatment; passing the second portion of said aqueous solution of mono-calcium phosphate over a second strongly acidic cation-exchange resin regenerated in a sodium cycle; and recovering from said second resin a solution of alkaline mono-sodium phosphate.

8. A process comprising the steps of: treating tri-calcium phosphate with phosphoric acid at a concentration of about 80–150 g./l. and at not greater than about 20° C.; treating the resulting aqueous solution of mono-calcium phosphate with sulphuric acid to precipitate the major portion of Ca^{++} as $CaSO_4$; purifying the resultant solution by removing the calcium sulphate which has precipitated; and passing the resulting aqueous solution over a strongly acidic cation-exchange resin, whereby pure phosphoric acid is recovered.

3,374,056

PROCESS FOR INCREASING THE THERMAL STABILITY OF SYNTHETIC FAUJASITE

Philip K. Maher, Baltimore, and Carl V. McDaniel, Laurel, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Dec. 3, 1964, Ser. No. 415,781

3 Claims. (Cl. 23—112)

A process for increasing the thermal stability of crystalline zeolites, which is characterized by immersing the zeolite in an aqueous electrolytic solution, continuing the immersion until ion exchange equilibrium is obtained between the zeolite and solution and then steeping the zeolite in said solution at a temperature of from 80 to 120° C. for at least an additional 2 hours.

3,374,057

PROCESS FOR ION EXCHANGING CRYSTALLINE ZEOLITES WITH NITROGENOUS BASES

Carl V. McDaniel, Laurel, and Philip K. Maher, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,685

3 Claims. (Cl. 23—112)

1. In the process of nitrogen base exchange of synthetic faujasite having an alkali metal content of less than 3 percent, expressed as the alkali metal oxide, the improvement which comprises maintaining in a solution containing the nitrogen base, an aluminum ion concentration greater than 3 weight percent, expressed as aluminum sulfate, and thereby protecting the crystalline structure of the synthetic faujasite from degradation during the base exchange process.

3,374,058

PROCESS FOR PREPARING A CRYSTALLINE ZEOLITE

Carl V. McDaniel, Laurel, and Philip K. Maher and William E. Waxter, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Dec. 8, 1964, Ser. No. 416,897

3 Claims. (Cl. 23—113)

A process of preparing a synthetic crystalline zeolite having the following mole ratio composition:

$$(0.1 \text{ to } 0.4K_2O:0.9 \text{ to } 0.6Na_2O):A_2O_3:3\text{–}6SiO_2:0\text{–}9H_2O$$

which is characterized by utilizing specific mole ratio quantities of the reactants and further characterized in one embodiment by first aging a mixture containing Na_2O, SiO_2, Al_2O_3 and H_2O before adding the K_2O component.

3,374,059

PREPARATION OF NITROSYL ACID SULFATE

Louis Linguenheld, St-Genis Laval, Rhone, and Philippe Perras, Lyon, Rhone, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,356

Claims priority, application France, Apr. 9, 1963, 930,947

2 Claims. (Cl. 23—139)

Nitrosyl acid sulphate is prepared by the reaction under anhydrous conditions at −5° to +5° C. of sulphur dioxide with nitric acid in the presence of a chlorinated aliphatic hydrocarbon diluent.

3,374,060

PRODUCTION OF MONOMERIC ISOCYANIC ACID

Günter Oertel, Cologne-Flittard, Hans Holtschmidt, Leverkusen, and Karl-Friedrich Zenner, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 13, 1965, Ser. No. 513,589
10 Claims. (Cl. 23—151)

A process for producing monomeric, isocyanic acid by reacting hydrogen halide with an alkali, alkaline earth or ammonium cyanate in an inert organic solvent and under substantially anhydrous conditions. The process also optionally utilizes catalytic amounts of water or dimethylformamide.

3,374,061

PROCESS FOR OBTAINING SULFURIC ACID

Haldor Topsøe, Vedbak, Denmark, and Gerard Thareau, Aubervilliers, France, assignors to Societe Nationale des Petroles d'Aquitaine, Paris, France

Continuation-in-part of application Ser. No. 388,808, Aug. 11, 1964. This application Jan. 31, 1967, Ser. No. 613,981
Claims priority, application France, Aug. 13, 1963, 944,563
6 Claims. (Cl. 23—167)

A process and apparatus for the manufacture of sulphuric acid by absorbing a hot, humid gaseous stream containing sulphuric oxide in an aqueous sulphuric acid solution, the volume and concentration of which are maintained constant throughout the process. The sulphuric acid solution is continuously recycled through the absorber zone and the temperature of the recycled stream adjusted to maintain the sulphuric acid concentration therein constant. A volume of the sulphuric acid solution equal to the incremental portion formed by absorption of SO_3 and water vapor from the gaseous feed stream is continuously removed from the absorber, thereby maintaining the volume of the sulphuric acid solution recycled through the absorber substantially constant. The incremental volume of sulphuric acid is continuously recovered and concentrated to the required degree by flow countercurrent to the hot gaseous feed stream prior to contacting the latter with the sulphuric acid solution in the absorber.

3,374,062

PROCESS FOR REFINING SANDS

Frank W. Bowdish, 2440 11th St., Sparks, Nev. 89431

Continuation-in-part of application Ser. No. 296,466, July 22, 1963. This application Oct. 10, 1966, Ser. No. 585,602
16 Claims. (Cl. 23—182)

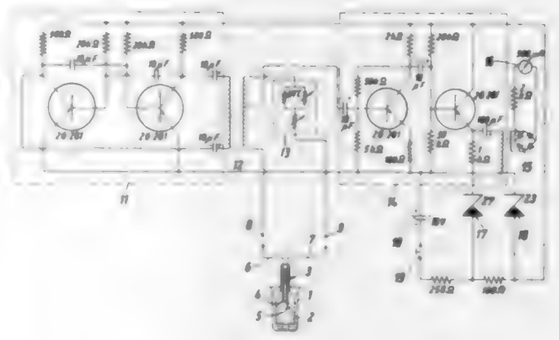
The invention is addressed to the refinement of sand having more than 0.5% by weight iron and a substantial amount of feldspar by the combination of steps which includes a first magnetic separation for splitting the effluent from the separator into one portion having a high iron content which is discarded and a product portion in which the iron content is less than 0.15% by weight. The product portion is heated to an elevated temperature and loaded into a leaching tank to form a column therein. A leaching solution formed of an aqueous solution of sulphuric acid and alkali metal chloride is preheated to a temperature within the range of 180° to 225° F. and introduced into the tank from the bottom side at a rate sufficiently slow to enable the leaching solution to rise through the column of hot sand whereby the first portion introduced will remain at the top of the column whereby the portion of the leaching solution at the top will contain the major portion of the iron dissolved from the sand so that removal of an increment of the upper portion of the column of leaching solution will effect removal of the major portion of the iron content, the leaching solution is then allowed to drain downwardly from the tank for re-use in subsequent leaching operations while the column of sand is cleansed with wash water the initial portions of which are added to form a part of the leaching solution.

3,374,063

METHOD OF DETERMINING HEMOGLOBIN IN BLOOD

Hans Günter Nöller, Fasanenweg 4, Heidelberg, Germany

Filed May 27, 1964, Ser. No. 370,523
Claims priority, application Germany, May 29, 1963, N 23,243
3 Claims. (Cl. 23—230)



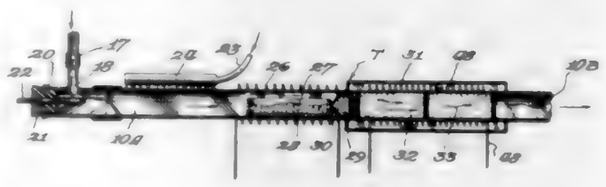
The hemoglobin content of a blood specimen is determined by mixing the same with hydrochloric acid and measuring the decrease in conductivity of the acid solution which results from formation of practically non-conductive acid hematin and is proportional to the hemoglobin originally present. Other electrolytes which form non-conductive compounds with hemoglobin may be substituted for hydrochloric acid. The generated signal modified in response to the sensed resistance may further be modified in response to the temperature of the mixed specimen.

3,374,064

OXYGEN ANALYZER

Orville L. Kolsto, Round Lake, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

Filed May 20, 1963, Ser. No. 281,542
2 Claims. (Cl. 23—253)



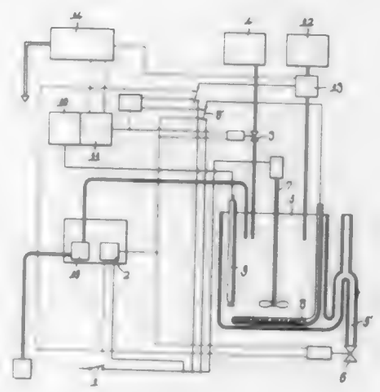
1. In an apparatus for analyzing the oxygen content of chemical compounds a closed tubing having a proximal solid inlet, a proximal gas inlet and a distal gas outlet, a combustion chamber within the tubing communicating with the inlets, means for heating the combustion chamber, a first carbon chamber communicating with the combustion chamber and distally located therefrom, a second carbon chamber located between and communicating with said first chamber and the gas outlet, said first chamber containing elemental carbon and said second chamber containing platinized carbon, means for heating the carbon chambers, means for cooling the proximal portion of the tubing between the solid inlet and the combustion chamber, and a ferromagnetic pilot within the proximal portion of said tubing freely movable therein between and in direct horizontal alignment with the solid inlet and the first carbon chamber.

3,374,065

BIOCHEMICAL OXYGEN DEMAND CONTINUAL DETECTING APPARATUS

Hideo Suzuki, Kanazawa-ku, Yokohama, Japan, assignor to Toyo Giken Company Limited, Tokyo, Japan, a corporation of Japan

Filed Dec. 16, 1964, Ser. No. 418,790
Claims priority, application Japan, Dec. 20, 1963, 38/68,313
1 Claim. (Cl. 23—253)



An apparatus for the automatic detection of the B.O.D. value, comprising a container and means for injecting a test material into the container. Means are provided for injecting a non-organic acid into the container to form a mixture. Means for mixing and heating the mixture causes a removal of the basic group, such as carbonate, bi-carbonate or carbonate anhydride, etc. During this stage, means for continuously detecting the lowering pH value causes a valve to close, thereby closing the non-organic acid injecting means when a low pH value is reached. Means for injecting an alkaline having a predetermined density into the mixture is provided and a recording meter is provided for showing the pH value increase. A measuring means determines the B.O.D. value by measuring an operating period of the alkaline injecting means over a pH value range indicating the volatile organic acid alkalinity.

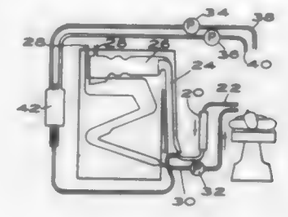
3,374,066

THERMOSTABILIZER FOR EXTRACORPOREAL OXYGENATOR

William E. Farrant, 5224 St. Antoine, Detroit, Mich. 48202

Filed June 15, 1964, Ser. No. 375,236
10 Claims. (Cl. 23—258.5)

1. In an oxygenator provided with a blood inlet tube and a blood outlet tube, a thermostabilizer having a blood conduit portion and a heat exchange portion associated with the blood conduit portion to control the temperature of the blood passing therethrough, said blood conduit portion coupled at opposite ends within one of the blood tubes of the oxygenator forming a blood passageway portion thereof, said blood conduit portion having an internal blood containing volume per unit of length equal to the internal blood containing volume per the same unit of length of the blood tube of the oxygenator within which said blood conduit portion is coupled and having an internal surface per the same unit of length and over which the blood passes therethrough substantially greater in area than the internal surface per the same unit of length of the blood tube over which the blood passes and within which said blood conduit is coupled.



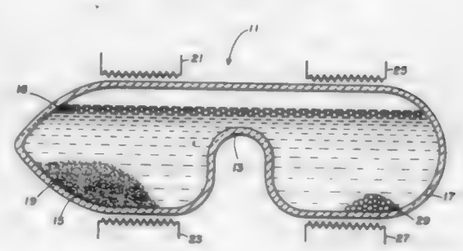
4. In an oxygenator having a blood tube adapted to be connected with a patient to establish blood communication between the oxygenator and the patient, a thermostabilizer having a blood conduit portion and a heat exchange portion, said heat exchange portion surrounding the blood conduit portion to control the temperature of the blood passing therethrough, said blood conduit portion coupled at opposite ends within said blood tube to form a blood communicating portion of said tube, said blood conduit having an internal blood containing volume per unit of length equal to the internal blood containing volume per the same unit of length of the blood tube within which the blood conduit is coupled, said blood conduit portion being removably replaceable within the surrounding heat exchange portion of the thermostabilizer whereby it may be removed therefrom and another blood conduit portion inserted therein.

3,374,067

PROCESS OF GROWING CUBIC ZINC SULFIDE CRYSTALS IN A MOLTEN SALT SOLVENT

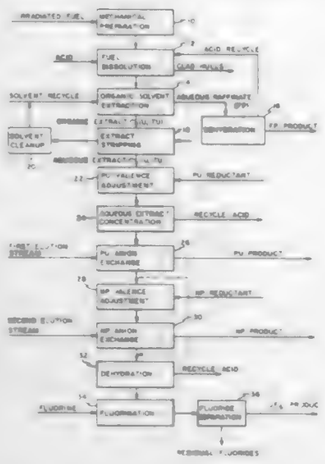
Rowland E. Johnson and Sidney G. Parker, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 8, 1965, Ser. No. 512,400
10 Claims. (Cl. 23—305)



1. A method of forming cubic crystals of zinc sulfide in a molten solvent comprising, placing a solution of zinc sulfide in a molten salt selected from the group consisting of potassium chloride, sodium chloride, sodium bromide, sodium iodide, calcium chloride, potassium sulfide, and zinc chloride, in contact with an excess quantity of zinc sulfide raw material in a first region at a temperature T_1, contacting said solution with a second region displaced from said first region while maintaining said solution in the vicinity of said second region at a temperature T_2, said temperature T_1 being greater than said temperature T_2 and T_2 being less than about 1000° C., but above the melting point of the solvent, whereby the raw material in said first region is in effect transported by the medium of said solution to crystallize out said zinc sulfide and to form cubic crystal zinc sulfide product in the said second region.

3,374,068
IRRADIATED FUEL REPROCESSING
Otto D. Erlandson, Saratoga, and Burton F. Judson, Monte Sereno, Calif., assignors to General Electric Company, a corporation of New York
Filed Nov. 17, 1966, Ser. No. 595,151
8 Claims. (Cl. 23—326)



This describes a process for the reprocessing of irradiated fuel from nuclear chain fission reactors, and in particular discloses an improved chemical process capable of separating certain transuranic irradiation products from one another and from uranium and fission products. In this process the bulk of the fission products formed by irradiation of the fuel is first separated as a mixture without partition from the uranium and transuranics (plutonium and neptunium) by extraction with an organic solvent, the fission products stream is dehydrated and calcined and these materials are recovered as an oxide mixture, the uranium and transuranics are recovered from the solvent as a mixture with substantially reduced amounts of fission products, the transuranics are separated from the uranium (and from each other if desired) by contact with and elution from anion exchange resins, the uranium stream is dehydrated and calcined to produce uranium oxide containing trace fission oxides, this substantially plutonium-free oxide mixture is fluorinated, and uranium hexafluoride is recovered as a product substantially free of fission product fluorides.

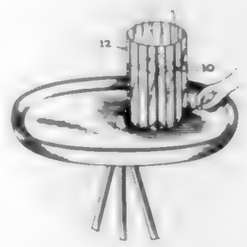
3,374,069
PREPARATION OF METAL CARBONATES BY CO_2 - PRESSURIZING ANHYDROUS METAL ACETATES
Earl L. Head, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Mar. 16, 1967, Ser. No. 624,667
1 Claim. (Cl. 23—345)

In a method of forming metal carbonates by pressurizing acetate solutions in a carbon dioxide atmosphere, the improvement wherein the said acetate is anhydrous and is selected from the group consisting of the rare earth acetates, thorium acetate, uranyl acetate and yttrium acetate.

3,374,070
METHOD OF PRODUCING A PREPARED QUICK-IGNITING CHARCOAL FUEL
Claude E. Davis, Fullerton, Calif., assignor of ten percent to Collins Mason, Los Angeles, and ten percent to William R. Graham, Palos Verdes Estates, California
No Drawing. Continuation-in-part of abandoned application Ser. No. 259,716, Feb. 19, 1963. This application Jan. 10, 1966, Ser. No. 519,468
3 Claims. (Cl. 44—6)

1. The method of producing a readily flammable wax-coated and impregnated charcoal body which consists of the sequential steps of separately heating wax to its melting temperature; submerging said charcoal body in said molten wax and maintaining it so submerged while further heating the molten wax to at least twice the temperature of its melting point, whereby to evacuate entrapped moisture and gases from said charcoal body to produce voids therein; then cooling said molten wax and charcoal body to the melting temperature of said wax whereby to cause said wax to fill said voids, and then removing said charcoal body from said molten wax.

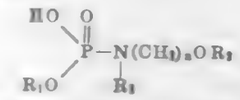
3,374,071
FIRE KINDLING DEVICES
Henry A. Corriher, Jr., and Lawrence M. Mason, both of P.O. Box 7427, Atlanta, Ga. 30309
Filed May 27, 1963, Ser. No. 283,361
15 Claims. (Cl. 44—38)



1. A kindling device for igniting solid fuel such as charcoal briquettes or lumps comprising the combination of a container member having substantially upright walls formed of combustible material and adapted to contain a quantity of said solid fuel, and an enclosing member comprising a generally imperforate tube of relatively incombustible material adapted to be positioned about the container member with portions of substantial area spaced therefrom so as to expose substantial areas of the container member walls for burning and thereby define a plurality of circumferentially spaced upright flues between said container member and enclosing member and extending the full height of the container member, said enclosing member having an opening in at least its lower portion for admission of air to said flues to support combustion of fuel in the container member and said enclosing member being adapted to provide lateral support for said solid fuel after the container member has partially burned away.

3,374,072
GASOLINE COMPOSITION
John F. Deffner, Glenshaw, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Mar. 23, 1966, Ser. No. 536,639
13 Claims. (Cl. 44—58)

A gasoline motor fuel having improved detergency characteristics is obtained by incorporating a small amount of an amidophosphate in the fuel. The amidophosphate has the general formula:

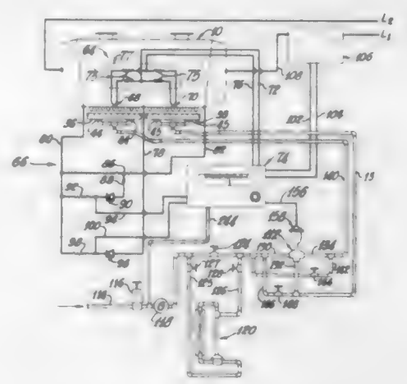


Examples of amidophosphates falling within the above formula are dimethyl N-cocooxypropylmonoamidophosphate; distearyl N-cocooxypropylmonoamidophosphate; di(butoxyethyl) N-methoxypropylmonoamidophosphate; di(butoxyethyl) N - butoxypropylmonoamidophosphate and di(butoxyethyl) N-cocooxypropylmonoamidophosphate.

3,374,073
OXIDIZED, DEGRADED INTERPOLYMER OF ETHYLENE AND PROPYLENE AND FUEL COMPOSITION CONTAINING THE SAME
William C. Gergel, Mayfield Heights, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Filed June 23, 1964, Ser. No. 377,382
8 Claims. (Cl. 44—62)

1. A hydrocarbon fuel composition comprising a major proportion of a hydrocarbon fuel oil and from about 0.001 to about 3% by weight of an oxidized, degraded interpolymer of propylene and ethylene prepared by contacting an interpolymer of propylene and ethylene having a molecular weight of from about 50,000 to about 800,000 with an oxygen containing gas at a temperature of at least 100° C. for a time sufficient to reduce the molecular weight to a value within the range extending from about 3,000 to about 5% less than the molecular weight before degradation, said interpolymer comprising from about 20 to about 66 mole percent of propylene and from about 33 to about 80 mole percent of ethylene.

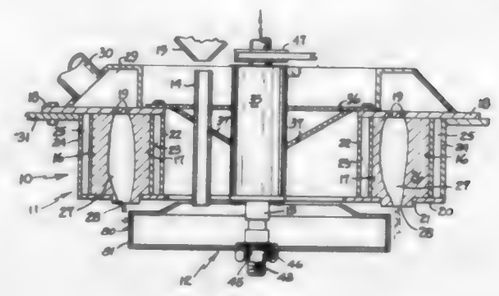
3,374,074
METHOD FOR PRODUCTION OF MINERAL FIBERS
Robert G. Russell, Granville, Ohio, John H. Willis, Anderson, S.C., and William C. Shafer, Vestal, N.Y., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 214,247, Aug. 2, 1962. This application Apr. 25, 1967, Ser. No. 633,604
5 Claims. (Cl. 65—2)



The invention embraces a method of control of an air cooling system for two groups of glass streams flowing from groups of orifices of a stream feeder involving the delivery of air from groups of porous shield members, the feeder being utilized as a resistance thermometer wherein the two halves or sections of the feeder floor are utilized as two resistors in a bridge circuit for automatically and selectively regulating the amount of air delivered from each group of porous shield members whereby more stable thermal balance is maintained between the groups of glass streams.

3,374,075
METHOD AND APPARATUS FOR PRODUCING FIBROUS MATERIAL
Robert Earl Maddox and Robert Edward Hengstler, Richmond, Ind., and Stanley George Benner, South Plainfield, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Oct. 7, 1965, Ser. No. 493,823
5 Claims. (Cl. 65—6)

A centrifugal rotor and gas blast mineral fiber formation and attenuation process comprising the adjustment of the distance between the source of the attenuating gas

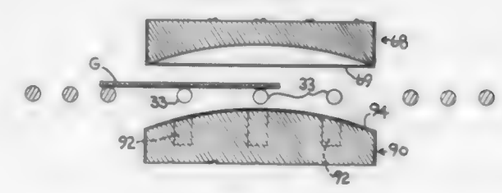


blast and the periphery of the filament forming rotor to control the diameter of the fibers produced, and means therefor comprising an adjustable rotor shaft.

3,374,076
METHOD FOR PRODUCING HERMETIC GLASS TO METAL SEALS
Terry P. Smith, Raleigh, N.C., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Sept. 28, 1964, Ser. No. 399,563
7 Claims. (Cl. 65—18)

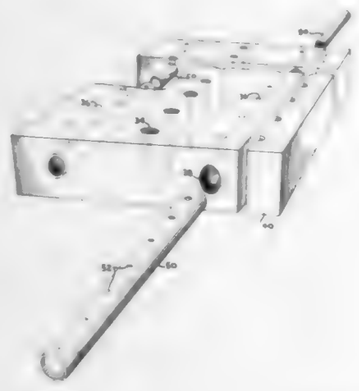
1. A method for producing a hermetic glass to metal seal which meets exacting requirements of dimension and configuration consisting essentially of the steps of: grinding a glass to an ultrafine particle size such that about 99% will pass through a 200 mesh screen and at least 90% through a 325 mesh screen, said glass having substantially the same thermal expansion characteristics as the metal to which it will be sealed, mixing the ultrafine glass with a binder to form large aggregates, pressing the aggregates and the metal to form a compact of the desired shape and heating said compact to a temperature in excess of the softening point of the glass for a time sufficient to form a hermetic seal.

3,374,077
METHOD OF PRESS BENDING GLASS SHEETS BETWEEN COLD OPPOSED SHAPING MOLDS
James H. Cypher, New Kensington, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1964, Ser. No. 412,083
3 Claims. (Cl. 65—104)



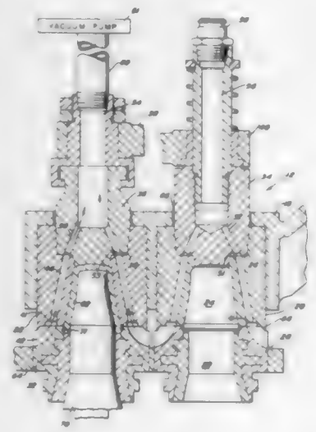
Press bending a glass sheet by sandwiching a heat-softened sheet between relatively cool, relatively massive complementary shaping members to bend the sheet to its desired shape and maintaining the shaping members in contact with the bent glass sheet for sufficient additional time to cool the glass surfaces to a temperature at which the surfaces remain stiff enough to resist deformation of the shaped sheet during its transfer to a cooling zone, but insufficient time to lower the interior temperature of the glass to below the strain point.

3,374,078
APPARATUS FOR SUPPORTING AND HEATING GLASS SHEETS ON A GAS BED
Thomas G. Wright, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 24, 1964, Ser. No. 421,028
6 Claims. (Cl. 65—182)



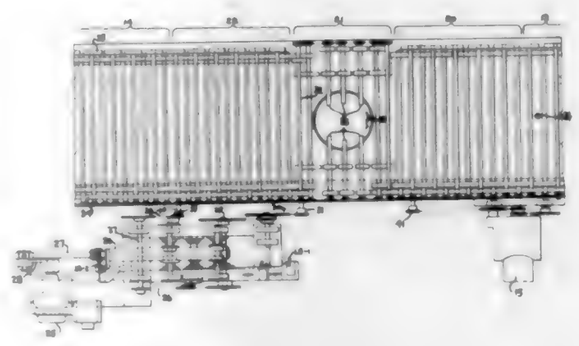
An apparatus for uniformly supporting glass sheets of different widths on a fluid support provided by flowing fluid from outlets in a bed thence across the bed and through exhaust conduits in which a removable member having orifices some of which are smaller than the exhaust outlets are detachably mounted below the bed and positioned so that a small orifice in the member cooperates with an exhaust gas outlet to restrict the flow of exhaust gas from the exhaust conduit.

3,374,079
APPARATUS FOR MOLDING GLASS
Donald H. Daly, Winchester, Ind., assignor to Maul Brothers, Inc., Millville, N.J., a corporation of New Jersey
Filed Oct. 29, 1964, Ser. No. 407,324
5 Claims. (Cl. 65—232)



Apparatus for forming hollow glass articles from sequentially supplied charges of glass to a mold. Air passages are provided in the baffle, mold and in the neck mold therebelow. A vacuum pump is utilized to draw air from the atmosphere through air passages to effect cooling of the neck mold, mold and baffle which permits the apparatus to run more rapidly.

3,374,080
GLASS SHEET PRESS BENDING APPARATUS WITH CONVEYING ROLLER RECESSES
Robert W. Wheeler, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1964, Ser. No. 412,084
3 Claims. (Cl. 65—273)



Apparatus for shaping glass sheets conveyed horizontally on a roller conveyor between upper and lower glass shaping members having complementary shaping surfaces. The lower shaping member has a substantially continuous shaping surface except for a small portion thereof notched to provide clearance for movement between a retracted position below the conveyor and a glass engaging position above the conveyor and is preferably convex in elevation. The glass engaging areas of the shaping members are preferably, but not necessarily, within 25 percent of one another.

3,374,081
PRECIPITATION OF MINERALS FROM BRINES
John J. Miller, West Chicago, Ill., assignor to Ocean Minerals, Inc., West Chicago, Ill., a corporation of Illinois
No Drawing. Continuation-in-part of application Ser. No. 158,607, Dec. 11, 1961, which in turn is a continuation-in-part of application Ser. No. 836,052, Aug. 26, 1959. This application May 28, 1965, Ser. No. 459,944
9 Claims. (Cl. 71—11)

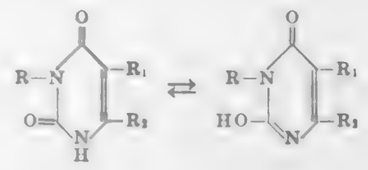
Treatment of saline water with lignin compounds, proteinaceous compounds and tannins to precipitate major and trace minerals therefrom, the lignin compounds being such materials as waste pulp digestor liquors, fibrous vegetation and decomposition products thereof, and the proteinaceous compounds being material such as compost materials.

3,374,082
HERBICIDAL METHODS AND COMPOSITIONS COMPRISING 2-AMINO AND LOWER ALKANOAMIDO-5-HALOTHIAZOLES
Alan J. Lemin, Richland Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Jan. 25, 1965, Ser. No. 427,918
13 Claims. (Cl. 71—90)

It has been discovered that certain 5-halo-2-amino (or alkanoamido) thiazoles are effective herbicides. Some of the compounds are old, but some, e.g., N-(5-chloro-2-thiazolyl)propionamide are new and especially effective herbicides. The compounds are prepared by halogenating a 2-amino-thiazole or a 2-alkanoamidothiazole according to known methods. The compounds are effective against crabgrass, wild oats, quackgrass, bindweed, lambsquarters, pigweed, and other weeds. New compositions for the control of weeds are described.

3,374,083
METHOD FOR THE CONTROL OF UNDESIRABLE VEGETATION WITH 3,5,6-SUBSTITUTED URACILS
Harvey M. Loux, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 416,158, Dec. 4, 1964. This application Feb. 4, 1966, Ser. No. 525,107
The portion of the term of the patent subsequent to Feb. 15, 1983, has been disclaimed and dedicated to the public
2 Claims. (Cl. 71—92)

1. A method for the control of undesirable vegetation, said method comprising applying to a locus to be protected a herbicidally effective amount of a compound of the formula



where
R is selected from the group consisting of
alkyl of 1 through 10 carbon atoms,
substituted alkyl of 1 through 8 carbon atoms, wherein said substitutent is selected from the group consisting of bromine, chlorine, hydroxy, alkoxy, alkoxycarbonyl, and cyano,
aryl of 5 through 10 carbon atoms,
substituted phenyl, wherein said substituent is selected from the group consisting of chlorine, bromine, fluorine, alkoxy of 1 through 5 carbon atoms, alkyl of 1 through 6 carbon atoms, nitro, trifluoromethyl, 1,2-tetramuthylene, and 1,2-trimethylenylene,
aralkyl of 5 through 13 carbon atoms,
substituted aralkyl of 5 through 13 carbon atoms, wherein said substitutent is selected from the group consisting of chlorine, nitro, alkyl, and alkoxy,
tetrahydronaphthylalkyl,
alkenyl of 3 through 8 carbon atoms,
alkynyl of 3 through 8 carbon atoms,
cycloalkyl of 3 through 12 carbon atoms,
substituted cycloalkyl of 3 through 12 carbon atoms, wherein said substitutent is selected from the group consisting of bromine, chlorine, methoxy, and alkyl,
cycloalkenyl of 4 through 12 carbon atoms, substituted cycloalkenyl of 4 through 12 carbon atoms, wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy, and alkyl,
cycloalkyl alkyl of 4 through 13 carbon atoms,
cycloalkenyl alkyl of 5 through 13 carbon atoms,
(substituted cycloalkyl)alkyl of 5 through 14 carbon atoms, wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy, and alkyl, and
(substituted cycloalkenyl)alkyl of 5 through 14 carbon atoms, wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy, and alkyl;
R_1 is selected from the group consisting of
chlorine, fluorine, bromine, iodine, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, butoxy, nitro, alkoxymethyl of 2 through 6 carbon atoms, hydroxy alkyl of 1 through 2 carbon atoms, alkylthio containing 1 through 4 carbon atoms, bromomethyl, fluoromethyl, and chloromethyl;
R_2 is selected from the group consisting of
cycloalkyl of 3 through 7 carbon atoms, alkenyl of 3 through 5 carbon atoms, alkylthio of 1 through 4 carbon atoms, alkylthiomethyl of 2 through 3 carbon atoms, and alkoxymethyl of 2 through 5 carbon atoms;
with the further proviso for said formula that when R_2 is cycloalkyl of 3 through 7 carbon atoms, R_1 can be hydrogen.

3,374,084
METHOD OF COMBATTING THE GROWTH OF UNDESIRED PLANTS
Johannes Wijma, Van Houtenlaan, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Original application Feb. 26, 1965, Ser. No. 435,736. Divided and this application June 7, 1967, Ser. No. 644,102
8 Claims. (Cl. 71—94)

Use of N-substituted methyl-2,6-dichlorothiobenzamide as herbicidal agents. Examples are N-hydroxymethyl-2,6-dichlorothiobenzamide and N-n-propoxymethyl-2,6-dichlorothiobenzamide.

3,374,085
PROCESS FOR PRODUCING AGGREGATE CONTAINING OXYGEN STEEL PROCESS DUST
Joseph K. Stone, Berkeley, Calif., assignor to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada
No Drawing. Continuation-in-part of application Ser. No. 419,604, Dec. 18, 1964. This application June 13, 1966, Ser. No. 558,542
9 Claims. (Cl. 75—3)

A usable ferrous material, especially for feeding to an oxygen steel-making furnace, is produced by agglomerating dust recovered from the gases issuing from a basic oxygen steel-making furnace by admixing therewith from 10% to 70% of particles of not less than 20 microns diameter and comprising a material compatible with iron in steel-making operations, and with a cementitious agent, mixing thoroughly to form a uniform mass and then forming the mass into shapes such as pellets or others, the cementitious agent being advantageously a cokable carbonaceous material or a calcium aluminate cement.

3,374,086
PROCESS FOR MAKING STRONTIUM-BEARING FERROSILICON
Henry G. Goehring, Jr., Niagara Falls, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed June 16, 1965, Ser. No. 464,581
2 Claims. (Cl. 75—10)

1. A process for producing strontium-containing ferrosilicon having a low calcium content which comprises smelting in a submerged arc furnace a mixture of quartzite, celestite and carbonaceous reducing agent to provide an alloy containing 15 to 55% strontium and 40 to 75% silicon, the strontium to calcium ratio in the celestite being at least 10:1; and subsequently adding the aforesaid alloy to molten ferrosilicon containing at least 98.5% Fe+Si, the amount of alloy added being sufficient to provide a strontium content of at least 0.5%.

3,374,087
PRODUCTION OF IRON
C. F. Gray, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 10, 1965, Ser. No. 507,137
10 Claims. (Cl. 75—26)

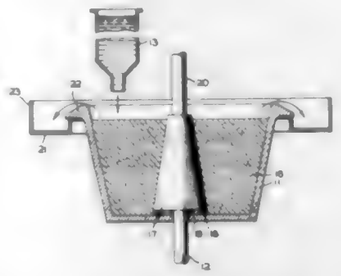
The present invention is concerned with a process for the production of metallic iron from particulate iron ores. Ore, which contains a considerable amount of gangue, is fed into the process, separated into a series of beds, fluidized by gas, and progressively reduced at elevated temperatures. The specific improvement takes advantage of the staging and the fact that certain amounts of gangue can prove beneficial in suppressing bogging, and utilizes a combination of magnetic separation and gas elutriation steps for retention of critical portions of gangue within the fluidized beds while the ore is being reduced. In accordance therewith, magnetic separation and elutriation steps can be employed in those beds wherein ore is being reduced to magnetic oxide of iron, and in the final bed where the ore is metallized.

3,374,088
METHOD FOR PRODUCING LOW SILICON FERROMANGANESE ALLOYS
Henry Epstein, Bethlehem, and Victor Alfred Neubaum, Coopersburg, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware
No Drawing. Filed Feb. 16, 1966, Ser. No. 527,759
2 Claims. (Cl. 75—60)

1. A method of reducing the silicon content of a continuously flowing substantially horizontal molten stream of ferromanganese flowing through a trough, said stream being about 2 inches to about 8 inches deep, comprising blowing about 60 cubic feet to about 75 cubic feet per minute of a commercially pure oxygen onto the surface of the flowing stream of molten ferromanganese at a velocity of 700 feet per second to about 1000 feet per second through a lance, said lance being located in a vertical plane passing through the longitudinal axis of the trough and being disposed at an angle to the vertical of about 15° to about 45° and having its nozzle about 2 inches to about 8 inches above the surface of the stream.

3,374,089
CENTRIFUGAL SEPARATION
Grover C. Robinson, Jr., and Ogle R. Singleton, Jr., Richmond, and Walther Schmidt, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,596
7 Claims. (Cl. 75—68)

Aluminum-silicon alloys containing at least 50 wt. percent of aluminum and 20 wt. percent of silicon are beneficiated by melting the alloy, cooling the melt in a quiescent state to cause formation of a skeletal crystal-



line solid phase having entrained therein residual liquid phase, and centrifugally separating the liquid phase from the solid phase.

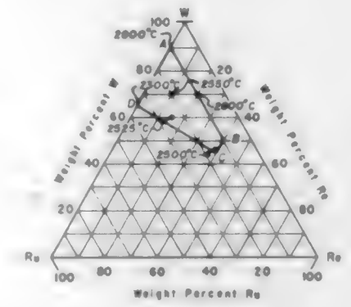
3,374,090
PROCESS FOR THE EXTRACTION OF METALS
Archibald William Fletcher and Douglas Stewart Flett, Stevenage, England, assignors, by mesne assignments, to Thorium Limited, London, England
No Drawing. Filed Mar. 22, 1965, Ser. No. 441,902
6 Claims. (Cl. 75—97)

A method of recovering metal values from an aqueous phase in which the aqueous phase is mixed with an organic phase containing a dissolved metal salt of napthenic acid so as to exchange metal ions between the two phases.

3,374,091
TREATMENT OF COPPER LEACH SOLUTIONS
Henry J. Tschirner and Lester A. Williams, Kansas City, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed May 28, 1965, Ser. No. 459,925
9 Claims. (Cl. 75—120)

1. A process for treating a solution containing dissolved nonferrous metal values and tin and lead impurities to simultaneously remove the lead and tin impurities therefrom comprising the steps of contacting said solution with a mixture of calcium hydroxide and magnesium hydroxide, and removing the solid material formed in said solution therefrom, thereby also removing a substantial amount of said impurities.

3,374,092
HIGH TEMPERATURE BRAZING ALLOYS FOR TUNGSTEN AND TANTALUM AND ALLOYS THEREOF
James C. Marshall, Pottstown, Pa., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 22, 1965, Ser. No. 502,707
1 Claim. (Cl. 75—134)



The present invention relates to a ternary brazing alloy for joining a refractory metal selected from tungsten, tantalum, and alloys thereof, containing a predominant amount of said metal, to themselves and to one another, consisting essentially of a ternary alloy containing 10–35 wt. percent ruthenium, 45–90 wt. percent tungsten, and the remainder rhenium, said brazing alloy having a melting point in the range 2300° C.–2800° C.

3,374,093
METHOD OF FORMING A SOLDER MATERIAL
Victor J. King, Mountain View, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
No Drawing. Continuation of application Ser. No. 434,095, Feb. 19, 1965. This application Apr. 21, 1966, Ser. No. 544,121
2 Claims. (Cl. 75—135)

Method of making solder alloy compositions of thallium-indium-mercury which comprises, producing a solid phase in a liquid phase and then decanting said liquid phase.

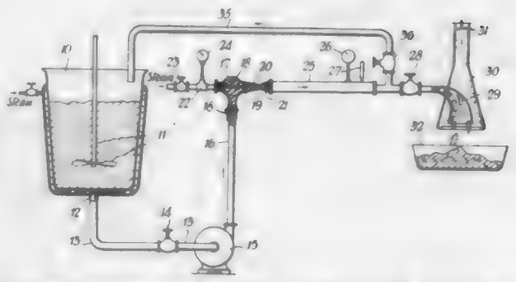
3,374,094
LITHOGRAPHIC PLATE MADE FROM AN N-VINYL-AMINE AND AN ORGANIC HALOGEN COMPOUND DISPERSED IN AN HYDROPHILIC COLLOID
Eugene Wainer, Shaker Heights, and Harry L. Fichter, Jr., Lakewood, Ohio, assignors to Horizons Incorporated, a corporation of New Jersey
No Drawing. Filed July 19, 1965, Ser. No. 473,238
12 Claims. (Cl. 96—33)

7. A method of preparing a photolithographic plate which comprises:
(1) applying a liquid composition to a support under darkroom conditions, said composition comprising at least one of each of the following constituents:
  (a) an N-vinylamine
  (b) an organic halogen compound in which at least three halogen atoms are linked to a single carbon atom, each of said halogen atoms being selected from the group consisting of Br and Cl
  (c) a triaryl compound of an element selected from the group consisting of P, Bi, Sb and As
  (d) a hydrophilic film forming binder
  (e) a volatile liquid vehicle for said constituents and
(2) drying the resulting coated article under darkroom conditions to produce a photosensitive plate.

3,374,095
GELATIN-CONTAINING PHOTOGRAPHIC LAYERS PLASTICIZED WITH POLYURETHANE
Dieter Dieterich and Otto Bayer, Leverkusen, Wolfgang Himmelmann, Cologne-Stammheim, and Hans Ulrich, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Mar. 25, 1964, Ser. No. 354,795
Claims priority, application Germany, Apr. 13, 1963, A 42,880
8 Claims. (Cl. 96—111)

Gelatin is effectively plasticized by a linear polyurethane of a polyether glycol or of a polyester of an aliphatic dicarboxylic acid, which polyurethane contains a tertiary nitrogen that is either quaternized, or in the form of a salt of an acid, and the polyurethane being infinitely miscible with gelatin. Such plasticizing does not interfere with the photographic use of the gelatin and provides a photographic emulsion of reduced curling tendency.

3,374,096
CONTINUOUS PROCESS FOR COOKING GELATINOUS OR GELATINIZABLE SUBSTANCES, FIBROUS MATTERS AND THE LIKE
Hans Knoch, 19 Ashbourne Road, Ealing, London W. 5, England
Filed July 5, 1963, Ser. No. 293,026
Claims priority, application Great Britain, Aug. 13, 1962, 30,887/62
1 Claim. (Cl. 99—1)



1. A continuous process for cooking gelatinous, gelatinizable fibrous and similar substances which contain material selected from the group consisting of starch and other extractable gel-forming matter, comprising:
(a) mixing such material with a minimum of liquid in a mixing zone to thereby obtain a flowable mixture,
(b) continuously withdrawing the mixture thus obtained from the mixing zone and passing it through a pumping zone so as to cause linear flow,
(c) delivering said flowable mixture to a first zone downstream of said pumping zone wherein the cross sectional area of the flowing stream is substantially increased,
(d) maintaining a pressure in said first zone which is lower than the pressure upstream of said first zone,
(e) allowing the particles of said material to expand and swell in said first zone under the influence of the reduced pressure conditions maintained in said first zone,
(f) contacting the expanded particles of said material leaving said first zone with a stream of hot, gaseous medium in a second zone that is downstream of said first zone so as to gelatinize or extract said swollen and expanded particles, and
(g) subsequently discharging the resultant product downstream of said second zone.

3,374,097
HUMECTANT
Karl Laden, Deerfield, Ill., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
No Drawing. Original application Dec. 7, 1962, Ser. No. 243,709, now Patent No. 3,235,457, dated Feb. 15, 1966. Divided and this application Apr. 5, 1965, Ser. No. 449,677
4 Claims. (Cl. 99—86)

A hygroscopic salt of 2-pyrrolidone-5-carboxylic acid, 1-methyl-2-pyrrolidone-5-carboxylic acid, 2-pyrrolidone-4-methyl-5-carboxylic acid, N-acetyl glycine, N-acetyl alanine, or alpha-acetamido butyric acid as a humectant in food products or in cellulosic materials.

3,374,098
FLAKE SALT MADE FREE-FLOWING BY APPLYING PROPYLENE GLYCOL TO THE SALT PARTICLE SURFACES
John F. Heiss, St. Clair, and Glen E. Binsley, Marysville, Mich., assignors to Diamond Crystal Salt Co., St. Clair, Mich., a corporation of Michigan
No Drawing. Filed Nov. 29, 1965, Ser. No. 510,365
4 Claims. (Cl. 99—143)

A free flowing non-caking, fine flake salt composition containing propylene glycol in an amount of about

0.005% to less than 0.05% by weight of the composition to produce a non-caking salt. This salt composition disperses, mixes and dissolves readily to improve the flavor and eating qualities of a wide range of food products.

3,374,099
ENZYME INHIBITOR FOR PREVENTING SOFTENING IN BRINED FOODS

Thomas A. Bell, John L. Etchells, and William W. G. Smart, Jr., Raleigh, N.C., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Oct. 10, 1963, Ser. No. 315,416
5 Claims. (Cl. 99—156)

2. A process for preparing a moisture free concentrate of the hydrolytic enzyme inhibitor contained in the leaves of the plant sericea (*Lespedeza cuneata*) comprising:

(a) harvesting the leaves of the said plant which contain the hydrolytic enzyme inhibitor material, during the period from about June 15 to Sept. 1 by cutting the leaf carrying stalks of said plant immediately above the ground while exercising care to avoid injury to the leaves associated with the so cut stalks,

(b) extracting the harvested leaves with water at about room temperature within about 6 hours after said harvest,

(c) complexing the resulting water extract of the harvested leaves with an aqueous solution of caffeine to form a substantially water insoluble caffeine-inhibitor complex in aqueous suspension,

(d) separating the substantially water insoluble caffeine-inhibitor complex from the aqueous suspension,

(e) resuspending the separated caffeine-inhibitor complex in water to form a slurry,

(f) decomposing the caffeine-inhibitor complex in the water slurry by means of liquid-liquid extraction using a water immiscible solvent,

(g) separating the aqueous phase following the liquid-liquid extraction step of (f), which contains the enzyme inhibitor material, and

(h) freeze-drying the aqueous phase from step (g) to produce a moisture-free concentrate of the enzyme inhibitor material.

3,374,100
WATER REPELLENT COMPOSITIONS

Herman B. Goldstein, Cranston, Raymond V. Kusiak, West Warwick, Raymond J. Peltier, Cranston, and Gerhard Sprenger, Ashaway, R.I., assignors to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 22, 1963, Ser. No. 318,066
13 Claims. (Cl. 106—2)

1. An aqueous water repellent emulsion for application to fibrous material comprising an emulsion of from 10 to 28 percent wax, an emulsifying agent selected from at least one member of the group consisting of (a) N,N dialkyl alkylene amines, (b) fatty acid amides of N,N dialkyl alkylene diamines, (c) fatty acid esters of N,N dialkyl alkanolamines and mixtures thereof wherein the alkyl group contains from 1 to 3 carbon atoms per alkyl group and a thermally unstable zirconium salt.

3,374,101
LIGHTWEIGHT AGGREGATE FROM FLY ASH PELLETS

Thomas E. Ban, Cleveland Heights, and Carl J. Nelson, Lakewood, Ohio, assignors to McDowell-Wellman Engineering Company, a corporation of Ohio

Filed July 6, 1965, Ser. No. 469,682
8 Claims. (Cl. 106—40)

This invention is in an improved process for making lightweight aggregate material from fly ash pellets which contemplates crushing and recycling crushed indurated fly ash particles to an intermediate zone on a traveling bed of fly ash pellets whereby said particles are refired.

3,374,102
CROSS-LINKED CARBON PRODUCTS AND THEIR PREPARATION

Eugene Wainer, Shaker Heights, and Mark S. Vukasovich, Parma, Ohio, assignors to Horizons Incorporated, a corporation of New Jersey

No Drawing. Filed Feb. 1, 1963, Ser. No. 255,702
6 Claims. (Cl. 106—43)

1. In a method of strengthening carbonized organic material selected from the group consisting of carbonizable filaments and products consisting of woven, non-woven or felted carbonizable filaments without sacrificing the flexibility of said material by embrittling the resulting product, said method including carbonization of said organic material by heating said material to a temperature and in an atmosphere such that the non-carbonaceous constituents present are distilled off from said carbonizable material while said carbonizable material is supported in a manner such that the physical shape and ordered structure of the original material are retained; and thereafter strengthening said resulting carbonized product by carbiding said material; the improvement which consists in converting only up to 25 mol percent of said carbonized product to carbide of at least one element selected from the group consisting of carbide forming elements having an atomic radius not appreciably larger than 0.77 angstrom units, by heating said carbonized material to a temperature in excess of 1050° C. in an atmosphere containing as vapor a compound selected from the group consisting of halides and carbonyls of said carbide forming element which would react with said carbonized material under the conditions prevailing during said conversion to carbide; and continuing said conversion for a time sufficient for up to about 25 mol percent of said element to intrude into the ordered carbonized product and to cross-link the same.

3,374,103
COLLAGEN FIBRIL AND NEUTRAL SALT COMPOSITION

Stanley M. Barkin, Somerville, N.J., assignor to Ethicon, Inc., a corporation of New Jersey

No Drawing. Filed July 8, 1964, Ser. No. 381,251
8 Claims. (Cl. 106—161)

An improvement in the dry knot tensile strength and dry straight tensile strength of an extruded collagen suture is obtained when from about 0.01 percent to about 0.07 percent of a water soluble salt is added to the dispersion of acid-swollen collagen fibrils prior to extrusion.

3,374,104
ASPHALT COMPOSITIONS AND PROCESS FOR PREPARING SAME

Lester A. H. Baum, Cherry Hill, N.J., and Leonard Henschel, Flushing, N.Y., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 4, 1963, Ser. No. 313,761
5 Claims. (Cl. 106—273)

1. A process for preparing heat-stable thermal asphalts which comprises:

blending a resinous pitch material deficient in high-boiling aromatic oils and having a softening point (R&B) from about 75° F. to about 140° F., a specific gravity at 77° F. from about 1.0 to about 1.3 and a Conradson Carbon number from about 25 to 45%, with

a solid material containing at least about 20% by weight of high boiling aromatic oils and having a softening point (R&B) from about 80° F. to about 120° F.; a specific gravity at 77° F. from about 1.0 to about 1.3; and a Conradson Carbon number from about 20 to about 35%; and

distilling the resulting blend to recover a heat-stable thermal asphalt having a softening point (R&B) from about 150° F. to about 270° F.

3,374,105
PARTICULATE REFLECTIVE ELEMENTS AND METHOD FOR FORMING THE SAME

Rene A. Bolomey, Peekskill, N.Y., assignor to The Mearl Corporation, Ossining, N.Y., a corporation of New Jersey

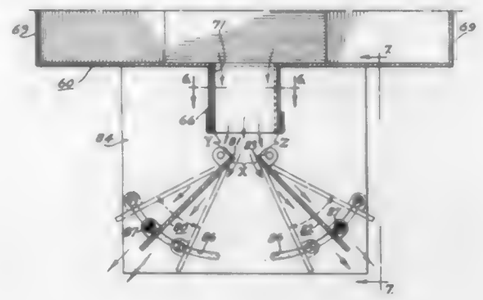
No Drawing. Filed July 2, 1964, Ser. No. 380,066
8 Claims. (Cl. 106—291)

1. A nacreous pigment consisting essentially of particulate platelets having major dimensions of from 3 to 100 microns and substantially smooth surfaces, each of said platelets being constituted of a plate-like mica particle of from 200 to 400 mesh having a surface area of from 2 to 6 square meters per gram and bearing, on each of its opposite faces, a zinc sulfide high refractive index layer having an optical thickness N*d* of from 40 to 1,000 millimicrons, wherein N is the index of refraction of the zinc sulfide layer and *d* is the thickness thereof.

3,374,106
MATERIAL DRYING METHOD AND APPARATUS

John R. Thygeson, Sr., Fox Chase Manor, Pa., assignor to Proctor & Schwartz, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed May 14, 1964, Ser. No. 367,350
10 Claims. (Cl. 117—105.3)



A method and apparatus for treating material, particularly batts or webs of non-oriented, loosely compacted fibrous material, by conveying it through an enclosed housing having a treating chamber and treating medium conditioning means including air distribution means having an outlet port confronting the batt through which treating medium is discharged. In the form of the invention illustrated, the treating medium distribution means consists of an enlongated box having an outlet port, and baffle means comprising a pair of elongated baffle plates is provided which extends coextensively with the outlet port and angularly relative to one another and to the direction of flow of the treating medium from the outlet port. This baffle arrangement divides the flow of treating medium into three zones, two outer zones and a center zone thereby creating a pressure and velocity difference in the zones whereby treating medium diverted to the outer zones creates a suction which draws treating medium up through the batt in the center zone to create a slight lofting of the batt.

3,374,107
PROCESS FOR THE TREATMENT OF TEXTILES WITH AMINOPLASTS

James F. Cotton, Columbus, Ga., assignor to West Point-Pepperell, Inc., West Point, Ga., a corporation of Georgia

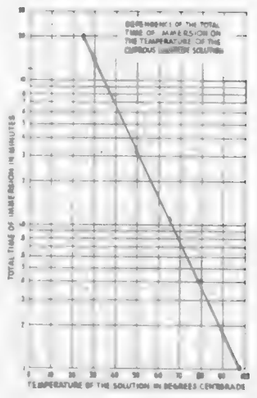
No Drawing. Continuation-in-part of application Ser. No. 301,952, Aug. 14, 1963. This application Aug. 17, 1966, Ser. No. 572,906
11 Claims. (Cl. 117—139.4)

Improved wet fixation of aminoplasts in textiles through the use of a catalyst containing an acidic component and a salt component. The acid has a dissociation constant no smaller than 10^{-6} at room temperature. The salt is an ammonium, amine or metallic salt of an organic acid showing an acidic reaction in aqueous medium. The wet fixed fabric may be dried and cured, for which a volatile acid is a preferred acid component. An epoxidized triglyceride may be fixed with the aminoplast.

3,374,108
FORMATION OF BARRIER LAYERS IN CADMIUM SULFIDE SOLAR CELLS

Basilio G. Keramidas, Cleveland, Ohio, assignor, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

Filed June 18, 1964, Ser. No. 376,168
12 Claims. (Cl. 117—200)



This invention comprises a process for applying a "barrier layer" on a cadmium sulfide body designed for use as a photovoltaic cell comprising the steps of immersing the cadmium sulfide body in an aqueous solution of cuprous ions for a sufficient period of time, and, after removal of the cadmium sulfide body from the solution, removing any residual liquid adhering to the surface. The resultant barrier layer, which is believed to be cuprous sulfide, imparts a uniformly high efficiency to the photovoltaic cell.

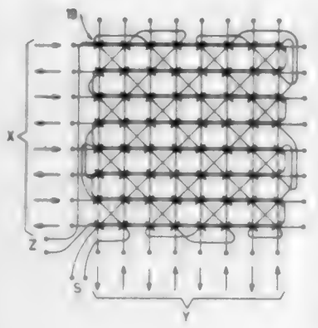
3,374,109
METHOD OF COATING A MAGNETOSTRICTIVE MATRIX PANEL WITH A DAMPING MASS AND RESULTING ARTICLE

Huibert Jacobus Hendrik van Deutekom, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed July 6, 1964, Ser. No. 380,341
Claims priority, application Netherlands, July 12, 1963, 295,257
3 Claims. (Cl. 117—201)

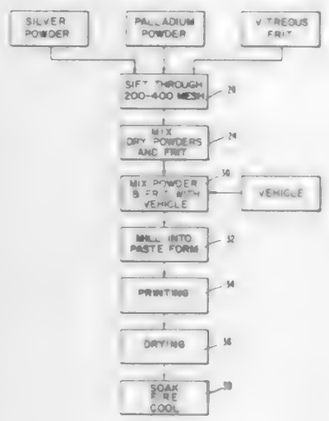
The magnetostrictive vibrations in a magnetic core

storage matrix panel are damped by coating matrix with



a mixture of a high-molecular weight polyvinylbutyral resin and a plasticizer such as tricresolphosphate.

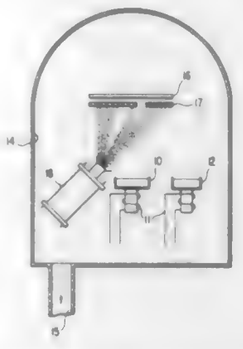
3,374,110
CONDUCTIVE ELEMENT, COMPOSITION AND METHOD
Lewis F. Miller, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 27, 1964, Ser. No. 370,467
20 Claims. (Cl. 117—212)



A conductive metallizing composition, mixed with an inert liquid vehicle, is deposited on an insulating substrate, fired at an elevated temperature, and cooled to room temperature to form a conductive element thereon comprising: a homogeneous mixture of an alloy of approximately 75 to 85 percent by weight silver, and 25–15 percent by weight palladium; and a fused vitreous frit for bonding to the dielectric comprising approximately 1–10 percent by weight of the element.

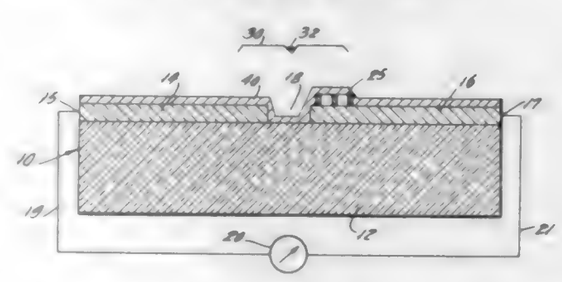
3,374,111
METHOD FOR DEPOSITING THIN DIELECTRIC POLYMER FILMS
Andrew E. Brennemann, Chappaqua, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 30, 1964, Ser. No. 379,151
7 Claims. (Cl. 117—212)

Method for the deposition of thin polymeric, insulating films of epoxy resin which adhere tightly to substrate despite extreme thermal shock as encountered in cryogenic devices comprising placing substrate in low pressure chamber, generating monomeric vapors in the chamber by heating a viscous, liquid epoxy material having low vapor pressure, even at the temperature in the chamber, directing the vapors into contact with and condensing them on the substrate, if desired, controlling the pattern of deposition by a mask, and polymerizing the epoxy on the surface of the substrate by impinging charged particles, particularly, an electron beam of 300 to 2,000 electronvolts. The viscous liquid epoxy material undergoes substantially no vaporization under ambient conditions



in the vacuum chamber and vaporization of the epoxy is commenced by heating and terminated by discontinuing the heating. Further, the substrate and epoxy source are arranged so that, when the epoxy source is heated, the epoxy vapors are directed towards and primarily deposited on the substrate.

3,374,112
METHOD AND APPARATUS FOR CONTROLLED DEPOSITION OF A THIN CONDUCTIVE LAYER
David Danon, Rehovoth, Israel, assignor to Yeda Research and Development Co. Ltd., Rehovoth, Israel
Filed Mar. 5, 1964, Ser. No. 349,552
15 Claims. (Cl. 117—226)

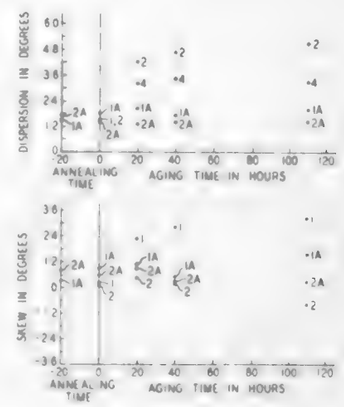


1. A method of forming a thin conductive coating of predetermined thickness, comprising the steps of: forming gap separated conductive regions upon an insulated base structure; electrically connecting said gap separated conductive regions to an impedance measuring instrument; placing a member to be coated upon a conductive region on said insulated base, adjacent said gap region; gradually applying a conductive coating by vapour deposition upon said member to be coated, and across said gap to establish an electrical path thereacross; measuring the impedance variation effected by the establishing of said conductive path across said gap; terminating the application of said conductive coating corresponding to said impedance variation being of a predetermined magnitude; removing said coated member from said base structure.

3,374,113
METHOD FOR CONTROLLED AGING OF THIN MAGNETIC FILMS BY MEANS OF AN EASY AXIS ANNEALING TREATMENT
James T. H. Chang, New Providence, Umberto F. Gianola, Florham Park, and Matthew W. Sagal, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 13, 1965, Ser. No. 425,279
2 Claims. (Cl. 117—227)

The disclosure describes a technique for controlled aging of magnetic films, in particular, films of iron-

nickel alloys. The technique involves an easy axis treatment at moderately raised temperatures. The easy axis



anisotropy is thereby preserved during the accelerated aging period and the resulting film is stable.

3,374,114
PROCESS OF INSULATING AN ELECTRICAL CONDUCTOR WITH A POLYESTER
Maria V. Wiener, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 13, 1964, Ser. No. 351,863
1 Claim. (Cl. 117—232)

A polyester is formed by condensing 2,6- or 2,7- or 1,5 - naphthalene dicarboxylic acid and either terephthalic or isophthalic acid with a mixture of a glycol and glycerine or other polyol containing 3 to 6 carbon atoms. The condensation reaction is stopped before gelling occurs, and the product is applied to a substrate, in solution in an organic solvent, if desired. The coated product is then heated to cross link the polyester. The coating is suitable for electrical insulation.

3,374,115
STARCH DISPERSIONS
Ernest Frank, Park Forest, and Naoyuki H. Yui, Chicago, Ill., and Anthony A. Silvasi, Hammond, Ind., assignors to American Maize-Products Co., a corporation of Maine
No Drawing. Filed June 24, 1964, Ser. No. 377,524
18 Claims. (Cl. 127—29)

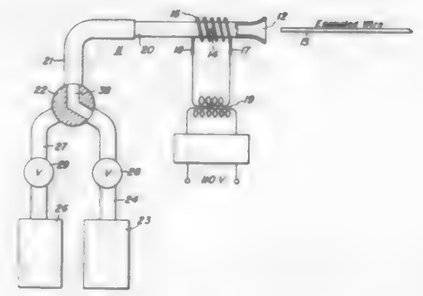
1. A method of making cooked starch dispersions of uniform reduced viscosity which comprises forming an aqueous slurry of starch granules, buffering the pH of said slurry to a value within the range from about 3.0 to about 5.0, heating said slurry to a temperature from about 212° F. to 375° F. and maintaining said slurry at the elevated temperature for from about 2 to about 90 minutes until a cooked starch dispersion of desired viscosity has formed.

13. A buffered starch composition adapted to be slurried and cooked in water to form improved starch dispersions of uniform reduced viscosity which comprises particulate starch in admixture with buffer materials in the absence of quantities of water which form a liquid slurry of the admixture, said buffer materials being other than strong mineral acids and being present in an amount effective to provide a slurry pH from about 3.0 to about 5.0 and control of said slurry pH within plus or minus 0.2 pH unit when said admixture is slurried in water, said admixture yielding said improved starch dispersions upon cooking of a slurry of said admixture at a temperature from about 212° F. to about 375° F. for from about 2 to about 90 minutes.

3,374,116
PROCESS FOR REMOVING THIN FILMS FROM VITREOUS SURFACES
Cecil R. Fetters, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 3, 1963, Ser. No. 313,438
6 Claims. (Cl. 134—2)

A method of removing thin, transparent, metal oxide films, from vitreous surfaces by exposing the filmed surfaces to the action of a solution of an organic reducing agent such as phenylhydrazine hydrochloride or oxalic acid at elevated temperatures, for a length of time sufficient to at least partially remove the film and then washing the solution from the surface.

3,374,117
PROCESS AND APPARATUS FOR THE REMOVAL OF WIRE ENAMEL INSULATION
Robert H. Savage, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 31, 1964, Ser. No. 341,681
11 Claims. (Cl. 134—2)



Apparatuses and processes are described for the rapid and effective removal of organic insulating film from the surface of an electrically conducting metallic wire by the controlled application of flameless heat thereto in the presence of oxygen in a longitudinally-extending walled cavity.

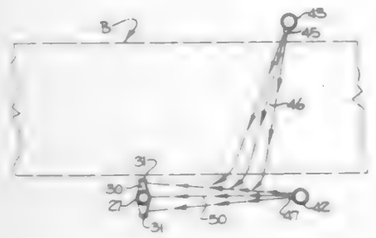
A first apparatus provides for the controlled separate but sequential admission of an oxidizing gas and a reducing gas to the same heated cavity. A second apparatus provides two heated cavities for sequential treatment of the wire, one of the heated cavities having oxidizing gas supplied thereto and the other heated cavity having reducing gas supplied thereto. Means are disclosed for automation of the sequence and timing of gas admission.

The differences in the processes depend upon the difference between the decomposition temperature of the organic enamel and the melting temperature of the metallic substrate. If this temperature difference is less than about 200° C., the wire enamel is subjected in sequence to the steps of coking, oxidizing and reducing, all conducted at elevated temperatures. If the temperature difference is greater than about 200° C., the coking step may be eliminated.

3,374,118
FLOOR CLEANING METHOD FOR TEXTILE MILLS
George Seress and Woodrow W. Hewitt, Charlotte, N.C., assignors to Parks-Cramer Company, Fitchburg, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 273,884, Apr. 18, 1963. This application Sept. 6, 1963, Ser. No. 307,769
3 Claims. (Cl. 134—21)

A textile mill floor-cleaning method in which a barrier air stream adjacent the floor at one side of a machine row deflects fiber waste, being directed thereto by a cross

air stream emanating from adjacent the floor at the other side of the machine row, toward a localized suction zone which is applied adjacent the floor level at the same side



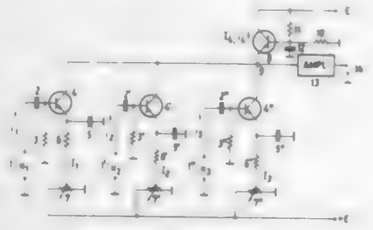
of the machine row as the barrier air stream, and wherein the barrier and cross air streams and the suction zone travel in unison in the same direction, the suction zone serving to suck in and collect the thus deflected fiber waste.

3,374,119

CIRCUIT ARRANGEMENT FOR MIXING SIGNALS

Ernst Legler, Darmstadt, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany

Filed May 19, 1964, Ser. No. 368,554
Claims priority, application Germany, June 5, 1963, F 39,915
14 Claims. (Cl. 178—7.1)



A signal mixing arrangement for delivering an output signal with a constant level. The signals to be mixed are applied to input amplifiers having output signal currents substantially a linear function of direct currents flowing through these amplifiers. These direct currents are made adjustable. The outputs of the input amplifiers are connected to a common load which is current dependent. The impedance of the load is inversely proportional to the sum of the direct currents flowing through the input amplifiers. All of the input amplifiers may have a common load impedance in the form of the emitter-collector path of a transistor. At the amplifier end of this load an output signal with constant level is derived. The arrangement is also adapted for mixing signals of equal levels. The level of the output signal is independent of the number n of the input signals. Each input signal contributes to the level of the output signal by the factor of $1/n$ of its own level.

3,374,120

APPARATUS AND METHOD REGARDING GENERATION OF ELECTRICAL ENERGY FROM THERMAL ENERGY

Herbert E. Lawson, Glendora, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Continuation-in-part of application Ser. No. 833,781, Aug. 14, 1959. This application Oct. 23, 1962, Ser. No. 232,428
20 Claims. (Cl. 136—86)

1. A self-contained thermally activated galvanic battery comprising in combination:

a closed container means adapted to have, when the battery is in operation, a relatively hot region and a relatively cool region;

a cathode positioned in the relatively cool region;

an anode positioned within the container means away from the cathode;

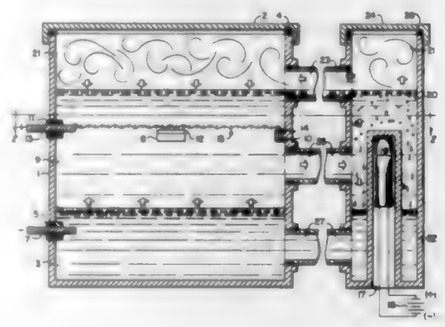
a supply of material within the closed container selected from the group consisting of the salts

of an element selected from the group consisting of the elements of Groups II and III of Period II, the elements of Groups III and IV of Period III, the elements of Groups III through VII of Series 1 of Period IV, the elements of Groups I through V of Series 2 of Period IV, the elements of Groups III through VI of Series 1 of Period V, the elements of Groups I through V of Series 2 of Period V, the elements of Groups IV through VI of Series 1 of Period VI, the elements of Groups I through V of Series 2 of Period VI, of the periodic table, and the transition elements selected from Group VIII of the periodic table;

and a halogen having an atomic weight in excess of 19 and selected from the group consisting of chlorine, bromine and iodine, and mixtures of said salts, in the relatively hot region of the battery, which material is thermally decomposable at the temperatures obtaining therein during the operation of said battery, wherein said material is thermally decomposed into its constituents in elemental form;

means within the closed container for permitting circulation of the elemental constituents of the material to the vicinity of the anode and cathode, respectively, whereby they become ionized and recombine to form the material thermally decomposable in the relatively hot region of the battery;

and means within the closed container for permitting circulation of the thermally decomposable material to said hot region from the region in which it is formed.



12. A thermally activated galvanic battery comprising in combination:

a layer of porous, electrically nonconductive, thermally stable material having dispersed therein a salt of an element from Series 2, Groups I through V, of Period VI, of the periodic table, and iodine;

two layers of an electrically conductive material separated from each other by the nonconductive material having the salt dispersed therein and each in contact therewith;

and means for heating one of the layers of conductive material.

17. A method of generating electrical energy from thermal energy comprising:

reacting bismuth ions with iodine ions to form BiI_3;

disposing the BiI_3 in a medium within which it can dissociate and its elemental constituents can migrate therethrough, said medium being in contact with an anode and a cathode;

heating the BiI_3 to decompose it into metallic bismuth and gaseous iodine thereby

causing the bismuth to contact the anode and the iodine to contact the cathode, whereby each is ionized, and

causing an excess of electrons to accumulate at the anode, a paucity of electrons at the cathode, and a difference of potential to exist between the anode and the cathode.

3,374,121

PROCESS OF SUPPLYING HYDROGEN TO A FUEL CELL WITH BOROHYDRIDE ADDUCT

John N. Hogsett, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

Filed Nov. 27, 1964, Ser. No. 415,221
23 Claims. (Cl. 136—86)

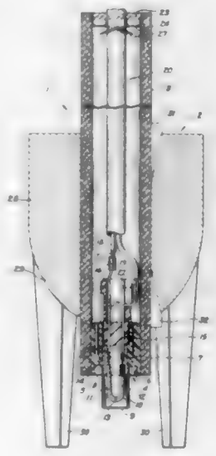
1. A process for supplying hydrogen to a fuel cell which comprises contacting (1) an adduct of (a) a metal borohydride of the group consisting of aluminum borohydride, beryllium borohydride, and zirconium borohydride and (b) an organic nitrogen compound which is composed solely of carbon, hydrogen, and nitrogen atoms, said organic nitrogen compound being a Lewis base selected from the class consisting of amines and azines, and (2) a hydrolyzing agent, and supplying the resulting hydrogen to said fuel cell.

3,374,122

EXPENDABLE IMMERSION THERMOCOUPLE INCLUDING WEIGHT

Douglas I. Cole, East Cleveland, Ohio, assignor to General Electric Company, a corporation of New York

Filed Dec. 24, 1964, Ser. No. 421,016
5 Claims. (Cl. 136—234)



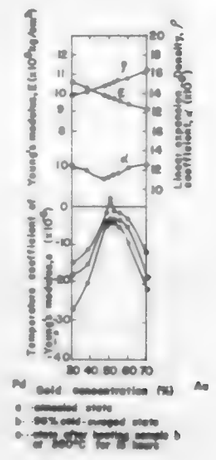
5. An immersion expendable thermocouple unit for sensing the temperature of molten metal in a bath comprising an elongated tube of heat-insulation material closed at both ends, a thermocouple element protruding from one end of the tube, an electric extension cord extending from the opposite end of the tube and electrically connected within the tube to the thermocouple element, a weight affixed to and extending around the tube adjacent the end of the tube carrying the thermocouple element, said weight having prongs extending lengthwise of the tube and beyond the thermocouple element, the part of the tube extending between the weight and the cord accommodating end of the tube being of a sufficient length to guide the unit weight end foremost in its plunge in the bath.

3,374,123

METHOD OF MANUFACTURING NON-MAGNETIC, ELASTIC ARTICLES HAVING A SMALL CHANGE OF VIBRATION AND DEFLECTION FOR TEMPERATURE CHANGE

Hakaru Masumoto, Sendai, and Takeo Kobayashi, Natori, Japan, assignors to The Foundation, The Research Institute of Electric and Magnetic Alloys, Sendai, Japan

Filed Mar. 3, 1965, Ser. No. 436,902
Claims priority, application Japan, Mar. 4, 1964, 39/11,779
3 Claims. (Cl. 148—11.5)



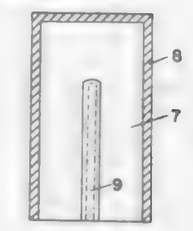
A method of manufacturing non-magnetic and elastic articles having little change in Young's modulus with change in temperature, which comprises annealing an alloy consisting essentially of about 50% gold and about 50% palladium by heating said alloy at a temperature above 600° C. for at least one minute, and then heat treating said alloy by a suitable combination of quenching, cold working, and tempering.

3,374,124

METHOD OF MAKING LITHIUM-DRIFT DIODES BY DIFFUSION

Alister J. Tavendale, Deep River, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation

Filed Jan. 7, 1965, Ser. No. 424,099
4 Claims. (Cl. 148—186)

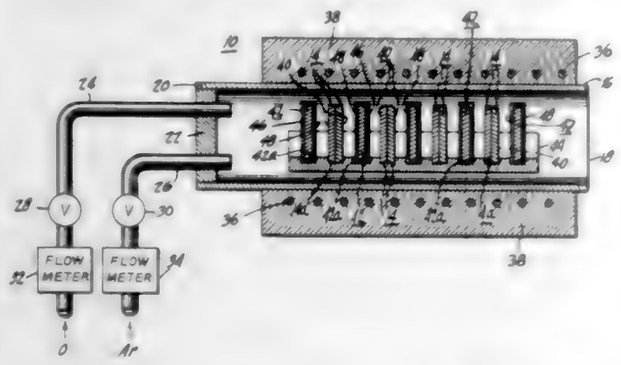


A rapid method of producing large volume lithium-drift diodes by diffusing lithium onto all but the end surfaces of a loaf or cylindrical shaped crystal of p-type material, drifting the lithium to form an intrinsic layer by the application of heat and a reverse bias voltage such that drifting takes place inwardly leaving only a small core of p-type material in the central region of the crystal.

3,374,125
METHOD OF FORMING A PN JUNCTION BY VAPORIZATION

Norman Goldsmith, Piscataway, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 10, 1965, Ser. No. 454,474
14 Claims. (Cl. 148—189)



A diffusion method for producing a region of altered electrical characteristics in a semiconductive body comprises the steps of:

(a) Oxidizing a body of a nitride of a metal chosen from the group consisting of boron, gallium, indium, and aluminum to form a metal oxide,

(b) Disposing the bodies with adjacent surfaces substantially parallel to, but spaced no more than 250 mils from, each other,

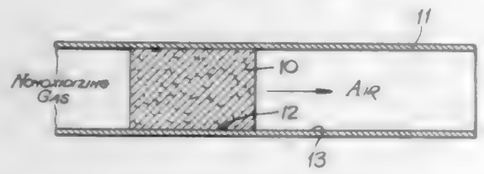
(c) Heating the bodies to vaporize the metal oxide, and

(d) Maintaining the bodies at the temperature of vaporization for at least 20 minutes to allow the metal of the metal oxide to diffuse through the semiconductive body to produce the region of altered electrical characteristics.

3,374,126
BRIGHT ANNEALING OF TUBULAR METAL ARTICLES

Allen C. Lingenfelter, Ona, W. Va., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 8, 1965, Ser. No. 494,211
4 Claims. (Cl. 148—20.3)



In providing a bright annealed surface on the interior of a metal tube a plug is blown through the tube with a non-oxidizing gas, thereafter a non-oxidizing atmosphere is maintained in the tube, the ends of the tube are annealed, forced closed, surface ground and sealed by resistance welding and the tube is then thermally annealed with the non-oxidizing atmosphere sealed therein.

3,374,127
COMPRESSED METAL CONTAINING TERNARY EXPLOSIVE COMPOSITION

Pierre Jenner and Léon Sayous, Pau, France, assignors to Societe Nationale des Petroles d'Aquitaine, Courbevoie, France, a corporation of France

Filed Aug. 5, 1966, Ser. No. 570,624
Claims priority, application France, Aug. 13, 1965, 28,241
1 Claim. (Cl. 149—39)

This invention consists of an explosive composition consisting of a secondary explosive material, of a substance for lowering the electrical resistivity of the charge, and of an oxidizable material having intense heat release during combustion.

3,374,128
STABILIZED BLASTING COMPOSITIONS CONTAINING AT LEAST ONE IRON SULFIDE AND AN ANTACID

Bernard J. Stronza, Hagerstown, Md., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

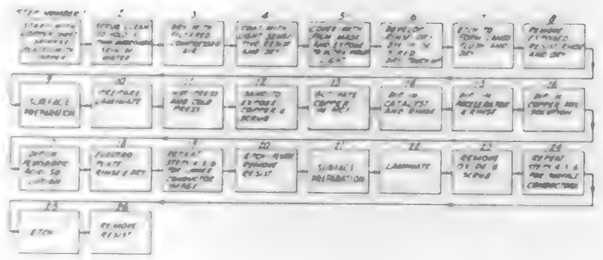
No Drawing. Filed Nov. 22, 1966, Ser. No. 596,059
7 Claims. (Cl. 149—56)

This invention relates to stabilized blasting compositions of high bulk density and high explosive strength containing iron sulfide and antacid stabilizer therefor.

3,374,129
METHOD OF PRODUCING PRINTED CIRCUITS

Gerald Boucher, Hudson, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed May 2, 1963, Ser. No. 277,646
7 Claims. (Cl. 156—3)



1. The process of producing a printed circuit which comprises the steps of starting with a sheet of metallic conductor of sufficient thickness to be capable of self-support, photographically producing on said sheet an image of lands desired, partly etching away undesired conductor leaving projecting lands, applying to the etched surface a layer of insulating material, removing a portion of said insulating material down to the level of said lands so as to expose said lands, plating on a layer of conductor over and in contact with said lands and insulating material, photographically producing on said layer an image of a first circuit, etching away undesired conductor from said last mentioned layer forming a circuit pattern interconnected with said lands, and etching the previously unetched side of said sheet to form another circuit interconnected at selected points with said first circuit.

3,374,130
ETCHING SOLUTION AND PROCESS FOR PRODUCING A NON-REFLECTIVE SURFACE ON TRANSPARENT GLASS

Albert E. Junge, New Kensington, and Joseph Chabal, Curtisville, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

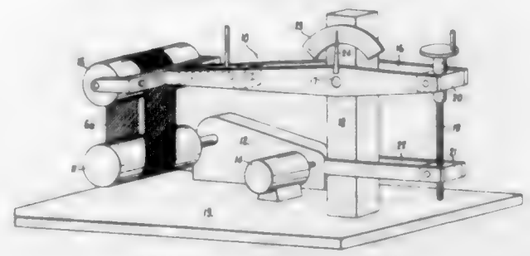
Continuation-in-part of application Ser. No. 456,963, May 19, 1965, which is a continuation-in-part of application Ser. No. 247,390, Dec. 26, 1962. This application Mar. 17, 1967, Ser. No. 623,902
19 Claims. (Cl. 156—24)

The present invention relates to an etching process for producing low specular reflecting or low image reflecting surfaces on glass. The process produces a non-glare glass by a single dip of an alkali containing glass into an etching solution of hydrofluoric acid, ammonium bifluoride, water and a viscosity control agent which controls the viscosity of the solution between 0.8 centipoise and about 75 centipoises at room temperature. The novel aqueous solution comprises hydrogen fluoride and ammonium bifluoride in which the ratio of parts by weight hydrogen fluoride to parts by weight water is between about 1.1:1 and 1.6:1. while the ratio of parts by weight ammonium bifluoride to parts by weight of water is between about 0.05:1 and 1.1:1.

3,374,131
METHOD OF BUILDING A PNEUMATIC TIRE

Vernon Eric Gough, Sutton Coldfield, England, assignor to Dunlop Rubber Company Limited, county of London, England, a British company

Filed Oct. 15, 1963, Ser. No. 316,346
7 Claims. (Cl. 156—133)

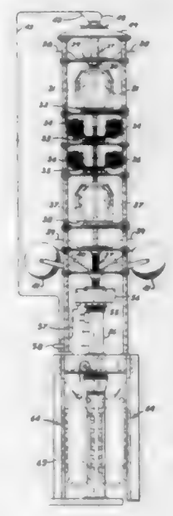


1. A method of building a pneumatic tire incorporating a cylinder having at least two layers of rubberised parallel cords, the cords in each ply layer being disposed in the crown region in the finished tire at a finished bias angle of between 5° and 30° to a circumferential line of the tire crossing the cords at a point under consideration, comprising initially forming said cylinder from layers in which the cords are disposed at bias angles substantially equal to the complementary angle to said finished bias angle, the cords of one layer crossing the cords of the other layer, and stretching said cylinder in the circumferential direction of said cylinder to increase the circumference of said cylinder until the bias angles of the cords of the two layers are reduced to said finished bias angie.

3,374,132
METHOD AND APPARATUS FOR MAKING FIBER REINFORCED ARTICLES OF CROSS SECTIONAL SHAPE OTHER THAN CYLINDRICAL

Le Roy R. Boggs, Bristol, Tenn., assignor, by mesne assignments, to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware

Filed Jan. 22, 1965, Ser. No. 427,312
8 Claims. (Cl. 156—171)



Equipment and method to produce continuous lengths of tubular resin articles, having a cross sectional shape other than circular, includes a core on which longitudinal as well as transverse reinforcing filaments are arranged. The core has a first cylindrical portion and a second transition portion that merges with a third portion having the shape of the desired cross section. The peripheral lengths of the cross sections of the first cylindrical, the second transitional and the third final shape portion are substantially equal. A filament winding mechanism and an article pulling mechanism are associated with the apparatus.

3,374,133
METHOD OF MAKING AIR-PERVIOUS THERMOPLASTIC-OVERLAID FABRIC

Bernard Edwards, Cranford, and Theodore Kimak, Clifton, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 10, 1963, Ser. No. 315,293
12 Claims. (Cl. 156—220)

1. In the manufacture of an air-pervious thermoplastic-overlaid fabric, the method which comprises the steps of (1) casting thermoplastic material in the interstitially interspersed shallow hollow of a large-area mold, (2) pressing an air-pervious fabric against the mold with the cast material in the mold in an adhesive condition to effect the mutual adhesion of the fabric and the cast material, said hollow of said mold comprising a plurality of depressions separated by intervening interstices, said casting step leaving the exposed surface of the cast material in each depression slightly concave and said pressing step effecting the mutual adhesion of the fabric and said segments at the marginal portions of those segments, whereby the fabric becomes overlain by a plurality of interstitially separated segments, (3) effecting a separation between the mold on the one hand and the fabric overlain by interstitially interspersed cast material on the other, and (4) embossing the overlay material and effecting the mutual adhesion of the non-marginal portions of the segments of that material, the presence of the unadhered non-marginal portions producing an enhanced embossing effect.

4. The subject matter claimed in claim 1 wherein prior to said pressing step there has been applied to said fabric an air-pervious anchor coating of a substance to which said cast material is more readily adherent than to said fabric itself.

3,374,134
METHOD OF PRODUCING A PRESSURE SENSITIVE ADHESIVE TAPE

Harold Louis Waldman, Hazlet, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

No Drawing. Filed Aug. 25, 1964, Ser. No. 392,040
4 Claims. (Cl. 156—239)

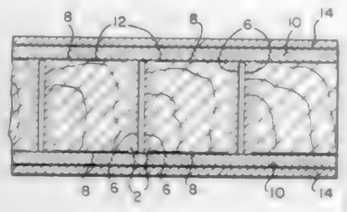
Pressure-sensitive adhesive sheets and tapes are prepared by forming a pressure-sensitive adhesive film, priming the surface of the adhesive film with a water base primer, the water base of the primer acting to prevent adhesion of the pressure-sensitive adhesive to priming equipment during the priming operation, and thereafter drying the primed adhesive surface and pressing a backing into intimate contact with the primed adhesive surface to form a strongly bonded laminate of adhesive and backing.

3,374,135
METHOD OF MANUFACTURING A SOLID-TYPE DOOR

Louis Pick, 416 Iona St., Metairie, La. 70005

Substitute for abandoned application Ser. No. 215,689, Aug. 8, 1962. This application Apr. 27, 1964, Ser. No. 364,357

1 Claim. (Cl. 156—265)



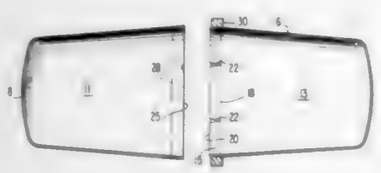
1. The method of manufacturing a solid-type door, which consists in first forming a core for the door by impregnating at least one wooden board to a relatively shallow depth with a material having a desired beneficial effect on the wood, then cutting the board into strips each having a width approximately equal to the designed thickness of the core, each of such strips having opposite impregnated surfaces and opposite unimpregnated surfaces, placing strips in side-by-side relation with the opposite impregnated surfaces of adjacent strips in abutting relation and with the opposite un-impregnated surfaces thereof in co-planar relation on the opposite side faces of the assembly of strips, and finally placing an exterior sheet covering member on at least one of the co-planar un-impregnated surfaces of the assembly of strips and uniting such sheet to such surfaces.

3,374,136
METHOD OF FORMING A STORAGE CONTAINER

Donald E. Safford, Park Forest, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed July 29, 1964, Ser. No. 385,892

6 Claims. (Cl. 156—293)



A method of forming a storage tank by joining two essentially mirror image hollow conical sections, in which notches are removed from the lip of one of the sections and a compression ring is then applied around that notch lip to reduce its circumference. The notched lip is then inserted within the lip of the other section, displacing the compression ring.

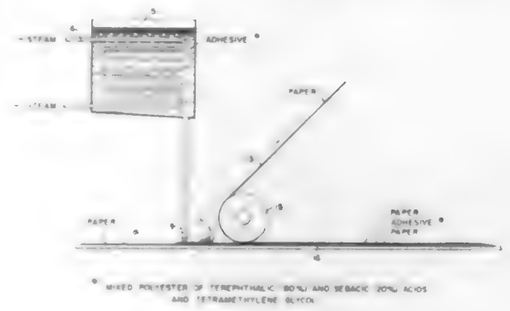
3,374,137
ADHESION OF PAPER MATERIALS

Maria V. Wiener, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Nov. 10, 1964, Ser. No. 410,198

1 Claim. (Cl. 156—332)

Sheets of flexible paper are united by a hot melt of a copolyester of terephthalic acid (80 mol. percent) and sebacic acid (20 mol. percent) and tetramethylene glycol by spreading the adhesive on one sheet of the paper and then quickly pressing the other sheet on to



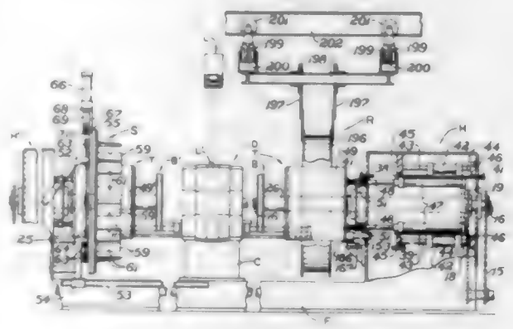
this. The adhesive sets quickly to produce a flexible laminate.

3,374,138
TIRE BUILDING MACHINE

Donald K. Porter, Cuyahoga Falls, Ohio, James W. Eckenwiler, Phoenix, Ariz., and Fred K. Barns, Ralph F. Cooper, and Walter E. Head, Akron, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed May 19, 1964, Ser. No. 368,511

27 Claims. (Cl. 156—400)



A tire building apparatus comprising a tire building drum that is axially and radially expandible, with a pair of spaced bead supports having an inflatable ring and expansible flange which cooperate with a tire carcass on the drum to define a closed chamber, turn-up and turn-down means with a bead setter cooperative therewith, stitching mechanism and a centering means which provides a line image on the building drum to facilitate the building of a complete tire carcass on such drum.

3,374,139
TAPE DISPENSER WITH HAND BRAKE

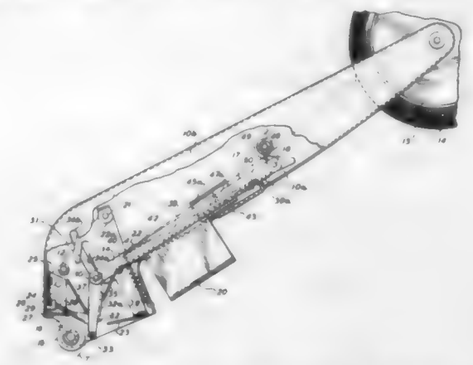
George H. Fritzinger, 18 Oakridge Road, West Orange, N.J. 07052

Filed May 10, 1965, Ser. No. 454,514

8 Claims. (Cl. 156—523)

1. A tape dispenser comprising an elongate housing having an intermediate portion adapted to serve as a handle, a rear end portion adapted for carrying a supply roll of tape and a forward head portion provided with an applicator roller for applying tape drawn from the supply roll via the intermediate handle portion; a mechanism in said head portion for cutting the tape at said roller; a projecting trigger below the handle portion adapted to be depressed by closing the grip of the second and third digits of the hand holding the dispenser for operating said cutting mechanism; and a tape brake in said handle portion including an anvil at the non-adhesive side of the tape, a cooperable brake element at the adhesive side of the tape and a finger piece at the bottom

of the handle portion directly behind said trigger in position to be depressed by the fourth and fifth digits of the hand holding the dispenser to close said brake element



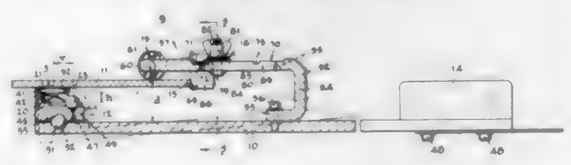
and anvil under a controlled pressure whereby to place a selective drag on the tape as the tape is dispensed while still leaving the second and third digits of the hand free to depress said trigger at will.

3,374,140
LOCATOR DEVICE

James M. Dunsmore and Harry C. Reimschussel, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Jan. 7, 1965, Ser. No. 424,080

15 Claims. (Cl. 156—580)



1. In apparatus for attaching a member to a glass sheet,

(a) a lever bar,

(b) pivot means carried intermediate the ends of said bar for resting the same on said sheet for swinging movement of one end of said bar toward and away from a face of said sheet, and

(c) a carrier block associated with said end of said bar for supporting said member in attaching relation to said face of said sheet as said bar end moves theretoward.

3,374,141
ETCHING PROCESS FOR PRODUCING A NON-REFLECTIVE SURFACE ON FLOAT GLASS

Albert E. Junge, New Kensington, and Joseph Chabal, Curtisville, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 490,710, Sept. 27, 1965, which is a continuation-in-part of application Ser. No. 252,315, Jan. 18, 1963. This application Mar. 20, 1967, Ser. No. 624,204

11 Claims. (Cl. 161—1)

The present invention relates to a process for producing a non-glare float glass product having high resolution characteristics. More particularly, the invention relates to a process of contacting a surface of a glass article with molten metal and thereafter contacting the glass article with a mat etching solution for a sufficient period of time to provide a low specular reflecting surface on those surfaces not contacted with the molten metal; the metal contacted surface retaining its highly reflective appearance. The invention provides an improvement over traditional mat etching processes inasmuch as a novel means of protecting one surface from the etching solution has been discovered.

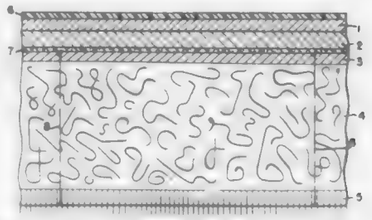
3,374,142
PROTECTIVE COVERING ARTICLE

Alois Reckl, Kelsterbach (Main), Germany, assignor to Vereinigte Glanzstoff-Fabriken A.G., Wuppertal-Elberfeld, Germany

Filed June 19, 1964, Ser. No. 376,340

Claims priority, application Germany, June 28, 1963, V 24,241

4 Claims. (Cl. 161—50)



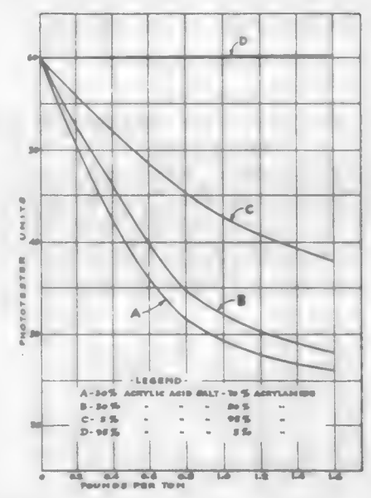
1. A multilayered, high strength, waterproof, light, protective covering article capable of insulating against heat and cold which comprises: a voluminous fleece core composed of non-adhering polyethylene terephthalate fibers having a denier of approximately 3 enclosed on either side by (1) an inner nylon true velour fabric having a thread denier of approximately 40/18 such that the pile side of said velour fabric faces away from said fleece to form the inside exterior surface of said covering and (2) a light weight woven monofil nylon fabric consisting of continuous filaments of a denier of approximately 20; quilt-stitches running through said fleece core and connecting said core to each of said nylon fabrics (1) and (2); and an outer high strength nylon fabric having a thread denier of approximately 210/36 firmly attached over said light weight fabric by an adhesive and having its exterior surface coated by polychloroprene as a waterproofing agent, said protective covering article having a maximum weight of not more than about 850 g./m.^{2}.

3,374,143
METHOD OF IMPROVING OPERATIONAL EFFICIENCY OF WHITE WATER RECOVERY SYSTEM BY TREATMENT WITH ANIONIC COPOLYMERS OF ACRYLIC ACID SALTS AND ACRYLAMIDE

William M. Stephenson, Park Forest, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

Filed June 11, 1964, Ser. No. 374,453

2 Claims. (Cl. 162—190)



This invention is concerned with improving the operational efficiency of vacuum and flotation type white water recovery systems by treating them with specific anionic copolymers of acrylic acid salts and acrylamide.

3,374,144
OPHTHALMIC COMPOSITION
Morris Emmanuel Stolar, Parsippany, N.J., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Oct. 7, 1965, Ser. No. 493,931
3 Claims. (Cl. 167—59)

1. An ophthalmic composition which comprises an aqueous solution of from about 0.125% to about 1.0% by weight of a local anesthetic selected from the group consisting of lidocaine, tetracaine, procaine, proparacaine, benoxinate and piperocaine and an equimolar amount of sodium fluorescein, and from about 0.5% to about 5.0% by weight of water soluble liquid ethoxylated lanolin and from 0.5% to about 5.0% of polyoxyethylene sorbitan monooleate.

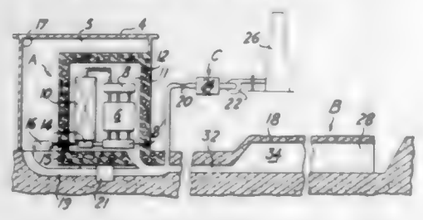
3,374,145
PREPARATIONS AND METHOD FOR TREATING INFLAMMATORY CONDITIONS
Takashi Enkoji, Park Forest, and Charles Daniel Bossinger, Kankakee, Ill., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Mar. 11, 1965, Ser. No. 439,080
13 Claims. (Cl. 167—65)

1. A pharmaceutical preparation having anti-inflammatory activity comprising a pharmaceutically acceptable carrier and from about 1 mg. to about 8000 mg. of a member selected from the group consisting of 5-amino-1-phenyl tetrazole and its non-toxic pharmaceutically acceptable acid addition salts.

3,374,146
SUSTAINED RELEASE ENCAPSULATION
Mitchell Stanley Blicharz, Blauvelt, and Gerald James Jackson, Bardonia, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 18, 1966, Ser. No. 543,041
3 Claims. (Cl. 167—83)

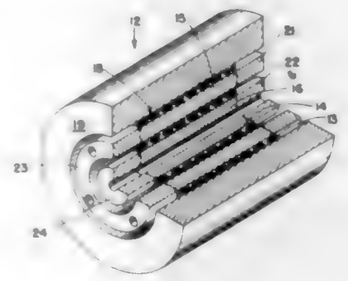
1. A cast pharmaceutical hard shell gelatin capsule product having a cross section of at least 5 mm. but below a size at which swallowing is difficult and filled with a sustained release pharmaceutical composition containing up to about 2% of an adjuvant selected from the group consisting of stearic acid, stearyl alcohol, myristic acid, myristic alcohol, glyceryl monostearate, glyceryl tristearate, glyceryl distearate, acetylated glycerides, carnauba wax, hydrogenated tallow, hydrogenated lard, soybean oil, beeswax, cetyl alcohol, polyethylene glycol having an average molecular weight of about 4,000, and mixtures thereof, together with a medicament not damaged by heating to the melting point of said adjuvant.

3,374,147
SAFETY SYSTEM FOR PRESSURE TUBE REACTORS
Didier Costes, Paris, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed June 28, 1966, Ser. No. 561,156
Claims priority, application France, July 2, 1965, 23,368
6 Claims. (Cl. 176—37)



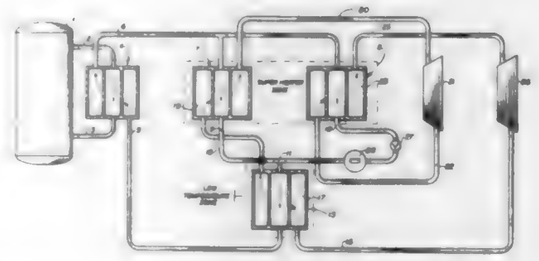
The discharge duct has vertical pillars profiled in the direction of gas flow for cooling fluid released upon failure of a reactor cooling circuit and for directing the flow of said fluid axially of the safety chamber. The discharge duct has a volume which is at least equal to that of the reactor heat exchange fluid when it is cooled. An auxiliary decontamination discharge circuit is connected in parallel with the safety chamber and includes in series, a sonic venturi tube, a bank of decontamination filters, a blower and an exhaust stack.

3,374,148
NUCLEAR REACTOR CORE FOR A ROCKET
Frank E. Rom, Avon Lake, and Armin F. Lietzke and Robert E. Hyland, Westlake, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Application Jan. 19, 1967, Ser. No. 610,725, which is a division of application Ser. No. 420,249, Dec. 16, 1964, now Patent No. 3,336,749, dated Aug. 22, 1967, which in turn is a division of application Ser. No. 260,085, Feb. 20, 1963. Divided and this application Aug. 7, 1967, Ser. No. 658,954
8 Claims. (Cl. 176—58)



A reactor core with a plurality of fuel elements in the form of plates of tungsten uranium dioxide matrix clad with tungsten. The plates are stacked in spaced relationship to provide passages for a liquid rocket propellant.

3,374,149
NUCLEAR REACTOR HEAT TRANSFER SYSTEM
Harold C. Parris, Los Angeles, Calif., assignor to North American Aviation, Inc.
Filed May 19, 1967, Ser. No. 641,425
7 Claims. (Cl. 176—65)

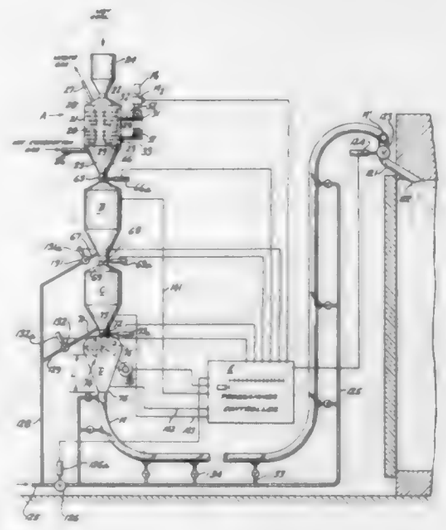


A heat transfer system having a superheater, reheater and evaporator heat exchanging modules, each having a primary liquid metal flow path and a secondary fluid flow path. The primary fluid flow paths of the superheater and reheater modules are connected in parallel with each other and in series with the primary fluid flow path of the evaporator module. The secondary fluid flow paths of the superheater, evaporator and reheater modules are connected in series through a turbine.

3,374,150
PROCESS FOR PRODUCING L-ORNITHINE
Yuichi Noguchi, Tetsuo Uno, Yoshita Kubota, and Hiroshi Hosoda, Hofu-shi, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Apr. 22, 1965, Ser. No. 450,207
Claims priority, application Japan, Apr. 22, 1964, 39/22,386; June 27, 1964, 39/36,270
17 Claims. (Cl. 195—47)

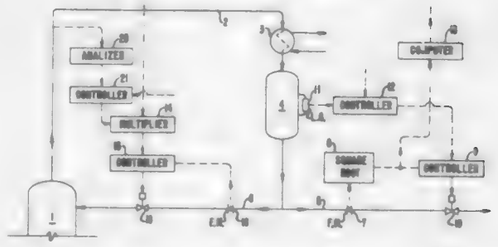
A fermentation process for producing L-ornithine which comprises culturing a microorganism capable of producing L-ornithine, such as *Micrococcus glutamicus* ATCC 13,232, in an aqueous nutrient medium under aerobic conditions in the presence of approximately 0.01 to 1.0% by weight of esters of monohydric alcohols with saturated aliphatic carboxylic acids, derivatives of the esters, especially the alkyl-substituted derivatives in the acid moiety thereof, and mixtures thereof. Exemplary esters include the alkyl esters of citric acid, succinic acid, malic acid, malonic acid, adipic acid and gluconic acid, the alkyl ester moieties thereof each having from 1 to 10 carbon atoms.

3,374,151
METHOD AND APPARATUS FOR AUTOMATICALLY CHARGING THE COKING CHAMBERS OF COKE OVEN BATTERIES
Lawrence D. Schmidt, New York, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 282,351, May 22, 1963. This application Oct. 20, 1966, Ser. No. 588,217
8 Claims. (Cl. 201—8)



1. A process for charging coal to the coking chambers of a coke oven battery in which the individual ovens are charged and discharged in timed sequence and having a confined conduit for pnuematic transport of a measured and heated coal charge said conduit extending from an inlet, longitudinally of the battery, with branches leading therefrom to each of the ovens of said battery for selectively placing the individual ovens in fluid communication with said confined conduit and interrupting such communication, comprising establishing fluid communication between said conduit and a discharged hot oven, measuring a charge of coal in a closed preheat section in controlled communication with said confined conduit, forming from said measured charge of coarsely comminuted coal capable of filling said oven and preheated to about 220° F. to about 700° F. a stream thereof suspended in pressurized inert conveying carrier gas, and rapidly feeding said pressurized stream by means of said gas in the inlet of said conduit until said charge is exhausted, pneumatically conveying said stream of coarse coal through said conduit under the influence of inert pressurized gas and into said oven while subjecting the coal to a series of jet impulses of upwardly directed high velocity jets of inert gas introduced through the bottom of said confined conduit at spaced points laterally along the length thereof, feeding said measured preheated charge until exhausted, and after completion of the feeding of the charge to said oven interrupting the fluid communication between it and said conduit, and upon completion of discharge of the next oven in the battery repeating the aforesaid steps with respect thereto.

3,374,152
APPARATUS FOR THE AUTOMATIC CONTROL OF THE QUALITY OF THE SEPARATION IN A DISTILLATION PROCESS BY MAINTAINING A CONSTANT RATIO OF VAPOR FLOW TO REFLUX FLOW
Johannes E. Rijnsdorp, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 18, 1965, Ser. No. 426,268
Claims priority, application Netherlands, Jan. 30, 1964, 64—773
1 Claim. (Cl. 202—158)

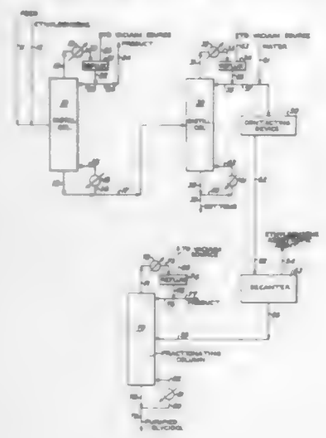


A method of controlling a distillation column wherein the ratio of internal vapor flow to internal reflux flow is maintained constant by adjusting the external reflux flow. The external reflux flow, top product flow and top product quality are measured and then combined to produce a signal related to the ratio of internal vapor flow to internal reflux flow.

3,374,153
PROCESS FOR RECOVERY OF GLYCIDOL FROM ALCOHOL BY AZEOTROPIC DISTILLATION WITH A HYDROCARBON
Anthony N. Naglieri, New York, N.Y., assignor to Halcon International, Inc., a corporation of Delaware
Filed July 25, 1966, Ser. No. 567,430
12 Claims. (Cl. 203—44)

1. A process for recovering glycidol from a feed mixture comprising glycidol, allyl alcohol and higher boiling materials, said process comprising the steps of:
(a) conducting a first distillation of feed mixtures whereby a first overhead product and a first bottoms product are obtained, said first overhead product comprising allyl alcohol and said first bottoms product comprising glycidol substantially free from allyl alcohol, and

(b) conducting a second distillation, the feed to which is said first bottoms product, in the presence of a hydrocarbon azeotropic agent which forms a low



boiling azeotrope with glycidol for the recovery, as a second overhead product, of a glycidol-azeotropic agent azeotrope.

3,374,154

ELECTROFORMING AND ELECTRODEPOSITION OF STRESS-FREE NICKEL FROM THE SULFAMATE BATH

Hugh L. McCutchen, Warwick, N.Y., assignor to The International Nickel Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 12, 1965, Ser. No. 471,431
5 Claims. (Cl. 204—3)

1. The process for electrodepositing nickel having a controlled stress level which comprises establishing an aqueous acid sulfamate bath having a pH of about 3 to about 5 and containing about 55 to about 110 grams per liter of nickel, up to about 90 grams per liter of sulfate ion, up to about 25 grams per liter of chloride ion, a buffering amount of boric acid and a temperature of about 100° F. to about 170° F. and passing a plating current through said bath at a cathode current density up to about 300 amperes per square foot from an active nickel anode to a cathode immersed therein while subjecting said bath to anodic oxidation by supplying current in the amount of about 0.25% to about 4% of the plating current to an insoluble anode immersed in said bath to produce a nickel deposit having a controlled internal stress level over a long period of bath operation.

3,375,155

MODIFIED OXIDE-COATED ALUMINUM AND THE METHOD OF MODIFYING

Ludwig J. Weber, 6016 Birch Crest Drive, Minneapolis, Minn. 55424

Continuation-in-part of application Ser. No. 397,018, Sept. 16, 1964. This application Feb. 19, 1965, Ser. No. 434,121
23 Claims. (Cl. 204—38)

A process of improving the corrosion resistance of aluminum articles that includes removing the impurities from the article surface, then chemically or electrolytically forming an artificial aluminum oxide coating, treating the artificially oxide coated article to a dilute aqueous solution of an inorganic base such as NaOH or KOH, and thereafter treating the article to an alkaline silicate solution. Advantageously intermediate the above mentioned treatments, the article is treated to one or more of aqueous solutions of (1) organic compounds having cations of various iron group metals and anions of acetates, citrates, oxalates, tartrates, (2) organic compounds of various alkali and alkali earth metals having anions of acetates, citrates, oxalates, (3) ammonium hydroxide, (4) ammonium compounds having an anion of such acetates, citrates, carbonates, and (5) various mixtures of the above.

3,374,156

ELECTRO-DEPOSITING STAINLESS STEEL COATINGS ON METAL SURFACES

Louis Schiffman, Wyncote, Pa., and Willibald Machu, Vienna, Austria, assignors to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

No Drawing. Filed May 19, 1965, Ser. No. 457,215
4 Claims. (Cl. 204—43)

1. The method of electro-depositing a stainless steel alloy coating consisting of chromium, nickel and iron on a metal surface, said method comprising using the metal to be coated as a cathode in a plating bath consisting essentially of an aqueous solution of from 0.2 mol/liter to saturation of a salt of each of the metals in the alloy to be deposited, said salt being selected from the class consisting of sulfate salts and chloride salts of each of said metals, from 1 to 4 mols/liter of urea, at least 0.3 gram per liter of a soluble hydrazine, calculated as N_2H_4, with the balance water; maintaining the temperature of the bath at from 30° C. to 80° C., and the pH at from 1.5 to 3.5, and passing an electric current of from 0.645 to 2.148 amps./in.^{2} therethrough between an anode and the said cathode.

3,374,157

ELECTROLYTE FOR THE ELECTRODEPOSITION OF TECHNETIUM

Willard D. Box, Oak Ridge, Tenn., assignor to the United States of America as represented by the Secretary of the United States Atomic Energy Commission

No Drawing. Filed May 21, 1965, Ser. No. 457,872
2 Claims. (Cl. 204—45)

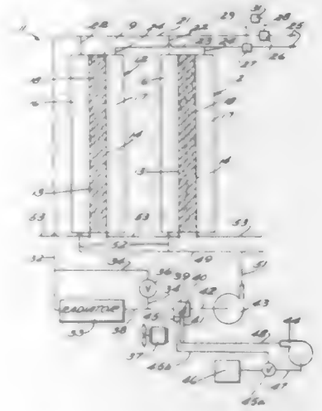
1. An electrolytic plating bath for technetium comprising an aqueous solution of sulfuric acid containing technetium as pertechnetate ion, and a stabilizing amount of a polycarboxylic acid selected from the group consisting of oxalic, gluatric, malonic, succinic, tartaric, and citric acids and ammonium salts thereof, sufficient to prevent reduction of the pertechnetate in solution to a lower oxidation state, said bath having a pH in the range of 1 to 2.

3,374,158

HIGH PRESSURE ELECTROLYSIS SYSTEM AND PROCESS FOR HYDROGEN-OXYGEN GENERATION

Albert M. Lord, Lakewood, and Thomas H. Hacha, Willoughby, Ohio, assignors to TRW Inc., a corporation of Ohio

Filed Apr. 1, 1964, Ser. No. 356,470
9 Claims. (Cl. 204—129)



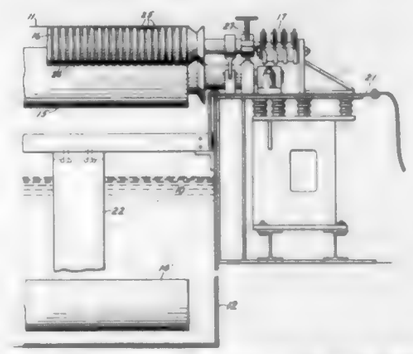
Electrolysis system for hydrogen-oxygen generation wherein a portion of one of the product gases is humidified and returned to a porous electrode in the electrolysis cell to replenish the water used up during electrolysis.

3,374,159

MARKING OF STEEL STRIP ELECTROLYTICALLY USING ELECTROLYTE ADHERING TO THE STRIP

William D. Poole, Center Valley, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware

Filed Feb. 9, 1965, Ser. No. 431,269
7 Claims. (Cl. 204—143)



In a method of marking strip, a metal strip is withdrawn from a pickling bath, the strip carrying with it a film of pickling solution. The wet strip makes physical contact with a marking roll having electrically conductive portions and raised electrically non-conductive portions on its surface. Current from a current source passes by way of an electrode in the pickling solution to the strip as anode, and thence through the liquid film on said strip to the electrically conductive portions of the marking roll and back to the power source. Sufficient current is supplied to develop a light etch on the strip in the pattern of the electrically conductive roll surface.

3,374,160

PHOTOPOLYMERIZATION WITH O-BROMOACETOPHENONE AS A PHOTOINITIATOR

Tzu Jen Mao, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Oct. 26, 1966, Ser. No. 589,486
5 Claims. (Cl. 204—159.23)

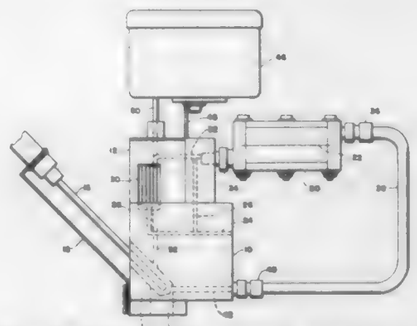
Ethylenically unsaturated organic monomers such as methyl methacrylate containing a small but effective amount of ortho-bromoacetophenone are polymerized upon exposure to ultraviolet light. Ortho-bromoacetophenone acts as a photopolymerization initiator.

3,374,161

EXTERNAL COULOMETRIC GENERATOR

Jules Zatz, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Oct. 28, 1964, Ser. No. 407,099
6 Claims. (Cl. 204—195)



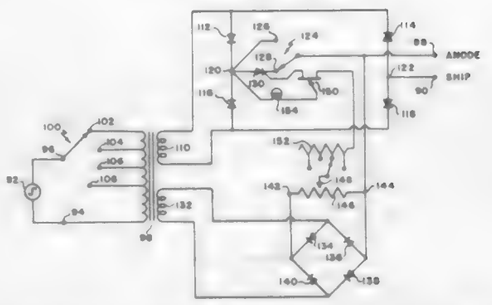
An external coulometric reagent generator for use in a process titrator, for example, including vertical electrode wires on the face of the membrane for reducing opposition to the flow of the electrolyte, a parallel upward path in the electrolyte flow-stream prior to the path leading up into the generator to permit the escape of entrapped air bubbles, and a hydrophobic filter arranged to expel any gas flowing upward through the vertical conduits and to block the flow of electrolyte.

3,374,162

CONTROL UNIT FOR AUTOMATIC CATHODIC PROTECTION

Haydn Rubelmann, 1201 McDonald Road, Norfolk, Va. 23500

Filed Aug. 21, 1962, Ser. No. 218,468
8 Claims. (Cl. 204—196)



1. In a cathodic protection system means for detecting changes in potential difference between an object being protected and a protection anode irrespective of environmental conditions or previous regulatory currents existing therebetween, comprising:

a source of power;

first and second sources of differing static electrical potential in which the said object and anode are respectively located;

threshold gating means having a first input element connected to said source of power and to said first source of potential, and a second input element connected to said second source of potential;

said gating means having a further element whereby a small operating current normally flows between said second and further elements;

means isolating said small current flow from said sources of potential;

said threshold gating means being biased to non-conduction between said first and second input elements when the potential difference between said sources of potential is at a predetermined level and being biased to conduction when the difference in potential between said sources of potential decreases from said predetermined level by a predetermined amount.

3,374,163

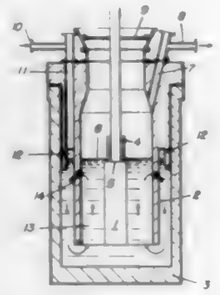
CELL FOR ELECTROLYSIS WITH MOLTEN SALT ELECTROLYTE

Edwin Meier and Erich Schweizer, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

Filed Nov. 7, 1963, Ser. No. 322,106
Claims priority, application Switzerland, Nov. 15, 1962, 13,355/62
3 Claims. (Cl. 204—246)

An electrolytic cell is provided for the manufacture of metals of the 4th, 5th and 6th sub-groups of the Periodic Table from the halide of the metal in a molten salt electrolyte. The cell has a hollow cylindrical anode and a rod-shaped cathode. The cathode is positioned within and coaxially aligned with the anode. The anode is characterized by having a plurality of annularly-arranged holes which extend downward from the inner wall of the anode

to the outer wall of the anode. The cell has a downward-opening annular chamber positioned about the outer wall of the anode. In operation the cell is filled with a molten salt electrolyte to a level at which the surface of the electrolyte is slightly above the holes in the anode



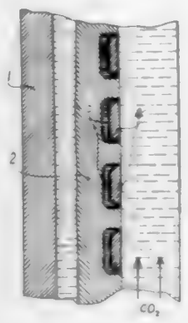
and in communication with the opening of the annular chamber. A vaporized metal halide is fed into the annular chamber from where it is introduced into the electrolyte. The holes in the anode assist the circulation of the electrolyte and facilitate the removal of the halide gases from the electrolyte in the cell.

3,374,164

ELECTROLYZER FOR SIMULTANEOUS PREPARATION OF CHLORINE AND ALKALI CARBONATES

Jan Balej, Ivo Paseka, and Jiří Vondrák, Prague, and Vojtěch Koudelka, Mlada Boleslav, Czechoslovakia, assignors to Ceskoslovenska Akademie Ved, Prague, Czechoslovakia

Filed June 10, 1964, Ser. No. 374,077
Claims priority, application Czechoslovakia, June 28, 1963, 3,729/63
11 Claims. (Cl. 204—265)



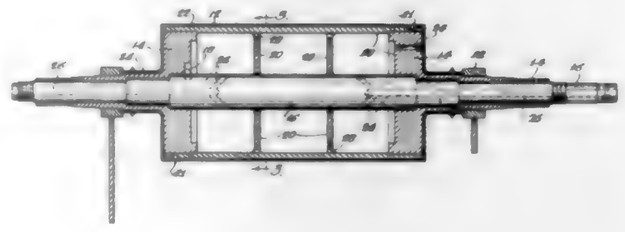
An electrolytic device for the simultaneous production of chlorine and alkaline carbonates comprises an anode, a cathode, means for introducing carbon dioxide into the cathode space, and a diaphragm which is separated from the active surface of the cathode. The diaphragm may be arranged on and adhered to a separate auxiliary screen which is spaced from the cathode and consists of an insulating material or of metal coated with an insulating surface. The diaphragm may also be arranged directly on the cathode which at the side where the diaphragm is arranged is provided with an insulating coating which separates the diaphragm from the active surface of the cathode. The cathode may consist of a screen or other apertured body and the carbon dioxide may be introduced into the space adjacent that portion of the cathode which is free of said insulating coating. The diaphragm may consist of asbestos or a plastic. The efficiency of the electrode is thus increased, since migration of the hydroxyl ions prior to carbonation is prevented.

3,374,165

CONDUCTOR ROLL

John W. O'Brien, Villa Park, and Arthur R. Stahlberg, Park Ridge, Ill., assignors to Electro-Coatings, Inc., a corporation of Delaware

Filed Feb. 18, 1965, Ser. No. 433,688
14 Claims. (Cl. 204—279)



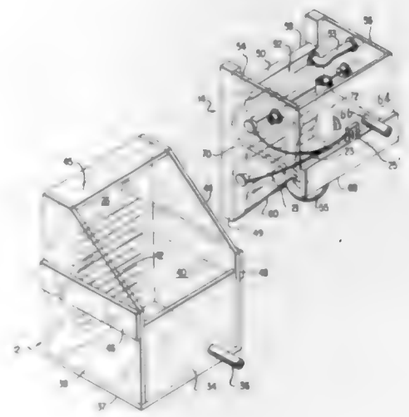
1. A conductor roll for use as an electrode in a bath of an electrolytic coating or cleaning system, which comprises a shaft, an inner, highly electrically conductive, tubular metal shell, a highly electrically conductive metal trunnion means supporting said inner shell on said shaft for rotation therewith, and a seamless, outer, centrifugally cast, electrically conductive tubular metal shell contraction fitted on said inner shell in compression force-fit with and covering the outer surface of said inner shell providing electrical connection between the inner and outer shells, the metal of said outer shell being highly resistant to acid corrosion and having lower electrical conductivity than the metal of said inner shell.

3,374,166

VERTICAL GEL ELECTROPHORESIS APPARATUS

Samuel Raymond, 4312 Osage Ave., Philadelphia, Pa. 19104

Filed Nov. 30, 1964, Ser. No. 414,654
Claims priority, application Great Britain, Sept. 21, 1964, 38,461/64
7 Claims. (Cl. 204—299)



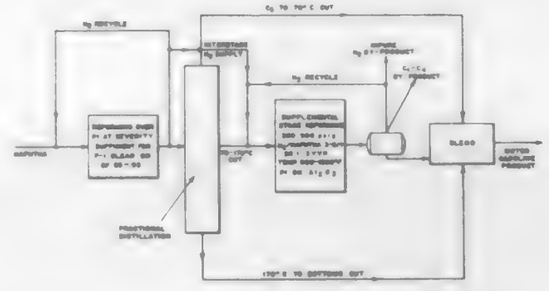
1. A vertical gel electrophoresis apparatus of the type including a lower buffer solution chamber capable of holding liquid buffer solution, an upper buffer solution chamber capable of holding liquid buffer solution, a wall of each buffer solution chamber defining a gel passageway, the gel passageway being in fluid communication with liquid buffer solution in the buffer solution chambers and, when said passageway is filled with impermeable gel free flow of buffer solution from the upper chamber to the lower chamber is prevented by said gel, an electrode in each buffer solution chamber positioned below a normal level for buffer solution therein, each electrode including means for connection to a source of D.C. current, the upper and lower buffer solution chambers and the gel passage walls being constructed of a material having electrically insulating properties at least on the surface thereof, and means for holding the upper and lower buffer solution chambers in rigid assembled relationship, the improvements comprising, an internal drain tube extending from the bottom of the upper tank upwardly a distance equal to a desired level of buffer solution in the tank, external tubular connections establishing fluid communication between the two tanks and pump means for recirculating buffer solution from the lower tank through the external tubular connections to the upper tank and then draining back to the lower tank.

3,374,167

PREPARATION OF MOTOR FUELS HAVING AN OCTANE NUMBER ABOVE 100

Robert G. Craig, Fairfax, Wilmington, Del., and Lee Friedman, Bala Cynwyd, and William A. Schwartz, Morton, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

Filed Mar. 1, 1966, Ser. No. 530,989
4 Claims. (Cl. 208—65)



A full range reformate having an F_1 clear octane number of about 90, and derived from hydrogenative reforming over a platinum on alumina catalyst, is fractionally distilled to separate a heart cut having an IBP of at least 70° C. and EBP below 170° C. Said heart cut is reformed at about 535° C. at about 20 atmospheres H_2 pressure at a H_2/hydrocarbon mol unit ratio of about 10 at about 3 liquid volumes of hydrocarbon per volume of platinum on alumina catalyst, and the second stage reformate is blended with the bottoms and forecut from the first stage reformate to provide full range gasoline having an F_1 clear octane number above 100. Among multi-step routes toward full range gasoline having F_1 clear octane above 100 using only reforming steps featuring platinum catalyst, this method has advantageously high yield and advantageously low deactivation rate for total platinum inventory.

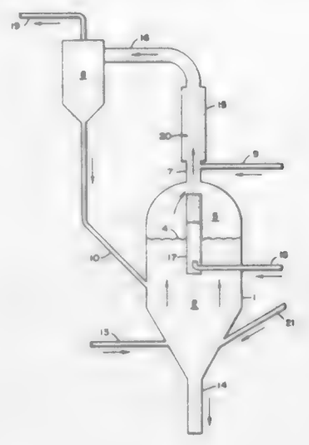
3,374,168

COKING PROCESS AND APPARATUS

William Joseph Metrailer, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed June 29, 1966, Ser. No. 561,519
10 Claims. (Cl. 208—127)

An upflow high temperature coking process and apparatus are described in which fluid coke is produced by pyrolysis of hydrocarbons. The fluid coke is entrained in liberated hydrogen and conveyed to a transfer line burner, heated therein and returned to the fluid coke bed to provide the endothermic heat of cracking for the coking reaction.



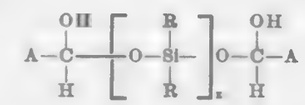
3,374,169

ORGANIC LIQUIDS THICKENED WITH TREATED SILICA MATERIALS

Nelson H. Kasten and Harry Teicher, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Feb. 7, 1966, Ser. No. 525,333
12 Claims. (Cl. 252—28)

The present invention relates to a thickening agent comprising silica material such as fume silica or a silica aerogel and a silicone glycol copolymer having the general formula



wherein R is an alkyl group having 1 to 4 carbon atoms; A is either hydrogen, an alkyl group having 1 to 3 carbon atoms, or a hydroxy substituted alkyl group having 1 to 3 carbon atoms; and x is an integer representing the number of units in the molecular chain and has a value of 1 to 25. The aforesaid novel thickening agent is utilized for increasing the viscosity and thixotropy of a variety of organic liquids, such as an oleaginous liquid, a liquid organic resin, and the like. Such organic liquids containing the novel thickening agent comprise another embodiment of this invention.

3,374,170

GREASE COMPOSITION

John F. Hedenburg, Cheswick, and Chester S. Tempalski, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,745
10 Claims. (Cl. 252—28)

3. A lubricating composition comprising a liquid polyorgano siloxane thickened to a grease consistency with about 10 to about 25 percent by weight of a polyaryl urea which prior to being incorporated into the polyorgano siloxane has been heated to a temperature of

about 450° to about 600° F. for a time sufficient to reduce the weight of the polyaryl urea by about 20 to about 40 percent, said polyaryl urea being the reaction product of an aryl isocyanate having the formula:

$$R(NCO)_n$$

where R is selected from the group consisting of arylene and C_1 to C_4 alkyl substituted arylene radicals containing not more than 12 cyclic carbon atoms and n is an integer of 2 to 3 and an aryl amine having the formula:

$$R_1(NH_2)_m$$

where R_1 is selected from the group consisting of aryl, alkaryl, aminoaryl, hydroxyaryl, cyanoaryl, haloaryl, alkoxyaryl, aryloxyaryl and aminoaryloxyaryl radicals wherein the alkyl portions of said alkaryl and alkoxyaryl radicals contain from 1 to 4 carbon atoms and m is an integer of 1 to 3 and wherein said reaction product is prepared by reacting the aryl isocyanate and the aryl amine in amounts such that the ratio of the isocyanate groups to the amine groups is within the range of about 1:1 to about 1:2 and about 0.5 to about 5 percent by weight of an auxiliary thickening agent selected from the group consisting of finely-divided silica, p-polyphenyl, and ammeline.

3,374,171

AQUEOUS LUBRICANT COMPOSITIONS CONTAINING AN ALKANOLAMINE, A SATURATED ORGANIC ACID AND A POLYOXYALKYLENE GLYCOL

Robert H. Davis, Pitman, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 505,454, Oct. 28, 1965. This application Apr. 25, 1967, Ser. No. 633,416

10 Claims. (Cl. 252—34.7)

Lubricant compositions are provided containing a major proportion of water and minor amounts of a water-soluble alkanolamine, a saturated organic acid having from about 6 to about 9 carbon atoms per molecule and a polyoxyalkylene glycol. These compositions are particularly effective as cutting fluids in metal machining operations.

3,374,172

OIL ADDITIVES

Kenneth Charles Roberts, Mellor, and Albert William White, Bramhall, England, assignors to The Anchor Chemical Company Limited, Manchester, England, a British company

No Drawing. Filed Apr. 7, 1966, Ser. No. 540,824

Claims priority, application Great Britain, Apr. 9, 1965, 15,300/65

5 Claims. (Cl. 252—37.2)

1. An extreme pressure oil additive for lubricating oils and cutting fluids comprising

(a) a liquid reaction product of sulphur monochloride and a fatty ester, in an amount sufficient to impart extreme pressure properties when the additive is incorporated in a lubricating oil or cutting fluid, and

(b) a salt, soluble in the sulpho-chlorinated product and in the lubricating oil or cutting fluid, of a Group II metal and an acid selected from the group consisting of naphthenic acids and aliphatic carboxylic acids, said salt being present in an amount sufficient to prevent stain when the additive is incorporated in a lubricating oil or cutting fluids.

3,374,173

LUBRICANT COMPOSITIONS CONTAINING 2,4,6-TRI-AMINO-SUBSTITUTED PYRIMIDINES

Stuart Walter Critchley, Hale Barns, and Frank Lamb, Oldham, England, assignors, by mesne assignments, to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Original application Nov. 9, 1964, Ser. No. 409,993, now Patent No. 3,325,496, dated June 13, 1967. Divided and this application Mar. 28, 1967, Ser. No. 626,400

Claims priority, application Great Britain, Nov. 12, 1963, 44,534/63

3 Claims. (Cl. 252—50)

Lubricant compositions are provided comprising as an essential lubricant ingredient 2,4,6-tri-amino-substituted pyrimidines. Such lubricant compositions are of especial value as high temperature lubricants or other functional fluids for use at high temperatures.

3,374,174

COMPOSITION

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 12, 1966, Ser. No. 541,963

11 Claims. (Cl. 252—51.5)

Nitrogen-containing compositions obtained from the reaction of an amine with a high molecular weight carboxylic acid such as a monocarboxylic acid and an alkylene or arylene dicarboxylic are useful in lubricants.

3,374,175

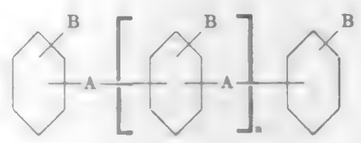
PHENYL ETHER COMPOSITIONS

Karl J. Sax, Orinda, Calif., Walfred S. Saari, Ambler, Pa., and Clarence L. Mahoney, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

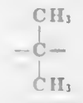
No Drawing. Continuation-in-part of abandoned application Ser. No. 701,296, Dec. 9, 1957. This application Apr. 29, 1960, Ser. No. 25,547

16 Claims. (Cl. 252—52)

6. A composition consisting essentially of a mixture of polyphenyl ethers having the general configuration



wherein n is a whole number from 2 to 6, the A's are radicals of the group consisting of oxygen and



at least one of which is oxygen and B is a radical of the group consisting of hydrogen, alpha-cumyl and tertiary-butyl, a first portion of the mixture being one in which all of the molecules have at least ⅔ of the pairs of radicals A attached to carbon atoms in the same phenyl rings in meta positions relative to each other and the second portion of the mixture being one in which all of the molecules have less than ⅔ of the pairs of radicals A attached to carbon atoms in the same phenyl ring in meta positions to each other, the mol ratio of the first portion to the second portion being between about 1:2 and about 9:1.

3,374,176

PROCESS FOR MAKING N-TYPE ZINC CADMIUM SULFIDE ELECTROLUMINESCENT MATERIAL

Ralph M. Potter, Pepper Pike, Ohio, assignor to General Electric Company, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 19,446, Apr. 4, 1960. This application Jan. 4, 1965, Ser. No. 423,368

3 Claims. (Cl. 252—62.3)

1. The method of preparing a zinc-cadmium sulfoselenide wide band gap semiconducing phosphor having high and predominantly n-type conductivity and emission bands in the visible spectrum and being suitable for injection electroluminescence comprising preparing a solid solution of ZnS with CdS containing from about 0.3 to about 0.6 mol of Zn per total mols of Zn plus Cd and wherein the S may be partly substituted with Se, adding thereto 10^{-4} mol fraction of gallium, firing in H_2S at a temperature in the range of 750 to 900° C., and then refiring in vacuo in the presence of madmium at a temperature in the range of 750 to 900° C.

3,374,177

PRODUCTION OF A BLEACHING LIQUOR CONTAINING PERFORMIC ACID

Oswald Schmidt, Frankenthal, Pfalz, and Karl Heinz Ruecker, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed July 6, 1965, Ser. No. 469,897

Claims priority, application Germany, July 10, 1964, B 77,609, B 77,610

12 Claims. (Cl. 252—186)

A process for the production of a bleaching liquor containing performic acid by bringing together at a temperature of up to 60° C. in an acid to neutral aqueous solution (a) hydrogen peroxide and (b) at least one substance yielding either formaldehyde, a low molecular weight formic ester or a low molecular weight formamide, the hydrogen peroxide being present in an amount equivalent to one to twelve times that of the substances (b).

3,374,178

DOPED HYPOSTOICHIOMETRIC DIOXIDE NUCLEAR FUEL COMPOSITION AND METHOD OF PREPARATION

John Edward May, Wantage, England, and Richard Lloyd Stoute, Deep River, Ontario, Canada, assignors to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada

No Drawing. Filed May 3, 1965, Ser. No. 452,895

7 Claims. (Cl. 252—301.1)

1. A ceramic nuclear fuel composition comprising a hypostoichiometric dioxide of a metal selected from the group consisting of uranium and thorium and mixtures thereof with an oxygen to metal ratio in the range of about 1.90–1.998 and containing therein minor quantities of an additive oxide of a metal selected from the group consisting of yttrium, lanthanum and niobium.

7. The procedure for forming reactor fuel compositions comprising: (1) forming an intimate mixture of a hyperstoichiometric dioxide of a metal selected from the group consisting of uranium and thorium and mixtures thereof with up to about 1 atom percent of a member selected from the group consisting of the metal and metal oxides of yttrium, lanthanum and niobium; (2) sintering the mixture; and (3) thereafter reducing the dioxide to a hypostoichiometric state at a temperature in the range of about 1700–2000° C.

3,374,179

GREEN ELECTROLUMINESCENT ZINC SULFIDE PHOSPHOR

Ivie Lee Smith, Greenville, N.C., assignor to General Electric Company, a corporation of New York

Continuation-in-part of application Ser. No. 310,668, Sept. 23, 1963. This application Apr. 10, 1967, Ser. No. 633,665

5 Claims. (Cl. 252—301.6)

A green electroluminescent ZnS:CuCl phosphor of improved brightness and maintenance prepared by a single firing. A mixture of pure ZnS with from 0.2 to 1% by weight CuCl or CuBr, 0.002 to 0.3% by weight As_2O_3, or Sb_2O_3, or Bi_2O_3, or PbO as a fluxing agent, and optionally not over 1% ZnO, is fired in a loosely closed container allowing any gases to be expelled at a temperature in the range of 850 to 950° C. for a period of at least one hour.

3,374,180

PROCESS FOR PREPARING SILICA AQUASOLS

Ralph Marotta, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,703

3 Claims. (Cl. 252—313)

The present invention is directed to and covers a process for preparing silica aquasols containing 30% or more SiO_2 and having colloidal silica particles within the predetermined particle size range hereinafter set forth. This process consists of adding a deionized, acidic silica aquasol to an initial aqueous heel which consists essentially of an aqueous alkali silicate solution having an SiO_2/alkali metal oxide ratio of from about 2.5/1 to about 10/1, which heel weight is approximately 5 to 10% of the total acidic silica aquasol weight and said heel is, during said addition, initially at its boiling temperature at the pressure employed and is essentially maintained at such temperature during the addition of said acidic aquasol thereto, thereby causing water to evaporate from the resultant composite of said heel and acidic aquasol, said acidic aquasol being added at such a rate initially that at least from about 25% to about 30% by weight of said acidic aquasol is added at a rate equal to the rate of evaporation of water from said composite as aforesaid. The composite is then continuously heated under conditions of temperature and pressure such that water is continuously evaporated from said composite and until a final silica aquasol product containing about 30% by weight and more of colloidal silica is obtained. The above-described acidic silica aquasol is added in a total amount such as to provide a final silica aquasol having a pH in the range of 8.5 to 10.5. When the initial heel has a ratio of 2.5/1 to 4.5/1, the resultant silica aquasol has a particle size range of about 15 to 30 millimicrons. When the heel has a ratio of 5/1 to 10/1, the resultant product has a particle size of 35 to 60 millimicrons.

3,374,181

PREPARATION OF COPPER TREATER CATALYST

David S. Joy, Bartlesville, Okla., and Robert E. Dollinger, Borger, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 3, 1964, Ser. No. 386,866

10 Claims. (Cl. 252—440)

1. A process for preparing a composite comprising essentially cupric and chloride ions in concentrated aqueous solution deposited on a porous adsorbent support which comprises the steps of:

(1) maintaining an agitated moving bed of said porous adsorbent support;

(2) spraying said solution in substantial excess of the final concentration obtained in step (3) onto said support in the bed of step (1) so as to form an essentially homogeneous mixture of support and solution

at a rate to provide the desired cupric ion concentration;

(3) suspending the resulting mixture of step (2) in a fluidized bed drying zone in a hot drying gas so as to partially dry said mixture to a water content in the range of about 10 to 20 weight percent and leave a concentrated solution of cupric and chloride ions thereon; and

(4) recovering the partially dried composite essentially comprising said support impregnated with concentrated solution.

6. The process of claim **1** wherein said support is fuller's earth and said salt solution is a mixture of copper sulfate and sodium chloride.

3,374,182

CAUSTIC-TREATED ZEOLITES

Dean Arthur Young, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed May 22, 1964, Ser. No. 369,611
8 Claims. (Cl. 252—455)

Adsorptive capacity and porosity of certain silica-rich zeolites, e.g. mordenite, are improved by digestion with aqueous caustic solutions to leach out a minor proportion of structural silica, without significantly altering crystal structure.

3,374,183

COPPER OXIDE-ALUMINA CATALYST COMPOSITION

Douglas E. Cooper, Birmingham, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 26,698, May 4, 1960. This application Mar. 30, 1961, Ser. No. 99,340
15 Claims. (Cl. 252—463)

1. A method for producing a catalyst, which comprises commingling aqueous ammonia and a carbonate of copper, impregnating an alumina base with the resultant mixture, drying the impregnated base to composite with the base a compound of copper and then calcining the dried base to form a composite of alumina and an oxide of copper.

10. A catalyst composition especially adapted to catalyze the oxidation of exhaust gases, said composition consisting essentially of transition alumina impregnated with 0.5 to 25 percent by weight of copper in an oxide form, said copper oxide being characterized by having been formed by heating a residual product formed in turn by impregnating a transition alumina of the activated type and having a surface area of at least 75 square meters per gram and a silica content of 0.01 to about 5 percent with a deeply violet-colored solution formed by reacting, in the presence of water, an essentially insoluble copper compound selected from the class consisting of copper oxides, copper hydroxide and copper carbonates with an ammoniacal reagent selected from the class consisting of ammonia, ammonium hydroxide and ammonium carbonate, said solution being characterized in that substantially the only anions present are selected from the class consisting of carbonate anions and hydroxide anions.

3,374,184

COPPER CHROMITE-ALKALI METAL OXIDE HIGH SURFACE AREA HYDROGENATION CATALYST

James McEvoy, Morton, and Harold Shalit, Drexel Hill, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 11, 1964, Ser. No. 351,238
5 Claims. (Cl. 252—467)

1. The method of catalyst preparation which comprises incorporating alkali metal compound into cupric ammonium chromate, and thereafter igniting the obtained mixture at about 450–550° F. to transform the alkali metal compound to alkali metal oxide, and to decompose said chromate compound to form cupric chromite the amount of alkali metal oxide so incorproated being 0.01 to 5% by weight of the ignited catalyst, said catalyst being more selective than previously marketed copper chromite catalyst for hydrogenation of furfural to furfuryl alcohol.

3,374,185

ELECTROCONDUCTIVE COMPOSITION CONTAINING $BaPbO_3$

Tsuneharu Nitta, Osaka-fu, Hiromitsu Taki, Sakai-shi, Osaka-fu, and Kaneomi Nagase, Kyoto-shi, Kyoto-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan

No Drawing. Filed Sept. 15, 1965, Ser. No. 487,621
Claims priority, application Japan, Sept. 17, 1964, 39/53,652; Oct. 27, 1964, 39/61,377
4 Claims. (Cl. 252—521)

Ceramic materials composed essentially of barium oxide and lead dioxide have a low electrical resistivity with a small positive temperature coefficient, and are especially useful in the making of sintered resistors, particularly thin layer resistors. The barium oxide, as barium carbonate, is intimately admixed with PbO or Pb_3O_4 and fired (calcined) at 650–800° C., after which the calcined product is crushed and dried. In use, the product may be pelletized, or formulated for use in making resistors, by admixing with refractory oxide and then converting into paste form, or it may be admixed with inert resin of high electrical resistance and used in making thin layer resistors.

3,374,186

CURING POLYEPOXIDE COMPOUNDS WITH A POLYAMINE

Franz Steden, Mannheim, and Ludwig Beer and Oskar Lissner, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 21, 1965, Ser. No. 457,801
Claims priority, application Germany, June 9, 1964, B 77,162
5 Claims. (Cl. 260—2)

1. In a process for the production of insoluble and infusible products by mixing polyepoxides having more than one 1,2-epoxy group in the molecule with polyamines and curing the mixture at from about 20° to about 200° C. the improvement of using a 1-aminomethyl-2-aminopropylcyclohexane as the polyamine.

3,374,187

FLAME RETARDANT COMPOSITIONS PREPARED FROM HALOGENATED 1,2-MONOEPOXYCYCLODODECA-5,9-DIENE AND ADDUCTS THEREOF

David G. Hare, Bricket Wood, near St. Albans, England, and Robert J. Stephenson, Cwmbran, England, assignors to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,887
Claims priority, application Great Britain, Dec. 6, 1963, 48,195/63
9 Claims. (Cl. 260—2.5)

The invention comprises a flame-retardant synthetic resin material comprising a synthetic resin and as flame-retarding agent a halogenation product of 1,2-monoepoxycyclododeca-5,9-diene or a halogenation product of an adduct of 1,2-monoepoxycyclododeca-5,9-diene with a phosphorus halide or with a compound containing a hydroxylic group. The flame-retardant resin material can be a foamable resin material or a foamed resin material, for instance, a foamable or a foamed polystyrene.

3,374,188

PREPARATION OF EXPANDED CELLULAR PRODUCTS

Frank Dennis Marsh, Wilmington, Del., and Donald Nixon Thatcher, Pitman, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 14, 1965, Ser. No. 487,311
4 Claims. (Cl. 260—2.5)

The process for preparing expanded cellular products comprising intimately mixing an amount of ammonium 5-azidotetrazole as a blowing agent with an organic polymer composition and heating to decompose the blowing agent.

3,374,189

2,4,6-TRISUBSTITUTED SULFONYLHYDRAZIDO-s-TRIAZINES AS BLOWING AGENTS FOR HIGH MOLECULAR WEIGHT ORGANIC POLYMERS

John E. Herweh and Algirdas C. Poshkus, Lancaster, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 1, 1965, Ser. No. 505,952
4 Claims. (Cl. 260—2.5)

A process for forming cellular organic polymeric compositions wherein 2,4,6-trisubstituted sulfonylhydrazido-s-triazines are incorporated in the polymer and decomposed with heat. The substituent groups on the triazine may be alkyl or arylalkylene.

3,374,190

2,4,6-TRIARYL SULFONYLHYDRAZIDO-s-TRIAZINES AS BLOWING AGENTS FOR HIGH MOLECULAR WEIGHT ORGANIC POLYMERS

John E. Herweh and Algirdas C. Poshkus, Lancaster, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 1, 1965, Ser. No. 505,985
6 Claims. (Cl. 260—2.5)

A process for forming cellular organic polymeric compositions wherein, 2,4,6 triaryl sulfonyl hydrazido-s-triazines are incorporated in the polymer and decomposed with heat. The aryl substituents on the triazine may be phenyl, substituted phenyl, naphthyl, and substituted naphthyl.

3,374,191

PROCESS FOR THE PRODUCTION OF ELASTOMERIC DIENE POLYMERS WITH IMPROVED PROPERTIES

Karl Nutzel, Cologne-Stammheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 5, 1965, Ser. No. 477,593
10 Claims. (Cl. 260—5)

The cold flow characteristics of a synthetic diene polymer are improved by reacting the polymer, while dissolved in an inert hydrocarbon solvent, with a sulfur chloride.

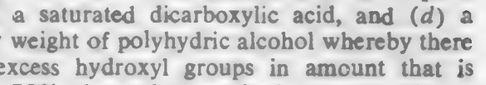
3,374,192

MODIFIED CEMENT MORTAR CONTAINING EMULSION POLYMER OF 2 METHYL α OLEFIN AND MIXED DIALKYL FUMARATE

Roman S. Slysh, Scotch Plains, and George M. Kagun, Metuchen, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 379,731, July 1, 1964. This application Nov. 18, 1965, Ser. No. 508,545
6 Claims. (Cl. 260—17)

1. A cementitious mortar composition comprising cement, water, sand and an emulsion polymer of a C_4 to C_9 2-methyl alpha olefin and a mixed dialkyl fumarate selected from the group consisting of dialkyl fumarate esters having the general formula:



wherein R_1 is a C_1 to C_3 alkyl radical and R_2 is a C_4 to C_{18} alkyl radical.

4. A composition as defined by claim **1** which also contains 0.01 to 0.25 wt. percent methyl cellulose.

3,374,193

POLYEPOXIDE FLUIDIZED BED COATING COMPOSITIONS

William T. Tsatsos, San Mateo, and Roy W. Tess, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1965, Ser. No. 473,218
10 Claims. (Cl. 260—18)

Fluidizable polyepoxide coating compositions are prepared by (1) mixing and reacting a polyepoxide with an aliphatic polymeric fatty acid, in the presence, optionally, of reaction catalysts, epoxy curing agents and fillers, (2) adding an alkali metal hydroxide in hot aqueous medium with rapid stirring until an emulsion forms and (3) cooling the emulsion and allowing the particles to settle out.

3,374,194

COCONUT OIL MODIFIED ALKYD RESINS AND COPOLYMERS THEREOF WITH AN ALKYL ACRYLATE

Robert H. Wholf, Anaheim, Calif., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 120,509, June 29, 1961. This application July 20, 1967, Ser. No. 658,980
10 Claims. (Cl. 260—21)

1. A method of preparing a modified alkyd resin that is capable of forming a homogeneous copolymer with an alkyl acrylate of the group consisting of methyl methacrylate and ethyl acrylate that comprises heat-reacting (*a*) from 2 to 5 parts by weight of an alpha ethylenically unsaturated organic acid, (*b*) from 25 to 60 parts by weight of coconut oil, (*c*) from 20 to 55 parts by weight of a saturated dicarboxylic acid, and (*d*) a proportion by weight of polyhydric alcohol whereby there are present excess hydroxyl groups in amount that is from 10% to 75% above that required to react stoichiometrically with the carboxyl groups of said carboxylic acid components in the presence of from 0.005% to 0.5% based on the weight of the reaction mass, of a polymerization inhibitor until an alkyd resin having an acid number of from 1 to 25 is formed.

3,374,195

POLYVINYL ALCOHOL COMPOSITIONS CONTAINING A PLASTICIZER MIXTURE

Thomas S. Bianco, Hobart, and Edouard M. Kratz, Portage, Ind., assignors to Mono-Sol Division, Baldwin-Montrose Chemical Co., Inc.

No Drawing. Filed Mar. 3, 1964, Ser. No. 349,176
7 Claims. (Cl. 260—29.6)

1. A hot and cold water soluble film-forming polyvinyl alcohol composition containing, in percentages by weight of the polyvinyl alcohol content, a plasticizer combination of about 7–17% of hydroxypropyl glycerine and about 10–20% of a low molecular weight polyethylene glycol, the total proportion of said plasticizer combination being about 22–32%.

6. An aqueous film casting composition comprising an aqueous solution containing about 20–40% by weight of polyvinyl alcohol prepared by replacement of about 80–90% of the acetate groups of polyvinyl acetate by hydroxyl groups, said polyvinyl alcohol having a viscosity of about 20–45 centipoises in 4% aqueous solution at 20° C., and a plasticizer combination of about 7–17% substantially tri-(1-methyl-2-hydroxyethyl) glyceryl ether, and about 10–20% of polyethylene glycol having an average molecular weight of about 200–300.

3,374,196

SLOW-DRYING LATEX PAINTS COMPRISING UREA-POLYOL SOLUTIONS

John A. Gillis, Woburn, and Ronald W. Hayes, Boston, Mass., assignors, by mesne assignments, to Hunt Manufacturing Co., Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 27, 1964, Ser. No. 355,452
4 Claims. (Cl. 260—29.6)

1. A latex coating composition containing as a drying rate depressing additive between about 20 pounds and about 60 pounds per 150 pounds of latex solids of a solution of urea in a non-polymeric water soluble polyol, the ratio by weight of urea to the water soluble polyol in said solution being between about 1 to 3 and about 2 to 1.

3,374,197

VINYLIDENE CHLORIDE COPOLYMER COMPOSITION

Richard Jay England, Circleville, Ohio, and Ronald William Skeddle, Clairton, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 7, 1965, Ser. No. 446,435
2 Claims. (Cl. 260—29.6)

1. Process for preparing a coalescible aqueous coating composition of vinylidine chloride which comprises mixing (1) between about 50% and about 75% by weight of the total solids in said blend a first aqueous vinylidene chloride copolymer dispersion containing between about 92 and about 96 parts by weight of vinylidene chloride, between about 8 and about 4 parts by weight of an alkyl acrylate wherein the alkyl group contains from 1 to 3 carbon atoms and between about 0.5 and about 5 parts by weight of itaconic acid, wherein a coalesced film of said first aqueous dispersion is characterized by an infrared reflectance ratio between about 1.25 and about 1.55 with (2) between about 50% and about 25% by weight based upon the total solids content of said blend of a second aqueous vinylidene chloride copolymer dispersion which contains between about 80 and 91.5 parts by weight of vinylidene chloride, between 20 and 8.5 parts by weight of acrylonitrile and between about 0.5 and about 5 parts by weight of itaconic acid, wherein a coalesced film of said second dispersion is characterized by an infrared reflectance ratio no greater than 1.15, and further wherein the coalesced film of said blend of dispersions is characterized by an infrared reflectance ratio between about 1.35 and about 1.50.

3,374,198

VULCANIZABLE COMPOSITIONS OF OLEFIN COPOLYMERS

Luigi Falcone, Como, and Bruno Galletti, Ferrara, Italy, assignors to Montecatini Edison, S.p.A., Milan, Italy

No Drawing. Filed Nov. 20, 1964, Ser. No. 412,841
Claims priority, application Italy, Nov. 21, 1963, 23,690/63
10 Claims. (Cl. 260—41)

Compounding of ethylene-propylene and ethylene-butene-1 copolymers with specified inorganic fillers and with substance which promotes dispersion of filler and which results in improved mechanical properties of the vulcanizate. Disperson promoter may be polychloroprene, rubbery butadiene-acrylonitrile copolymers, ethylene-vinyl acetate copolymers, butadiene-styrene-methyl vinyl pyridine terpolymers, chlorosulphonated ethylene-propylene copolymers, brominated butyl rubber, polycondensation products of sodium polysulphide with a dihaloalkane, and products obtained by grafting maleic acid or maleic anhydride onto an olefinic polymer or copolymer.

3,374,199

NON-BLOCKING POLYOLEFIN COMPOSITIONS

Hardy E. Ross and Kenneth C. Finster, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 177,206, Mar. 5, 1962. This application Nov. 1, 1965, Ser. No. 505,987
6 Claims. (Cl. 260—41)

A film-forming composition having a reduced tendency to blocking comprising a resinous olefin polymer and between about 0.02 and about 0.5 percent by weight based on the composition of finely divided calcium carbonate particles of a size within the range greater than 1 micron and up to about 100 microns.

3,374,200

FLAME RETARDANT POLYACRYLATE RESINS

William George Deichert, Flushing, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 23, 1966, Ser. No. 551,946
10 Claims. (Cl. 260—45.75)

Polyacrylate resins are made resistant to burning and water-induced haziness by incorporating a stannic halide and a member of the group consisting of oxalic acid, zinc acetate and trichloroacetic acid.

3,374,201

POLYESTERS FROM A MIXTURE OF DIFFERENT AROMATIC DICARBOXYLIC ACIDS

Maria V. Wiener, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 13, 1964, Ser. No. 351,834
16 Claims. (Cl. 260—47)

Polyester which has good cut-through resistance is prepared from (a) terephthalic acid, isophthalic acid, 2,6- or 2,7- or 1,5-naphthalene dicarboxylic acid, 4,4′-diphenyl dicarboxylic acid,

$$HOOC.C_6H_4.(CH_2)_n.C_6H_4.COOH$$

or

$$HOOC.C_6H_4.O.(CH_2)_n.O.C_6H_4.COOH$$

in which n is 1 to 4, (b) a diol and (3) an hydroxy-di-acid, 15 to 50 mol percent of all of the acid being hydroxy di-acids.

3,374,202

HOMOPOLYMERIC AND COPOLYMERIC ESTERS OF DUROHYDROQUINONE

Eckhard Christian August Schwarz, Grifton, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,697
8 Claims. (Cl. 260—47)

Linear polymeric esters derived from at least one organic dicarboxylic acid and an organic diol constituent which is wholly or in part durohydroquinone. Fibers of these polymeric esters exhibit high modulus and high recovery.

3,374,203

TRIGLYCIDYL ETHERS AND RESINS OF TRIHYDROXYBIPHENYLS

Seymour Schmukler, Dalton, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Mar. 25, 1965, Ser. No. 442,813
4 Claims. (Cl. 260—47)

Triglycidyl ethers and epoxy resins formed from tetra-substituted trihydroxybiphenyls.

3,374,204

PROCESS FOR PREPARING HIGH MOLECULAR WEIGHT POLYHYDROXY-POLYETHER RESINS

John E. Masters and Herbert P. Price, Louisville, Ky., assignors to Celanese Coatings Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 281,356, May 17, 1963. This application Feb. 2, 1967, Ser. No. 613,426
5 Claims. (Cl. 260—47)

Soluble, fusible polymeric polyhydroxy-polyether resins prepared by reacting a mono(hydroxyaliphatic) monoglycidyl diether of a dihydric phenol with a boron trifluoride type catalyst.

3,374,205

PRODUCTION OF PERACETIC ACID

Anthony Rustin and Louis C. S. Fernandes, Shawinigan, Quebec, Canada, assignors to Shawinigan Chemicals Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed Dec. 30, 1964, Ser. No. 422,446
9 Claims. (Cl. 260—502)

A method for the production of stable, crude peracetic acid solutions by organic liquid phase oxidation of acetaldehyde in the presence of a manganese salt as catalyst. Manganese salts also catalyze an extremely rapid decomposition of product peracetic acid; this decomposition is retarded sufficiently by the addition of water to the crude product mixture to enable more permanent methods of stabilization to be carried out.

3,374,206

POLYCONDENSING A DIENE WITH POLYTHIOFORMALDEHYDE

Bernard Gourdon, Pau, Basses-Pyrenees, France, assignor to Societe Nationale des Petroles d'Aquitaine, Paris, France

No Drawing. Filed Mar. 2, 1965, Ser. No. 436,682
Claims priority, application France, Mar. 4, 1964, 966,001
11 Claims. (Cl. 260—73)

1. A method for the preparation of diene polymers containing thiomethylene groups, which comprises reacting a conjugated aliphatic diene having from 4 to 30 carbon atoms with a polythioformaldehyde of the formula $HS(CH_2S)_nH$, wherein n is an integer from 2 to 8, in the proportion of from 0.1 to 10 moles of the polythioformaldehyde reactant per mole of the diene reactant and in the presence of a free radical polymerization catalyst, by maintaining the mixture of such materials at temperatures of from 20° to 80° C. until the rubbery polymer product is formed.

3,374,207

CONTINUOUS PROCESS FOR THE EXTRACTION OF MONOMERS AND OLIGOMERS FROM HIGHLY POLYMERIZED CAPROLACTAM GRANULES

Kaspar Ryffel and Walter Zehnder, Ems, Switzerland, assignors to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland

Continuation-in-part of application Ser. No. 859,528, Dec. 14, 1959. This application Nov. 12, 1964, Ser. No. 412,282
5 Claims. (Cl. 260—78)

A process for the extraction of monomers and oligomers from highly polymerized poly-E-caprolactam granules and recovery for re-use. The granulated polymer containing the monomers and oligomers is caused to slide through a vertical tube and is contacted by an extractant in countercurrent.

3,374,208

PREPARATION OF POLYESTERS FROM ALKYLENE OXIDES AND DICARBOXYLIC ACID ANHYDRIDES

Jerome A. Seiner, Pittsburgh, and Earl E. Parker, Allison Park, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 19, 1962, Ser. No. 231,767
1 Claim. (Cl. 260—78.4)

1. A method of forming a polyester which comprises reacting an anhydride of a dicarboxylic acid with an alkylene oxide selected from the class consisting of ethylene oxide, propylene oxide and butylene oxide, in the substantial absence of water and in the presence of (1) a glycol, and (2) a catalyst which is a metal compound in which the cationic portion thereof is selected from the class consisting of zinc, tin, manganese, lead, nickel, cobalt and cadmium, and in which the anionic portion is selected from the class consisting of oxygen, chlorine, acetate, butyrate, phosphate, nitrate, stearate, oleate and naphthenate.

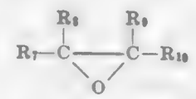
3,374,209

THERMOSETTABLE COMPOSITIONS CONTAINING POLYANHYDRIDE AND MONO-OXIRANE COMPOUNDS AND PROCESS OF MAKING

Russell G. Hay, Gibsonia, Stanley M. Hazen, Cheswick, and William J. Heilman, Allison Park, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 22, 1964, Ser. No. 424,470
24 Claims. (Cl. 260—78.4)

1. A new composition capable of being thermoset to a solid infusible resin having a network of ester and ether linkages, said ester linkages being formed through the interaction of anhydride and epoxide groups and said ether linkages being formed through the interaction of epoxide groups, said composition consisting essentially of a liquid solution at room temperature of a mixture of a solid compound containing at least two succinic anhydride groups in which the carbon atoms alpha to the carbonyl groups in the succinic anhydride groups are connected to each other through a single bond and a liquid mono-oxirane compound containing as its only functional group a single oxirane oxygen atom, and having the general formula:



wherein R_7, R_8 and R_9 are selected from the group consisting of hydrogen, a saturated hydrocarbon radical; an

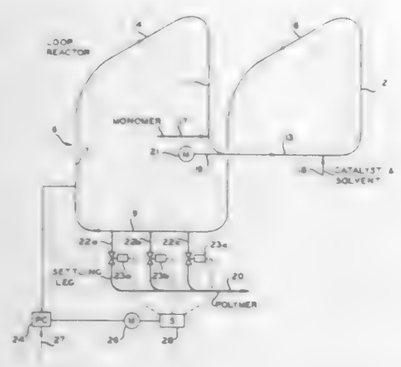
unsaturated hydrocarbon radical; a substituted saturated hydrocarbon radical; a substituted unsaturated hydrocarbon radical; and —OR, where R is a hydrocarbon radical and R_{10} is selected from the group consisting of a saturated hydrocarbon radical; an unsaturated hydrocarbon radical; a substituted saturated hydrocarbon radical; a substituted unsaturated hydrocarbon radical; and —OR, where R is a hydrocarbon radical, and wherein the unsaturation in said hydrocarbon radicals is such that the unsaturated mono-oxirane will not homopolymerize.

3,374,210
SULFONATED AROMATIC RESINS
N. William Muller, Clarendon Hills, Ill., and Harlan E. Tarbell, Elizabethton, Tenn., assignors, by mesne assignments, to Grefco, Inc., Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Sept. 20, 1965, Ser. No. 488,763
11 Claims. (Cl. 260—79.3)

Flame retarding sulfonated polyaromatic resins containing from 0.5 to 18% by weight of combined sulfuric acid, are prepared by adding gradually, with mixing, to a molten or dissolved PR resin, a solution of a sulfonating agent in an inert liquid which is preferably a lower mononitroalkane, and heating the mixture at 60° to 150° C. until all the sulfonating agent has reacted. The weight ratio of the sulfonated agent to the solvent should be within 3:2 to 1:2.

PR resins are asphalt-like residues containing a large proportion of polynuclear aromatic compounds, obtained from catalytic or thermal cracking of naphthas having an A.P.I. gravity of 40 to 60, to a product that is predominantly ethylene.

3,374,211
SOLIDS RECOVERY FROM A FLOWING STREAM
Stanley J. Marwil, Bartlesville, Okla., and Robert G. Wallace, Tokyo, Japan, assignors to Phillips Petroleum Company, a corporation of Delaware
Filed July 27, 1964, Ser. No. 385,423
2 Claims. (Cl. 260—88.2)



Removal of settled polymer from a polymerization system in a concentrated state without objectionable string formation is provided by (1) reducing the jacket coolant temperature on the settling leg by employing high coolant flow rate and low temperature difference between the coolant and the slurry; (2) providing a product settling zone having a predetermined length to internal diameter ratio; (3) providing a controlled pressure drop across the product discharge valve at the lower end of the settling leg of 20 to 45 p.s.i.g.; (4) using an instantaneous back pressure on the downstream side of the discharge valve of 100 to 200 p.s.i.g.; and (5) utilizing in the settling leg a heated flush medium to prevent precipitation of soluble polymer and to decrease the monomer solubility therein.

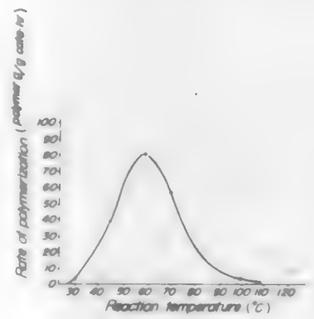
3,374,212
PURIFICATION OF POLYMERIZED OLEFINS PREPARED WITH CATALYSTS CONTAINING VANADIUM COMPOUNDS
Michael J. Marinak and George S. Fujioka, Walnut Creek, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 12, 1965, Ser. No. 471,432
7 Claims. (Cl. 260—88.2)

1. A process for removing colored vanadium constituents in catalyst residues contained in a polymer of an olefinic compound polymerized with a catalyst formed by admixing an organo-metallic reducing compound with a reducible vanadium compound, which process comprises first treating the polymer containing said catalyst residues with a solution of an oxidizing agent at a pH below 9 in an amount sufficient to oxidize the vanadium constituent to the vanadium V state and then converting the oxidized vanadium constituent to the vanadate salt form with a solution of an alkaline compound at a pH between about 9 to about 14.

3,374,213
POLYPROPYLENE POLYMERIZATION PROCESS
Donald F. Hoeg, Mount Prospect, Ill., assignor, by mesne assignments, to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Nov. 2, 1962, Ser. No. 235,122
3 Claims. (Cl. 260—88.2)

1. The process for polymerizing propylene so as to obtain a solid polymer product having decreased low temperature brittleness which comprises polymerizing the propylene feed with a stereo-specific catalyst system of titanium trichloride/triethyl aluminum, the titanium trichloride having the formula $3TiCl_3 \cdot AlCl_3$ in the presence of from 5 to 15 volume percent of ethylene based on propylene at a temperature above 100° C.

3,374,214
PROCESS FOR POLYMERIZING PROPYLENE USING A SOLID TERNARY CATALYST OF TITANIUM, ANTIMONY AND ALUMINUM
Itsuho Aishima and Yukichi Takashi, Nobeoka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Nov. 26, 1963, Ser. No. 326,079
Claims priority, application Japan, Jan. 24, 1962, 37/52,844; May 22, 1963, 38/25,533; May 24, 1963, 38/26,267
26 Claims. (Cl. 260—93.7)



A process for the polymerization of propylene in the presence of a catalyst which contains no free aluminum trialkyl or alkyl aluminum halide and contains titanium, aluminum and antimony in an atomic ratio of

1:0.05–0.5:0.001–0.1

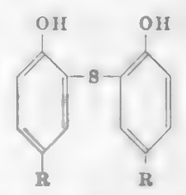
The catalyst is prepared by first reacting titanium trichloride with SbR_5, $SbAlR_8$, $SbAl_2R_{11}$ or

$[SbR_4][Al_mR_nX_{3m-n+1}]$

in an inert reaction medium at a temperature between room temperature and 150° C., removing the inert reaction medium from the solid part of the resulting product and then reacting the solid part with an aluminum trialkyl at a temperature between 30° C. and 100° C., separating the resulting solid product from the liquid phase at room temperature and washing the solid product with a hot aromatic hydrocarbon to remove therefrom any organoaluminum compounds, and thereby render the solid product free of aluminum trialkyl or alkyl aluminum halide.

3,374,215
SYNTHETIC POLYMER COMPOSITIONS HAVING A PARTICULAR RECEPTIVITY TO DYESTUFFS AND A PROCESS FOR PREPARING THEM
Vittorio Cappuccio, Terni, and Salvatore Algieri, Rome, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
Filed Sept. 13, 1965, Ser. No. 486,622
Claims priority, application Italy, Sept. 16, 1964, 19,867/64
6 Claims. (Cl. 260—93.7)

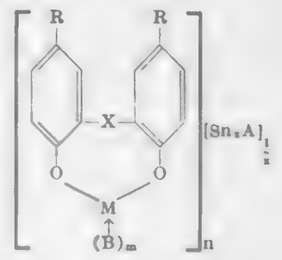
1. A polyolefin composition having a good dyeability and fastness with dispersed dyestuffs and chelating dyestuffs comprising a polyolefin and from about 0.1–10% by weight based on said polyolefin of a compound of a metal of Group II-B with a phenol sulfide of the formula



wherein R is a member selected from the group consisting of hydrogen, a straight alkyl radical having 1 to 20 carbon atoms and a branched alkyl radical having 1 to 20 carbon atoms.

3,374,216
DYEABLE POLYPROPYLENE FIBERS
Kazuo Senda, Akira Ichikawa, Takao Ohzeki, Eiji Nakajima, Minoru Sasaki and Akihiko Yasui, Ohtake-shi, and Masahiro Hirose, Yamaguchi-ken, Japan, assignors to Mitsubishi Rayon Co., Ltd., Tokyo, Japan
Filed Dec. 20, 1965, Ser. No. 515,041
Claims priority, application Japan, Dec. 22, 1964, 39/72,301; May 12, 1965, 40/27,746
4 Claims. (Cl. 260—93.7)

1. Dyeable polypropylene fibers containing an intermolecular compound of nickel or zinc phenolate and organo tin compound, represented by the general formula



(I)

wherein R is an alkyl radical having 1 to 18 carbon atoms, X is a member selected from the group consisting of S, SO and SO_2, M is a member selected from the group consisting of Ni and Zn, B is a member selected from the group consisting of H_2O, NH_3, aliphatic amines, aromatic amines and nitrogen containing cyclic aromatic compounds, *m* is zero or an integer of 1 to 2, *n* is an integer of 1 to 4, and $[Sn_xA]$ is a tin compound, selected from the compounds represented by subsequent general formulae of (II)–1 to (II)–9;

$$R_2Sn{=}O \text{ or } R_3SnOH \qquad \text{(II)–1}$$

wherein R is a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl and aralkyl radicals, having 1 to 18 carbon atoms;

$$R_aSn(OCOR')_b \qquad \text{(II)–2}$$

wherein R is a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl and aralkyl radicals, having 1 to 18 carbon atoms, R′ is hydrogen or a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl, aralkyl, alkylene, cycloalkylene, arylene, alkylarylene and aralkylene radicals, having 1 to 18 carbon atoms, and *a* and *b* are integers of 1 to 3 which satisfy $a+b=4$;

$$R_aSn(OCOR'COOR'')_b \qquad \text{(II)–3}$$

wherein R is a member seected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl, and aralkyl radicals, having 1 to 18 carbon atoms, R′ is a member selected from the group consisting of alkylene, cycloalkylene, arylene, alkylarylene and aralkylene radicals, having 1 to 18 carbon atoms, R″ is a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl and aralkyl radicals, having 1 to 18 carbon atoms and *a* and *b* are an integer of 1 to 3 which satisfy $a+b=4$;

$$R_aSn(OCOR'CONHR'')_b \qquad \text{(II)–4}$$

wherein the same significances in the general formula of (II)–3 are given for R, R′, R″, *a* and *b*;

$$R'COOSn(R)_2{-}O{-}Sn(R)_2OCOR' \qquad \text{(II)–5}$$

wherein R is a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl and aralkyl radicals, having 1 to 18 carbon atoms, R′ is hydrogen or a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl and aralkyl radicals, having 1 to 18 carbon atoms, or a member selected from the group consisting of monoester residues of aliphatic and aromatic dicarboxylic acid radicals, having 1 to 18 carbon atoms;

$$R_aSn(OR')_b \qquad \text{(II)–6}$$

wherein R is a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl, and aralkyl radicals, having 1 to 18 carbon atoms, R′ is a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl, and aralkyl radicals or a member selected from the group consisting of monoester residues of aliphatic and aromatic oxycarboxylic acid radicals and *a* and *b* are an integer of 1 to 3 which satisfy $a+b=4$;

$$R_3SnOSnR_3 \qquad \text{(II)–7}$$

wherein R is a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl and aralkyl radicals, having 1 to 18 carbon atoms;

$$R_2Sn(OR')(OCOR'') \qquad \text{(II)–8}$$

wherein R is a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl and aralkyl radicals, having 1 to 18 carbon atoms, R′ is a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl and aralkyl radicals, having 1 to 18 carbon atoms, and R″ is a member selected from the group consisting of aliphatic and aromatic dicarboxylic monoester residual radicals, having 1 to 18 carbon atoms;

$$R_2Sn(A)_2 \qquad \text{(II)–9}$$

wherein R is a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl and aralkyl radicals, having 1 to 18 carbon atoms, A is a 1,3 - dicarbonyl compound, and small *x* is dependent on the number of Sn atoms in the Formulas (II)–1 to (II)–9.

3,374,217

ISOLATION OF RESIN ACID MIXTURES RICH IN LEVOPIMARIC ACID

Hugh B. Summers, Jr., Lake City, Fla., Winston D. Lloyd, El Paso, Tex., and Glen W. Hedrick, Lake City, Fla., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed June 23, 1964, Ser. No. 377,424

7 Claims. (Cl. 260—109)

1. A process for treating pine gum containing (1) rosin comprising nonacidic components and abietic-type resin acids including levopimaric acid, (2) turpentine, (3) an amount of water not in excess of about three weight percent, and (4) acetone-insoluble solids, to recover said abietic-type resin acids rich in levopimaric acid and in essentially pure form, said process comprising:

(a) treating the pine gum with acetone at ambient temperature to dissolve the resin acids;

(b) filtering the acetone solution in the substantial absence of air to remove solids;

(c) heating the filtered acetone solution to a gentle reflux of about 56° C.;

(d) slowly adding an acetone solution containing at least one mole of 2-amino-2-methyl-1-propanol per mole of said resin acids to the gently refluxing solution of step (c) to thereby precipitate the resin acids as acid-amine salts, said acetone solution of 2-amino-2-methyl-1-propanol comprising equal quantities by weight of the amine and acetone solvent;

(e) cooling the resulting mixture of step (d) to from about 5° to 10° C. and filtering said mixture to obtain (1) a filter cake consisting essentially of a small amount of turpentine, and the bulk of the precipitated resin acids-amine salts, and (2) a filtrate comprising an acetone solution of the nonacidic components of the resin, the acetone-soluble resin acids-amine salts, any excess of the added free amine, water, and all the turpentine except for the small residual amount retained by the filter cake;

(f) reslurring the filter cake of step (e) in about from 1.7 to 2.5 liters of fresh acetone per mole of the resin acids to dissolve the residual turpentine;

(g) filtering the slurry of step (f) to obtain (1) a filter cake consisting essentially of the resin acids-amine salts free from the turpine, and (2) a filtrate comprising an acetone solution of the residual turpentine;

(h) drying the filter cake of step (g);

(i) purifying the resin acids-amine salts contained in the dried filter cake of step (h) by treating the filter cake with methanol at a temperature ranging from about 15° to 65° C. and recovering from the resulting mixture a product consisting essentially of the resin acids-amine salt containing about 33% of the levopimaric acid-amine salt;

(j) drying the purified product of step (i);

(k) enriching the dried purified product of step (j) in the levopimaric acid-amine salt by reslurrying the product in methanol not less than one time and not more than four times, the slurry in each instance being filtered after each slurrying and the final filter cake being dried after the last slurrying, thereby to obtain a filter cake of the resin acids-amine salts containing about from 65 to 95 weight percent of the levopimaric acid-amine salt;

(l) recovering the levopimaric acid from the purified and enriched filter cake of step (k) by redissolving the filter cake in methanol to produce a methanol solution wherein the weight percent of the resin acids-amine salt in the methanol ranges about from 3 to 5 weight percent, and then passing the methanol solution through a bed of a weakly-acidic ion exchange resin to decompose the acid-amine salts and obtain a methanol solution of the free resin acids rich in levopimaric acid, and an ion exchange resin-amine; and thereafter

(m) recovering the mixed resin acids, rich in levopimaric acid, from the methanol solution of these acids, by evaporating the methanol.

3,374,218

PROTECTED DERIVATIVES OF PHYSALAEMIN

Luigi Bernardi, Germano Bosisio, Roberto de Castiglione, and Onofrio Goffredo, Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed Feb. 11, 1965, Ser. No. 432,008

Claims priority, application Italy, Feb. 12, 1964, 3,105/64

2 Claims. (Cl. 260—112.5)

1. The protected undecapeptide of the structure L-pyroglutamyl - L-alanyl-L-aspartyl-L-prolyl-L-asparaginyl-L - lysyl-L-phenylalanyl-L-tyrosyl-glycyl-L-leucyl-L-methioninamide having the imino group of the pyroglutamyl radical and the ε-amino group of the lysyl radical blocked by a protecting group selected from the group consisting of trityl, tosyl, phthalyl, carbobenzoxy, carbo-t-butoxy, trifluoroacetyl, formyl and the β-carboxyl group of the aspartyl radical blocked by a protecting group selected from the group consisting of methyl, ethyl, t-butyl, benzyl, and p-nitrophenyl.

3,374,219

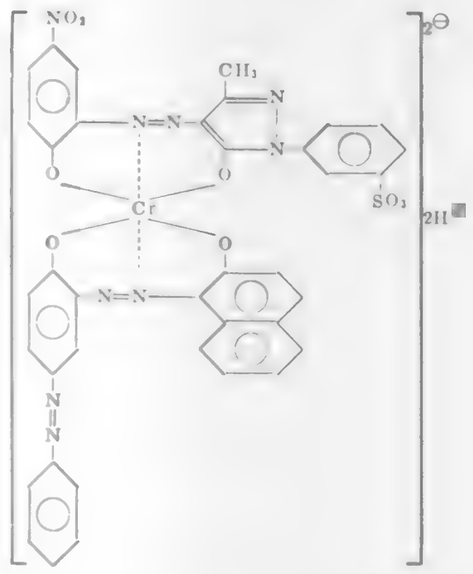
CHROMIUM - CONTAINING DYESTUFFS CONTAINING A MONOAZO AND A DIAZO DYESTUFF

Walter Biedermann and Eginhard Steiner, Basel, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed Dec. 16, 1964, Ser. No. 418,867

1 Claim. (Cl. 260—145)

The chromium-containing azo dyestuff, which in its free acid form has the formula



and dyes natural and synthetic polyamide fibers in brown shades of very good fastness properties.

3,374,220

PYRIDAZINE MONOAZO DYESTUFFS

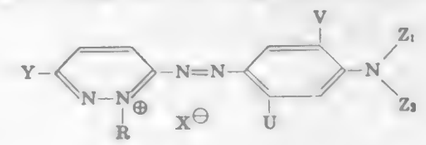
Gilbert Victor Henri Kremer, Ernont, and Robert Frederic Michel Sureau, Enghien-les-Bains, France, assignors to Etablissements Kuhlmann, Paris, France

No Drawing. Filed Feb. 24, 1965, Ser. No. 435,045

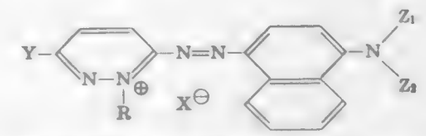
Claims priority, application France, Feb. 28, 1964, 965,493

3 Claims. (Cl. 260—154)

Dyestuffs having one of the general formulae:



and



in which Y represents a member selected from the group consisting of chlorine, and bromine atoms, the phenoxy group and alkoxy groups having up to 3 carbon atoms, R is a member selected from the group consisting of the methyl and ethyl groups, $X^{\ominus}$ represents a monovalent anion, Z_1 and Z_2 each represents a member selected from the group consisting of the hydrogen atom and the methyl and ethyl groups, U represents a member selected from the group consisting of the hydrogen atom and the methyl, methoxy, ethoxy and acetylamino groups, and V represents a member selected from the group consisting of the hydrogen atom and the methoxy and ethoxy groups.

3,374,221

BASIC DYES

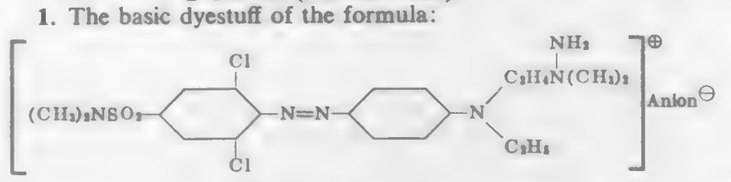
Roland Entschel and Curt Mueller, Basel, and Walter Wehrli, Riehen, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Original application Feb. 13, 1964, Ser. No. 344,557. Divided and this application June 2, 1966, Ser. No. 554,695

Claims priority, application Switzerland, Apr. 21, 1961, 4,709/61; Jan. 12, 1962, 359/62; Apr. 24, 1962, 4,898/62

2 Claims. (Cl. 260—205)

1. The basic dyestuff of the formula:



3,374,222

SEPARATING LEVOGLUCOSAN AND CARBOHYDRATE DERIVED ACIDS FROM AQUEOUS MIXTURES CONTAINING THE SAME BY TREATMENT WITH METAL COMPOUNDS

Quintin P. Peniston, Bainbridge Island, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Continuation-in-part of application Ser. No. 325,658, Nov. 22, 1963. This application July 6, 1965, Ser. No. 471,502

14 Claims. (Cl. 260—209)

1. The process of separating aqueous mixtures containing dissolved levoglucosan and carbohydrate derived acids, the process comprising:

(a) adding to the mixture at least the equivalent amount with reference to the acid content thereof, of either an alkaline earth, aluminum, lead or zinc compound forming water insoluble salts of the acids,

(b) separating the resulting water insoluble carbohydrate derived acid salts from the resulting aqueous solution of levoglucosan,

(c) concentrating the aqueous solution of levoglucosan,

(d) and crystallizing from the concentrated solution a solid, crystalline, levoglucosan product.

3,374,223

CRYSTALLINE SODIUM 5'-GUANYLATE PENTAHYDRATE AND METHOD OF PRODUCING THE SAME

Saburo Senoo, Tokyo, Toshio Kato, Omiya-shi, and Kenji Sato, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Oct. 19, 1964, Ser. No. 409,344

Claims priority, application Japan, Oct. 19, 1963, 38/55,684

4 Claims. (Cl. 260—211.5)

1. A method for producing crystalline barium 5'-guanylate pentahydrate comprising cooling a hot aqueous solution of barium 5'-guanylate to a temperature in a range from 50° C. to the freezing point of said solution to form a supersaturated solution of barium 5'-guanylate pentahydrate, adding seed crystals of barium 5'-guanylate pentahydrate to the thusly formed supersaturated solution, and maintaining the supersaturated solution at the said temperature range to separate crystalline barium 5'-guanylate pentahydrate.

3,374,224

NOVEL PREPARATION OF CARBOXYMETHYL CELLULOSE

Roy W. Sommers, Pennsville, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 28, 1964, Ser. No. 421,340

7 Claims. (Cl. 260—231)

An alkali metal salt of carboxymethyl cellulose which forms clear aqueous solutions containing gell particles which are insoluble in 5% sodium hydroxide at room temperature but soluble above about 80° C., having a degree of etherification between about 0.4 to 1.3 and being characterized by an infrared adsorption band between 5.7 and 5.9 microns. The alkali metal salt is prepared by reacting alkali cellulose with an etherifying agent containing 2 to 20 mole percent dichloroacetic acid and the balance being monochloroaectic acid. The etherification reaction can be conducted in a slurry medium or by a dry mix procedure.

3,374,225

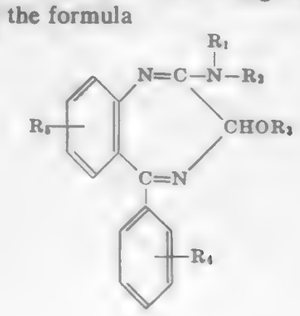
AMINOBENZODIAZEPINE COMPOUNDS AND METHODS

Earl Reeder, Nutley, Arthur Stempel, Teaneck, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 240,750, Nov. 28, 1962. This application Mar. 28, 1963, Ser. No. 268,553

8 Claims. (Cl. 260—239)

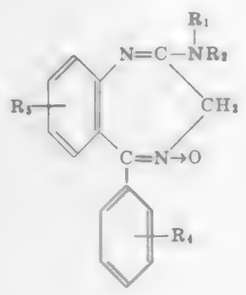
1. A compound selected from the group consisting of compounds of the formula



and their pharmaceutically acceptable salts,

wherein R_1 is selected from the group consisting of hydrogen and lower alkanoyl; R_2 is selected from the group consisting of hydrogen and lower alkyl; R_3 is selected from the group consisting of hydrogen, lower alkyl, lower alkanoyl, and benzoyl; R_4 is selected from the group consisting of hydrogen, halogen, lower alkoxy and trifluoromethyl; R_5 is selected from the group consisting of hydrogen, halogen, trifluoromethyl, nitro, lower alkylthio and lower alkyl.

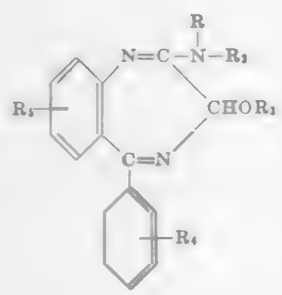
8. A method which comprises reacting a compound of the formula



wherein

R_1 is selected from the group consisting of hydrogen and lower alkanoyl, R_2 is selected from the group consisting of hydrogen and lower alkyl, R_4 is selected from the group consisting of hydrogen, chlorine, fluorine, methoxy and trifluoromethyl and R_5 is selected from the group consisting of hydrogen, chlorine, bromine, trifluoromethyl and nitro

with an acylating agent selected from the group consisting of lower alkanoyl anhydride, benzoyl anhydride, lower alkanoyl halide and benzoyl halide and recovering compounds having the formula



wherein

R_1 is selected from the group consisting of hydrogen and lower alkanoyl, R_3 is selected from the group consisting of lower alkanoyl and benzoyl and R_2, R_4 and R_5 have the same meaning as above.

3,374,226
17 - ETHERS OF 17α - HALOETHYNYL - 17β-HYDROXY - 19 - NOR - 4,9 - ANDROSTADIENE-3-ONES

John Fried, Palo Alto, Calif., and Thomas F. Bry, Linden, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 234,204, Oct. 30, 1962. This application Oct. 18, 1965, Ser. No. 497,463

15 Claims. (Cl. 260—239.5)

15. 17α - chloroethynyl-19-nor-4,9-androstadiene-17β-pyrrolidyl ethyl ether.

3,374,227
SULFONAMIDES

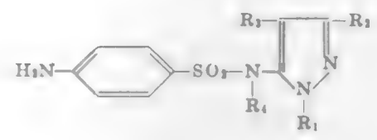
Paul Schmidt, Therwil, Ernst Schweizer and Kurt Eichenberger, Basel, and Max Wilhelm, Allschwil, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,678

Claims priority, application Switzerland, Jan. 10, 1963, 342/63; Nov. 5, 1963, 13,597/63

19 Claims. (Cl. 260—239.9)

1. A member selected from the group consisting of compounds of the formula



in which R_1 stands for a member selected from the group consisting of lower alkyl, lower alkoxy-lower alkyl, halogeno-lower alkyl, phenyl, lower alkyl-phenyl, lower alkoxy - phenyl, halogenophenyl, trifluoromethylphenyl, cyclo-lower alkyl and lower alkyl-cyclo-lower alkyl, R_2 for lower alkoxy-lower alkyl, R_3 for a member selected from the group consisting of hydrogen, lower alkyl and lower alkoxy and R_4 for a member selected from the group consisting of hydrogen, alkanoyl containing 1 to 16 carbon atoms, phenyl-lower alkanoyl, benzoyl, alkali metals, alkaline earth metals and earth metals and their formaldehyde condensation products obtained by reacting about 1 mol formaldehyde with about 1–2 mols sulfonamide.

3,374,228
14β-ESTRA-1,3,5(10)-TRIENES

John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Oct. 25, 1965, Ser. No. 505,191

4 Claims. (Cl. 260—239.55)

3-tetrahydropyranyloxy- and/or 17α-tetrahydropyranyloxy-18-methyl-14β-estra-1,3,5(10)-trienes, optionally substituted at C-3 with hydroxy or alkoxy, or at C-17α with hydroxy or an ester thereof, and at C-17β with hydrogen, (lower)alkyl, (lower)alkenyl, (lower)alkynyl or halo (lower)alkylnyl, are estrogenic agents.

3,374,229
3-OXO-5α,10α-DIHYDROXYESTRANE COMPOUNDS

Kanzo Sasaki, Osaka-shi, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Dec. 22, 1965, Ser. No. 515,758

Claims priority, application Japan, Dec. 29, 1964, 39/74,388

8 Claims. (Cl. 260—239.55)

Hypocholesteremic 3-oxo-5α,10α-dihydroxyestranes are prepared by the action of an agent which is generally used for α-cis-glycol formation from a double bond on 3-protected-oxo-estr-5(10)-enes, followed by hydrolysis of ketal group.

3,374,230
ACETYLATION OF STEROIDAL ALCOHOLS WITH KETENE

John N. Gardner, Wayne, and Hershel L. Herzog, Glen Ridge, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 26, 1966, Ser. No. 545,243

6 Claims. (Cl. 260—239.55)

1. The process for acetylating a tertiary steroidal alcohol which comprises contacting said tertiary steroidal alcohol with ketene in a basic medium comprising a member selected from the group consisting of alkali metal alkoxides, alkali metal amides and alkali metal hydrides in an inert organic solvent.

3,374,231
HYDRAZONES OF 1-AMINO-4-(XANTHENYL AND THIOXANTHENYL)PIPERAZINES

John W. Cusic, Skokie, and Peter Yonan, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 293,137, July 5, 1963. This application June 14, 1965, Ser. No. 463,929

Claims priority, application Great Britain, June 17, 1964, 25,131

15 Claims. (Cl. 260—240)

Hydrazones derived from 1-amino-4-(xanthenyl and thioxanthenyl)piperazines and a wide variety of aldehydes and ketones are described herein. These hydrazones are useful as anti-ulcer agents which do not possess anti-acetylcholine activity. They are usually prepared by the reaction of an aminopiperazine with an aldehyde or ketone.

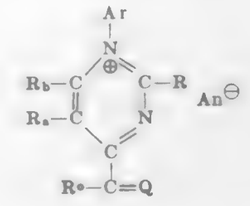
3,374,232
N-ARYL PYRIMIDINIUM COMPOUNDS

George de Stevens, Summit, Herbert Morton Blatter, Millburn, and Richard William James Carney, Murray Hill, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 11, 1964, Ser. No. 351,230

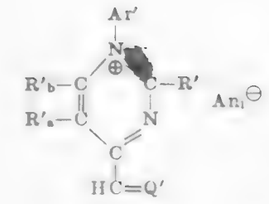
12 Claims. (Cl. 260—240.7)

6. A compound of the formula



in which Ar stands for a member selected from the group consisting of phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogen)-phenyl, (lower alkylmercapto)-phenyl, (trifluoromethyl)-phenyl, (nitro)-phenyl and (di-lower alkylamino)-phenyl, each of R and R_b for a member selected from the group consisting of lower alkyl, lower alkenyl, cycloalkyl and cycloalkyl-lower alkyl having from three to eight ring members, phenyl-lower alkyl, phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl, (lower alkylmercapto)-phenyl, (trifluoromethyl)-phenyl, (nitro)-phenyl and (di-lower alkylamino)-phenyl, R_o for a member selected from the group consisting of lower alkyl, lower alkenyl, cycloalkyl and cycloalkyl-lower alkyl having from three to eight ring members, and phenyl-lower alkyl, Q for a member selected from the group consisting of 1-R_1-2-pyridylidene, 1-R_1-4-pyridylidene, 1-R_1-2-quinolylidene, 1-R_1-4-quinolylidene, 2-R_1 - 1 - isoquinolylidene, 3-R_1-2-thiazolylidene, 3-R_1-2-benzothiazolylidene, 3-R_1-oxazolylidene, 3-R_1-2-benzoxazolylidene, 1,3,3-tri-R_1-2-indolylidene, in which R_1 stands for lower alkyl, and those radicals having a member selected from the group consisting of lower alkyl, lower alkoxy, halogeno, lower alkylmercapto, trifluoromethyl, nitro and di-lower alkylamino as substituent, R_a for a member selected from the group consisting of carboxy, carbo-lower alkoxy, cyano, carbamyl, lower alkylcarbamyl, di-lower alkylcarbamyl, lower alkanoyl and benzoyl and $An^{\ominus}$ for a member selected from the group consisting of the hydroxyl ion and the anion of a pharmaceutically acceptable acid.

7. A compound of the formula



in which Ar' is a member selected from the group consisting of phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl, (lower alkylmercapto)-phenyl and (nitro)-phenyl, R' is a member selected from the group consisting of the lower alkyl, phenyl, (lower alkyl)-phenyl, (lower alkoxy) - phenyl, (halogeno) - phenyl, (lower alkylmercapto)-phenyl and (nitro)-phenyl, Q' is a member selected from the group consisting of 1-R_1-2-pyridylidene, 1-R_1-4-pyridylidene, 1-R_1-2-quinolylidene, 1-R_1-4-quinolylidene, 2-R_1 - 1 - isoquinolylidene, 3-R_1-2-thiazolylidene, 3-R_1-2-benzothiazolylidene, 3-R_1-2-oxazolylidene, 3-R_1-2-benzoxazolylidene, 1,3,3-tri-R_1-2-indolylidene, in which R_1 stands for lower alkyl, and those radicals having a member selected from the group consisting of lower alkyl, lower alkoxy, halogeno, lower alkylmercapto, trifluoromethyl, nitro and di-lower alkylamino as substituent, R'_a is a member selected from the group consisting of carbo-lower alkoxy, cyano, lower alkanoyl and benzoyl, R'_b is a member selected from the group consisting of lower alkyl and phenyl, and $An_1^{\ominus}$ is the anion of a hydrohalic acid.

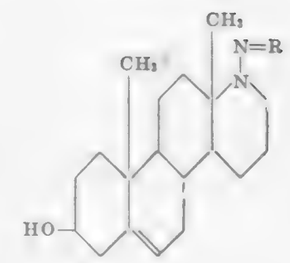
3,374,233
N-AMINO-17a-AZA-D-HOMOANDROST-5-EN-3β-OL AND HYDRAZONES THEREOF

Robert W. Hamilton, Wilmette, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 3, 1964, Ser. No. 387,229

7 Claims. (Cl. 260—240)

1. A compound of the formula



wherein R is selected from the group consisting of the following radicals: ethylidine, isopropylidene, cyclopentylidene, cyclohexylidene, benzylidene, chlorobenzylidene, 3,4-methylenedioxybenzylidene, naphthylmethylene, 3,4 - dihydro-2(1H) - naphthylidene, and pyridylmethylene.

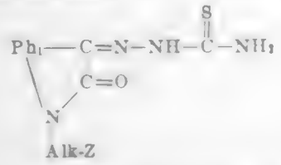
4. N - benzylideneamino - 17a - aza - D - homoandrost-5-en-3β-ol.

3,374,234
THIOSEMICARBAZONES AND PROCESS FOR THEIR MANUFACTURE

Vishwa Prakash Arya, Goregaon, Bombay, India, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed June 8, 1965, Ser. No. 462,418
Claims priority, application Switzerland, June 11, 1964, 7,607/64; Apr. 26, 1965, 5,859/65
37 Claims. (Cl. 260—247.1)

1. A member selected from the group consisting of a compound of the formula



(Ia)

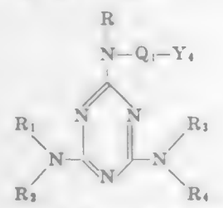
wherein Ph_1 is a member selected from the group consisting of phenylene-(1,2), (halogeno)-phenylene-(1,2) and (trifluoromethyl)-phenylene-(1,2), Alk is an alkylene radical with 1–5 carbon atoms, and Z is a member selected from the group consisting of di-lower alkylamino, N-lower alkyl-N-cycloalkyl-amino, dibenzylamino, alkyleneimino with 4 to 7 carbon atoms, a morpholino, a thiamorpholino and a piperazino group, and an acid addition salt thereof.

3,374,235
S-TRIAZINES

Denis Varsanyi, Basel, and Willy Roth, Strengelbach, Aargau, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,693
Claims priority, application Switzerland, Dec. 31, 1963, 16,070/63
1 Claim. (Cl. 260—249.6)

1. A compound of the formula



wherein each of R, R_1 and R_3 represents a member selected from the group consisting of hydrogen, alkyl, of from 1 to 20 carbon atoms, cycloalkyl of from 6 to 12 ring carbon atoms, alkenyl of from 3 to 20 carbon atoms, hydroxy-alkyl of from 2 to 20 carbon atoms, fluoro-alkyl of from 3 to 20 carbon atoms, and chloro-alkyl of from 3 to 20 carbon atoms,

R_2 represents a member selected from the group consisting of alkyl of from 1 to 20 carbon atoms, cycloalkyl of from 6 to 12 ring carbon atoms, alkenyl of from 3 to 20 carbon atoms, hydroxy-alkyl of from 2 to 20 carbon atoms, fluoro-alkyl of from 3 to 20 carbon atoms, and chloro-alkyl of from 3 to 20 carbon atoms,

R_4 represents a lipophilic radical selected from the group consisting of alkyl from 10 to 18 carbon atoms and alkenyl of from 10 to 18 carbon atoms,

Y_4 represents hydroxyl, and

Q_1 represents a divalent radical selected from the group consisting of alkylene of from 10 to 20 carbon atoms and alkylene of from 10 to 20 carbon atoms,

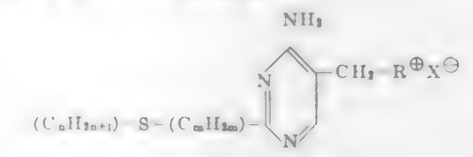
and wherein Y_4 is located at the Q_1 radical at least 4 carbon atoms remote from each of the two free bonds of Q_1.

3,374,236
QUATERNARY 5-AMMONIUMMETHYL-4-AMINO-2-ALKYLMERCAPTOALKYLENE PYRIMIDINE SALTS

Renat Herbert Mizzoni, Long Valley, and George de Stevens, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,897
9 Claims. (Cl. 260—256.5)

1. A member selected from the group consisting of a compound having the formula



in which each of n and m stands for an integer from 1 to 7, $R^{\oplus}$ stands for a member selected from the group consisting of pyridinium, quinolinium, isoquinolinium, pyridazinium, pyrimidinium, pyrazinium, thiazolinium and oxazolinium and such radical substituted by lower alkyl and $X^{\ominus}$ for the anion of a therapeutically useful acid, its sulfoxide and sulfone and a therapeutically useful acid addition salt of these compounds.

3,374,237
1-PHENYL-3-(4-PHENYL-1-PIPERAZINOALKYL)-IMIDAZOLIDINONES AND IMIDAZOLIDINETHIONES

William Blythe Wright, Jr., Woodcliff Lake, N.J., and Herbert Joseph Brabander, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 21, 1965, Ser. No. 457,862
19 Claims. (Cl. 260—268)

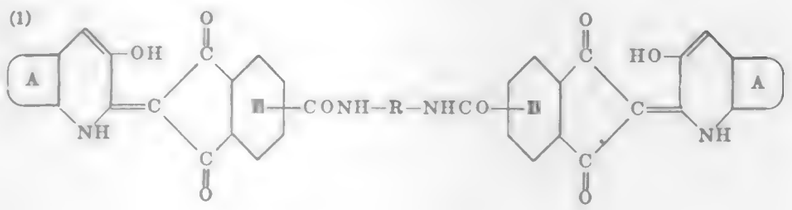
The preparation of imidazolidinones and imidazolidinethiones having a phenyl or substituted phenyl group in the 1-position and 4-phenyl or substituted phenyl-1-piperazinyl lower alkylene groups in the 3-position. The phenyl groups may have substituents such as halogen, lower alkyl, lower alkoxy or trifluoromethyl present. These compounds are useful as tranquilizers.

3,374,238
3-HYDROXYQUINOPHTHALONE DIAMIDO PIGMENTS

Arnold Wick, Therwil, and Christoph Frey, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed June 18, 1965, Ser. No. 465,157
Claims priority, application Switzerland, June 26, 1964, 8,416/64
8 Claims. (Cl. 260—287)

Pigments of the 3-hydroxyquinophthalone series of the formula



in which A represents an arylene residue, especially a benzene or naphthalene residue, R represents a direct bond or an organic residue and in which the benzene residue B may contain further substituents, for example, halogen atoms or alkoxy groups.

3,374,239
6-CHLORO-2-(5-NITRO-2-FURYL) CINCHONINIC ACID

Homer Albert Burch, Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Filed Nov. 25, 1966, Ser. No. 596,826
2 Claims. (Cl. 260—287)

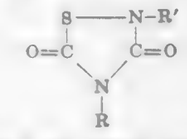
Antibacterially active 6-chloro-2-(5-nitro-2-furyl)cinchoninic acid and a method for its preparation.

3,374,240
SUBSTITUTED 1,2,4-THIADIAZOLIDIN-3,5-DIONES AND PROCESS THEREFOR

Gerhard F. Ottmann, Hamden, and Haywood Hooks, Jr., West Haven, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Continuation-in-part of applications Ser. No. 411,638, Nov. 16, 1964, and Ser. No. 427,088, Jan. 21, 1965. This application June 29, 1965, Ser. No. 468,121
4 Claims. (Cl. 260—306.7)

1. A compound of the formula



wherein R is aryl of 6–10 carbon atoms and R′ is phenyl having a lower alkoxy substituent.

3. A process for preparing substituted 1,2,4-thiadiazolidin-3,5-diones which comprises reacting S-[N′-(chlorocarbonyl)-amino] isothiocarbamyl chlorides with water and isolating the substituted 1,2,4-thiadiazolidin-3,5-diones.

3,374,241
DIPHENYLCARBAMYL DERIVATIVES OF CERTAIN AZOLES

John W. Giberson, Woodstown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Application Apr. 22, 1963, Ser. No. 274,803, now Patent No. 3,274,132, dated Sept. 20. 1966, which is a continuation-in-part of application Ser. No. 211,898, July 23, 1962. Divided and this application Feb. 23, 1966, Ser. No. 565,663
1 Claim. (Cl. 260—308)

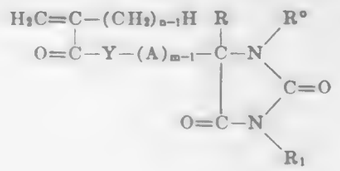
1. A compound selected from the group consisting of 1-diphenylcarbamylimidazole, 1-diphenylcarbamylbenzimidazole, and 1-diphenylcarbamyl-1,2,3-benzotriazole.

3,374,242
5-(4-ACRYLOXYALKYL)-HYDANTOINS

Everett J. Kelley, Moorestown, N.J., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 8, 1964, Ser. No. 373,486
6 Claims. (Cl. 260—309.5)

1. As a composition of matter, a compound of the formula



wherein

m is an integer having a value of 1 to 2,

n is an integer having a value of 1 to 2,

Y is selected from the group consisting of O and NH,

A is an alkylene group having 1 to 8 carbon atoms,

R is selected from the group consisting of H, benzyl, cyclohexyl, phenyl, and alkyl groups having 1 to 6 carbon atoms,

R° is selected from the group consisting of H, methylol, and alkoxymethyl groups having 2 to 5 carbon atoms, and

R^1 is selected from the group consisting of H, methylol, and alkoxymethyl groups having 2 to 5 carbon atoms.

3,374,243
B-NORSTEROIDAL PYRAZOLES

Kenneth G. Holden, Stratford, N.J., and James F. Kerwin, Broomall, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,190
8 Claims. (Cl. 260—310)

17β-hydroxy-B-norandrosteno and estreno[3,2-c]-pyrazoles, optionally substituted at the 17α-position with a methyl, ethyl, ethynyl, or methoxymethyl group, are prepared by condensation of the corresponding 2-hydroxymethylene-3-keto-Δ^4-B-norsteroid with hydrazine hydrate. The products possess antiandrogenic and cholesterol-lowering activities.

3,374,244
N-(DIALKYLAMINOALKYL)ADAMANTANECARBOXAMIDES AND RELATED COMPOUNDS

Carl Peter Krimmel, Wauconda, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 466,832, June 24, 1965. This application June 30, 1966, Ser. No. 561,707
Claims priority, application Great Britain, June 13, 1966, 26,187/66
7 Claims. (Cl. 260—326.3)

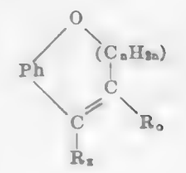
The present N-(dialkylaminoalkyl)adamantanecarboxamides and related compounds possess anti-inflammatory, anti-bacterial, anti-protozoal, anti-fungal, and anti-algal activity. The compounds are prepared by the reaction of adamantane-1-carbonyl chloride or the corresponding homoadamantane compound with a dialkylaminoalkylamine or similar compound.

3,374,245
UNSATURATED OXACYCLES

Richard William James Carney, Murray Hill, and William Laszlo Bencze, New Providence, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 1, 1964, Ser. No. 356,664
9 Claims. (Cl. 260—345.2)

Compounds of the formula



in which pH stands for an optionally substituted ortho-phenylene radical, one of the radicals R_x and R_o is a monocyclic carbocyclic aryl group containing a tertiary amino-lower alkoxy group and the other an aryl radical, n is an integer from 0 to 4, the group $-(C_nH_{2n})$ separating the oxygen atom from the carbon atom of the double bond to which it is attached by at most 2 carbon atoms, their salts, their N-oxides, their salts of their N-oxides and their quaternary ammonium compounds. The compounds are useful as estrogenic, antifertility and antimicrobial agents.

3,374,246

PREPARATION OF 2,4,6-HEPTANETRIONE AND 2,6-DIMETHYL-4-PYRANONE

Erich Marcus and John K. Chan, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,161

6 Claims. (Cl. 260—345.9)

1. A process for the production of 2,4,6-heptanetrione and 2,6-dimethyl-4-pyranone which comprises reacting diketene with from about 0.3 to about 0.9 mole of water per mole of diketene in contact with a catalytically effective concentration of a tertiary amine.

3,374,247

PROCESS FOR THE CATALYZED REDISTRIBUTION OF SILICON-FLUORINE AND SILICON-HYDROCARBYLOXY BONDS

Enrico J. Pepe, Kenmore, and Bernard Kanner, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 3, 1963, Ser. No. 313,442

7 Claims. (Cl. 260—348)

This invention is directed to a catalytic process for the redistribution of silicone-fluorine and silicon-hydrocarbyloxy bonds by heating a mixture of compounds containing at least one silicon-fluorine bond and at least one silicon-hydrocarbyloxy bond in the presence of a redistribution catalyst.

3,374,248

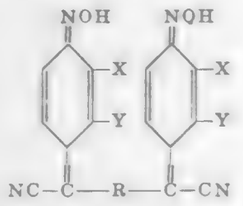
PHENYLACETONITRILE OXIMES

Charles D. Mitchell, Willow Street, Pa., assignor to Armstrong Cork Company, Lancaster, Pa.

No Drawing. Filed Aug. 3, 1965, Ser. No. 477,002

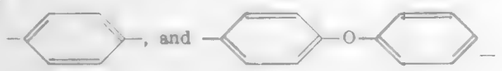
1 Claim. (Cl. 260—396)

1. Phenylacetonitrile oximes of the formula



wherein X and Y are selected from the group consisting of

provided at least one of X and Y on any cyclohexadiene group is —H, and R is selected from the group consisting of



3,374,249

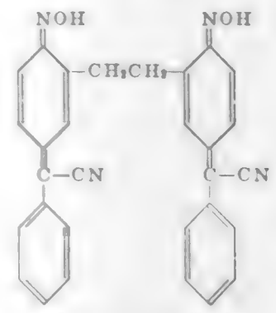
PHENYLACETONITRILE OXIMES

Charles D. Mitchell, Willow Street, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 3, 1965, Ser. No. 477,003

1 Claim. (Cl. 260—396)

1. A bis(phenylacetonitrile oxime) of the formula



3,374,250

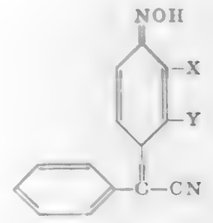
PHENYLACETONITRILE OXIMES

John S. Heckles, Lancaster, and Charles D. Mitchell, Willow Street, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

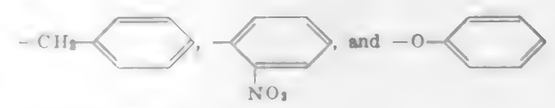
No Drawing. Filed Aug. 3, 1965, Ser. No. 477,023

1 Claim. (Cl. 260—396)

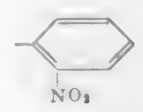
1. Phenylacetonitrile oximes of the formula



wherein X and Y are selected from the group consisting of —H,



provided that Y is not



and one and only one of X and Y is hydrogen.

3,374,251

17-(ALIPHATIC HYDROCARBONOXY) AND 17-(SUBSTITUTED ALIPHATIC HYDROCARBONOXY) ESTRANE DERIVATIVES

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed May 24, 1963, Ser. No. 282,844

17 Claims. (Cl. 260—397.1)

1. 17-(2′-fluoroethoxy)-3-methoxy-$\Delta^{1,3,5(10)}$-estratriene.

3,374,252

PHARMACEUTICAL PRODUCT OBTAINED FROM PLANTS OF THE GENUS HOLARRHENA (APOCYNACEAE)

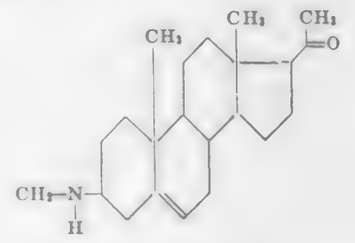
Jean Louis Paul Mainil, Boitsfort, Belgium, assignor to Société Anonyme Oletta, Luxembourg, Luxembourg

No Drawing. Continuation-in-part of application Ser. No. 8,486, Feb. 15, 1960. This application Oct. 17, 1962, Ser. No. 231,292

Claims priority, application Luxembourg, Aug. 19, 1958, Patent No. 36,360; application Germany Dec. 31, 1959, S 66,498

1 Claim. (Cl. 260—397.3)

An alkaloid derived from plants of the genus Holarrhena (Apocynaceae) and of the formula:



3,374,253

PROCESS FOR THE PREPARATION OF 17(20)-21-AL PREGNENES

John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,855

10 Claims. (Cl. 260—397.3)

1. A process for the preparation of $\Delta^{17(20)}$-21-al pregnanes which comprises reacting a 17-ketosteroid with at least one molar equivalent of $LiCH_2$—CH=N—R, wherein R is selected from the group consisting of a lower alkyl group containing from 1 to 6 carbon atoms and a cycloalkyl group containing from 3 to 7 carbon atoms, in an ether solvent medium and subjecting the thus-formed compound to acid hydrolysis.

3,374,254

6-KETO-ESTRONE AND PROCESS FOR THE PRODUCTION THEREOF

Luciano Re, South Orange, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,764

22 Claims. (Cl. 260—397.4)

The invention disclosed herein is concerned with a novel synthesis of optically active estrone lower alkyl ethers and intermediate compounds useful in the synthesis of optically active estrone lower alkyl ethers. More particularly, this invention relates to a total synthesis of optically active estrone lower alkyl ethers in which inexpensive starting materials are used and which has the advantage that resolution is accomplished in an early stage of the synthesis. In this synthesis, 3-(p-alkoxybenzoyl)-propionic acid is reacted with vinyl magnesium bromide to form 4-(p-alkoxyphenyl)-4-vinyl-4-hydroxybutyric acid, which is then condensed with 2-methylcyclopentane-1,3-dione thereby producing 3-alkoxy-14, 17-diketo-5(6),8(14) - diseco - 1,3,5(10),9(11) - estratetraene-6-oic acid. The latter compound is then reacted with p-toluene sulfonic acid and an optically active alcohol to form a mixture of diasteroisomeric esters of 3-alkoxy-17-keto-5(6)-seco-1,3,5(10),8,14 - estrapentaene-6-oic acid which are separated by fractional crystallization. The individual isomers are then separately reacted with a saponifying agent, and the resulting isomeric acids are reacted first with hydrogen thereby reducing the Δ^{14}-double bond and then with potassium in liquid ammonia thereby reducing the Δ^{8}-double bond, to form the 3-alkoxy-17-keto-5(6)-seco-1,3,5(10)-estratriene-6-oic acid isomers. The last named compound is then reacted with a strong acid thereby closing the B-ring, and the resulting l- and d-isomers of 6-keto-estrone 3-alkyl ether are reacted with hydrogen to produce the desired d- and l-isomers of estrone 3-alkyl ether.

3,374,255

PROCESS FOR THE HALOETHYNYLATION OF GONA-ENE-3,17-DIONES

Thomas B. Windholz, Westfield, and Arthur A. Patchett, Cranford, N.J., and John Fried, Palo Alto, Calif., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 227,582, Oct. 1, 1962. This application Apr. 8, 1966, Ser. No. 541,070

6 Claims. (Cl. 260—397.4)

1. A process for the haloethynylation of gona-4-ene-3,17-diones and B- and C- ring unsaturated derivatives thereof in which the double bonds are conjugated with the double bond at the 4-position, and in which the keto groups at C–3 and C–17 are both in free unprotected form, to produce the corresponding 17α-haloethynyl-17β-hydroxy-gona-4-ene-3-ones which comprises reacting the said 3,17-diones with a dihaloethylene in liquid ammonia in the presence of an alkali metal amide, said dihaloethylene being selected from the group consisting of dichloroethylene and dibromoethylene.

3,374,256

COMPLEX PHOSPHORUS SALTS

John S. Driscoll, Belmont, and Clifford N. Matthews, Winchester, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 16, 1963, Ser. No. 302,697

19 Claims. (Cl. 260—429.9)

1. A methylene phosphonium halide compound selected from the class consisting of phosphonium methylene phosphorane trihalides of the formula $R'C[P(R)_3]_2(X)_3$, methylene diphosphonium tetrahalides of the formula $(R')_2C[P(R)_3]_2(X)_4$, phosphonium methylene phosphorane metal halides of the formula

$$R'C[P(R)_3]_2M(X)_{(a+1)}$$

and methylene diphosphonium metal halides of the formula $(R')_2C[P(R)_3]_2M(X)_{(a+2)}$ where each R′ is a radical selected from the class consisting of hydrogen and hydrocarbon radicals, each R is a hydrocarbon radical, each X is a halogen atom, each M is a metal which forms halides having bonds of predominantly covalent character, and a is the valence of M, wherein each said hydrocarbon radical is free of aliphatic unsaturation and contains up to 18 carbon atoms.

17. Methods of forming a phosphonium methylene phosphorane metal halide, selected from the group consisting of

(1) contacting a metal halide with a phosphonium methylene phosphorane halide in an organic solvent;
(2) contacting an elemental metal with a methylene bis(phosphonium halide) in an organic solvent; and
(3) contacting an elemental metal with a tri-hydrocarbylphosphine and a hydrocarbyl polyhalide; wherein each said metal is metal forming halides having bonds of predominantly covalent character.

3,374,257

TERNARY ADDITION COMPOUNDS

David G. Walker, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,325

9 Claims. (Cl. 260—448)

Ternary addition compounds of the formula: R:HX: $2AlX_3$, where R is selected from the group consisting

of C_8, C_9 and C_{10} methylbenzenes and X is either Cl or Br, are prepared in pure form by mixing the aromatic compound with a stoichiometric excess of anhydrous aluminum halide or hydrogen halide at a temperature between about −5° to about 30° C. The pure ternary addition compounds are heated to a temperature from about 30° to about 80° C. to allow isomerization to occur to pure ternary addition compounds whereby substantial pure meta-xylene, mesitylene, or isodurene ternary addition compounds are formed. The ternary addition compounds are hydrolyzed to produce meta-xylene, mesitylene and isodurene in substantial high purities.

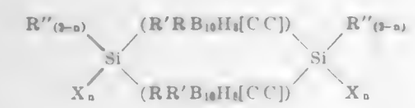
3,374,258

SILYLAMINE CARBORANES

Stelvio Papetti, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Sept. 20, 1963, Ser. No. 310,421
2 Claims. (Cl. 260—448.2)

Nitrogen-containing organoboron compounds are prepared by reacting a silicon-containing organoboron compound of the formula:



wherein R and R′ are each hydrogen or an alkyl, R″ is alkyl or an aryl radical, X is a halogen and n is the integer 1 or 2, with a compound of the formula:

$$NH_2R'''$$

wherein R‴ is hydrogen, phenyl, or an alkyl radical.

3,374,259

CYCLIC ORGANOSILYLAMINE CARBORANES AND PROCESS THEREFOR

Stelvio Papetti, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Sept. 20, 1963, Ser. No. 310,422
19 Claims. (Cl. 260—448.2)

Cyclic silicon and nitrogen-containing organoboron compounds are prepared by reacting a compound of the formula:

$$RR'B_{10}H_8[C(SiX_{(3-n)}R''_n)]_2$$

wherein R and R′ are each selected from a group consisting of hydrogen and an alkyl radical containing from 1 to 5 carbon atoms, R″ is selected from the group consisting of an alkyl radical containing from 1 to 5 carbon atoms or an aryl radical containing not more than 10 carbon atoms, X is a halogen selected from the group consisting of chlorine, bromine and iodine, and n is an integer of from 0 to 2 inclusive, with a nitrogen-containing compound of the formula:

$$NH_2R''$$

wherein R‴ is selected from the group consisting of hydrogen, alkyl of from 1 to 8 carbon atoms, or phenyl.

3,374,260

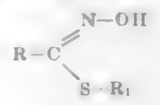
PREPARATION OF S-ALKYL THIOL-HYDROXAMATE ESTERS

James B. Buchanan, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 12, 1966, Ser. No. 571,963
10 Claims. (Cl. 260—453)

This application pertains to a process for preparing thiolhydroxamate esters. More particularly this application is directed to a process for preparing S-alkyl thiolhydroxamate esters of the formula

(I)



wherein

R is alkyl of 1 through 3 carbon atoms, methoxyalkyl of 2 through 4 carbon atoms, methylthioalkyl of 2 through 4 carbon atoms, ethoxyalkyl of 3 through 5 carbon atoms or ethylthioalkyl of 3 through 5 carbon atoms; and R_1 is alkyl of 1 through 3 carbon atoms;

by the reaction of an acid salt of the corresponding S-alkyl imidic thiolester with an anhydrous acid salt of hydroxylamine in the presence of an alkali metal alkoxide and an alkanol of 1 through 4 carbon atoms.

3,374,261

PREPARATION OF CYCLODODECYL HYDROGEN SULPHATE AND SALTS OF CYCLODODECYL HYDROGEN SULPHATE

Bonnie C. Lloyd, Pasadena, Tex., and Charles G. McAlister, Lake Charles, La., assignors to Columbian Carbon Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 29, 1965, Ser. No. 429,119
6 Claims. (Cl. 260—457)

Cyclododecyl hydrogen sulphate is prepared by reacting cyclododecene with cold concentrated sulphuric acid, diluting the reaction mixture with cold water, warming the aqueous mixture and adding a hydrocarbon solvent, separating the hydrocarbon phase and evaporating the hydrocarbon solvent to precipitate the acid sulphate. Salts of cyclododecyl hydrogen sulphate are precipitated from the separated hydrocarbon extract by neutralization with an alkali. These salts and the acid sulphate are separately converted to cyclododenol by dilute acid hydrolysis or to dodecane dioic acid by oxidation with concentrated nitric acid.

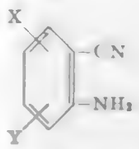
3,374,262

PRODUCTION OF O-AMINOBENZONITRILES BY THERMAL DECOMPOSITION OF ISATIN-β-OXIMES

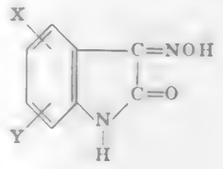
Matthias Seefelder, Ludwigshafen (Rhine), and Herbert Armbrust, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed June 11, 1965, Ser. No. 463,347
Claims priority, application Germany, June 20, 1964, B 77,337
5 Claims. (Cl. 260—465)

1. Process for the production of o-aminobenzonitriles having the general formula



in which X and Y denote a member of the group consisting of a hydrogen atom, a halogen atom and an alkyl group having 1 to 4 carbon atoms which process comprises heating an isatin-β-oxime having the general formula



in which X and Y have the above meanings under subatmospheric pressure to at least 200° C. in the presence of an inert solvent having a boiling point higher than the boiling point of the aminobenzonitrile to be formed, under such conditions of temperature and pressure that the o-aminobenzonitrile distills off immediately after formation.

3,374,263

SEPARATING ACRYLONITRILE OR METHACRYLONITRILE FROM MIXTURES CONTAINING THE SAME

Hans-Martin Weitz and Hans Friz, Ludwigshafen (Rhine), and Rolf Platz, Mannheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Feb. 5, 1965, Ser. No. 430,535
Claims priority, application Germany, Feb. 7, 1964, B 75,330
8 Claims. (Cl. 260—465.3)

Separation of unsaturated nitriles, especially acrylonitrile and/or methacrylonitrile, from gas mixtures such as are obtained in the ammonia oxidation of olefins, especially of propylene and/or butylene, by countercurrently contacting such gas mixtures with lactones, lactams, N-alkyllactams, N-hydroxyalkyllactams, sulfones, sulfoxides or propylenecarbonate and recovering the dissolved unsaturated nitriles from the resultant solution.

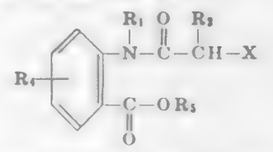
3,374,264

N-HALOACETYL-ANTHRANILIC ACIDS AND ESTERS

Milan Radoje Uskokovic, Montclair, and Wilhelm Wenner, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application Oct. 4, 1962, Ser. No. 228,256, now Patent No. 3,261,828, dated July 19, 1966. Divided and this application July 27, 1965, Ser. No. 475,267
10 Claims. (Cl. 260—471)

1. A compound of the formula:



wherein R_1 is selected from the group consisting of hydrogen, lower alkyl, phenyl-lower alkyl, nitrophenyl-lower alkyl and cyclo-lower alkyl-lower alkyl; R_2 is selected from the group consisting of hydrogen and lower alkyl; R_4 is selected from the group consisting of hydrogen and halogen; R_5 is selected from the group consisting of hydrogen and lower alkyl; and X is halogen.

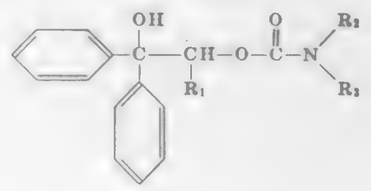
3,374,265

DIPHENYL HYDROXY CARBAMATE COMPOUNDS

Charles D. Bossinger, Olympia Fields, and Kelley G. Taylor, Decatur, Ill., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Original application Feb. 6, 1962, Ser. No. 171,354, now Patent No. 3,278,380, dated Oct. 11, 1966. Divided and this application Feb. 18, 1966, Ser. No. 528,383
3 Claims. (Cl. 260—482)

1. Diphenyl hydroxy carbamates having the formula



wherein R_1 is hydrogen and R_2 and R_3 are selected from the class consisting of hydrogen, methyl and ethyl.

3,374,266

PREPARATION OF ACRYLIC ACID ESTERS

Theodor Volker, Fribourg, Switzerland, assignor to Lonza Ltd., Basel, Switzerland

No Drawing. Continuation-in-part of application Ser. No. 481,072, Aug. 19, 1965. This application June 21, 1967, Ser. No. 647,634
Claims priority, application Switzerland, Mar. 6, 1963, 2,925/63; Sept. 1, 1964, 11,416/64
10 Claims. (Cl. 260—486)

Acrylic acid esters are prepared by decarboxylation of a mono copper salt of a 1,2-ethylenedicarboxylic acid in the presence of pyridine, quinoline, or acridines and preferably also of an acrylic acid ester and an alcohol.

3,374,267

PREPARATION OF LOWER ALKANOYLOXY-PROPIONALDEHYDES

Henry Harry Tan, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 10, 1965, Ser. No. 478,760
3 Claims. (Cl. 260—494)

1. A method for preparing lower alkanoyloxy-substituted propionaldehydes comprising reacting an aldehyde of the formula

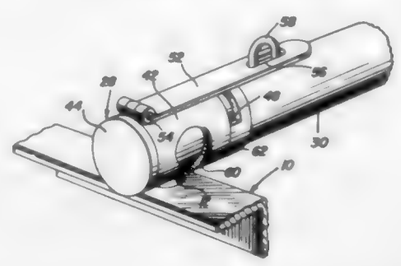
wherein R_1 and R_2, which may be the same, represent alkyl radicals of from 1 to about 6 carbon atoms, with a formaldehyde-yielding compound and a monobasic carboxylic acid, in the presence of a catalytic amount of a mineral acid at a temperature within the range of from about 50° to about 120° C.

3,374,268

HITCH CONSTRUCTION

James A. Groves, 1850 W. 9th St., Long Beach, Calif. 90813

Continuation of application Ser. No. 501,732, Oct. 22, 1965. This application July 5, 1967, Ser. No. 651,322
7 Claims. (Cl. 280—512)



A socket hitch element with a forward end of a trailer tongue including a cylindrical portion at the forward end of the tongue having a downwardly facing radial opening formed therein and with a cylindrical plug member snugly telescoped into the cylindrical portion, which plug member includes a radially outwardly opening recess whose outer end is registered with the opening and which is adapted to seatingly receive the ball portion of a ball hitch element inserted thereinto through said opening, and a sleeve telescoped over the cylindrical end portion and including a circumferential slot whose opposite ends are registrable with the opening and are of wide and narrow dimensions adapted to pass therethrough the aforementioned ball portion and to snugly receive the reduced di-

ameter shank portion of the ball hitch element, respectively.

3,374,269

PROCESS OF PRODUCING 3,5-DIIODOTHYRONINES

Franz Langer, Vienna, Austria., assignor, by mesne assignments, to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,387

Claims priority, application Austria, Jan. 9, 1963, A 173/63

14 Claims. (Cl. 260—519)

A process of producing 3,5-diiodothyronines by converting 3,5-diiodotyrosine to a complex of divalent metal cations and reacting the complex in the presence of bases such as alkali metal hydroxides and alkoxides and organic nitrogen compounds, with 4,4'-dialkoxy-diphenyl-iodonium salts and then dealkylating to the corresponding 3,5-diiodothyronine.

3,374,270

PROCESS AND CATALYST FOR CATALYTIC DEHYDROGENATION OF CYCLODODECANOL

Manfred zur Hausen and Wilhelm Knepper, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany

No Drawing. Filed June 2, 1965, Ser. No. 460,815

Claims priority, application Germany, June 4, 1964, C 33,046

8 Claims. (Cl. 260—586)

1. In a process for the catalytic dehydrogenation of cyclododecanol to cyclododecanone, the improvement comprising heating cyclododecanol in the liquid phase between 160 and 230° C. in the presence of a solid bed catalyst, said solid bed catalyst comprising 5 to 15% by weight of copper on an activated aluminum oxide carrier, said carrier having a surface area of 30–100 square meters per gram and a pore volume of more than 0.30 ml. per gram.

3,374,271

BENZOCYCLOHEPTEN-6-ONES AND METHODS OF PREPARING THE SAME

Andrew Steven Kende, Nanuet, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 19, 1967, Ser. No. 631,918

7 Claims. (Cl. 260—590)

Novel bridged organic compounds, 5,9-dihydro-5,9-etheno-6H-benzocyclohepten-6-ones, prepared by the reaction of an aryne with tropone or substituted derivatives thereof. The novel compounds exhibit good activity against a broad spectrum of fungi and bacteria.

3,374,272

HYDROGENATION OF MESITYL OXIDE

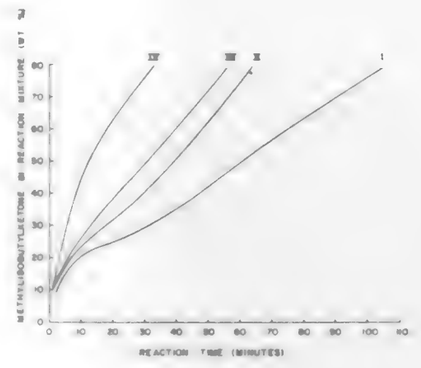
Adolf Heykoop and Franciscus A. van Dijk, Rotterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 9, 1966, Ser. No. 532,973

Claims priority, application Netherlands, Mar. 18, 1965, 65—3,470

8 Claims. (Cl. 260—593)

Crude mesityl oxide, obtained by dehydrogenating diacetone alcohol with sulfuric acid, is treated with hydrogen peroxide and caustic before liquid phase hydrogenation



in the presence of a nickel catalyst such as Raney nickel to methyl isobutyl ketone and/or methyl isobutyl carbinol.

3,374,273

FLUORO COMPOUNDS AND SYNTHESIS THEREOF

William J. Cunningham, Somerset, and Cyril Woolf, Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 297,220, July 24, 1963. This application Oct. 31, 1966, Ser. No. 591,034

4 Claims. (Cl. 260—593)

1. The process for making a hydrate selected from the group consisting of $CF_3COCF_3 \cdot 3H_2O$ and

$$CF_3COCF_2Cl \cdot 3H_2O$$

comprising heating a corresponding compound selected from the group consisting of $CF_3COCF_3 \cdot H_2O$ and

$$CF_3COCF_2Cl \cdot H_2O$$

to volatilize therefrom volatile constituents which boil below about 105° C. at atmospheric pressure to thereby form a liquid hydrate selected from the group consisting of $CF_3COCF_3 \cdot 3H_2O$ and $CF_3COCF_2Cl \cdot 3H_2O$ boiling constantly at about 105° C. at atmospheric pressure, and thereafter recovering a hydrate selected from the group consisting of $CF_3COCF_3 \cdot 3H_2O$ and $CF_3COCF_2Cl \cdot 3H_2O$ of said heating operation.

3,374,274

PROCESS FOR THE PRODUCTION OF AROMATIC THIOLS AND AROMATIC SULFIDES

James D. Spainhour, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 15, 1964, Ser. No. 396,739

10 Claims. (Cl. 260—609)

1. A process for the preparation of an aromatic thiol and an aromatic sulfide which comprises reacting a nuclear monohalo-substituted aromatic compound with an excess of an alkali metal monosulfide in a polar organic solvent selected from N-methyl-2-pyrrolidone, pyrrolidone caprolactam, N-ethyl-caprolactam, dimethylacetamide, tetramethylurea, hexamethylphosphoramide, and N,N'-ethylenedipyrrolidone at an elevated temperature for a time sufficient to carry out said reaction.

3,374,275

STABILIZATION OF POLYOXYALKYLENE COMPOUNDS

Charles R. Dickey, Covina, Calif., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 216,960, Aug. 15, 1962. This application May 24, 1966, Ser. No. 552,421

7 Claims. (Cl. 260—611.5)

1. A composition which comprises a polyoxyalkylene compound selected from the group consisting essentially of polyoxyethylene compounds, polyoxypropylene compounds and polyoxyalkylene compounds consisting essentially of oxyethylene and oxypropylene units having an average molecular weight between 200 and 50,000, from about 0.005 to about 1.0 weight percent, based on the weight of said polyoxyalkylene compound, of a boron-containing compound selected from the group consisting of alkali metal borohydrides and amine boranes, and from about 0.005 to about 1.0 weight percent, based on the weight of said polyoxyalkylene compound, of a compound selected from the group consisting of phenothiazine and alkylphenothiazine wherein the alkyl group contains from 1 to 8 carbon atoms.

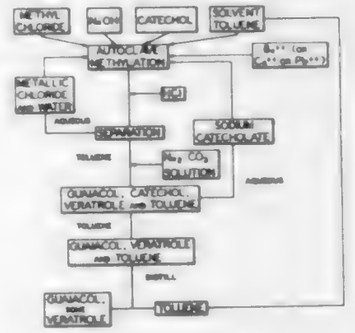
3,374,276

MANUFACTURE OF GUAIACOL

John Swidinsky, Newark, N.J., assignor to S. B. Penick & Company, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 344,348, Feb. 12, 1964. This application Feb. 21, 1966, Ser. No. 529,158

9 Claims. (Cl. 260—613)



The invention relates to a process for converting catechol to guaiacol by treating catechol with a methyl halide in a closed reaction system at a temperature of between about 75–150° C. and at a pressure below about 300 pounds per square inch. The process is conducted in the presence of a water-soluble salt or hydroxide of a divalent metal, such as barium, calcium, lead or strontium, which divalent metal forms a water-insoluble sulfate and a catechol salt which are insoluble in water. The process is conducted in a solvent system made up of water and of a water-insoluble organic solvent which is not reactant with the catechol salt of the divalent metal and in which guaiacol is soluble. Desirably, when methyl chloride is employed, it is present in a mole ratio of 0.75 to 2.00 per mole of catechol.

3,374,277

DIOL OF POLY(ISOBUTYLENE OXIDE)

Edwin J. Vandenberg, Foulk Woods, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 298,434, July 29, 1963. This application Oct. 20, 1965, Ser. No. 499,035

2 Claims. (Cl. 260—615)

1. As a new composition of matter, a crystalline diol of poly(isobutylene oxide), wherein each of the hydroxyl groups is attached to a terminal carbon of the polymer chain, said diol having a number average molecular weight between about 500 and about 20,000 and a melting point of about 150° C. to about 175° C.

3,374,278

PREPARATION OF ALKYL IODIDES FROM ALKYL ALCOHOLS AND ORGANOTIN IODIDES

Harold Coates, Wombourn, and Peter Albert Theodore Hoye, Stourbridge, England, assignors to Albright & Wilson (Mfg.) Limited, Oldbury, near Birmingham, England, a British company

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,131

Claims priority, application Great Britain, Oct. 15, 1962, 38,891/62

18 Claims. (Cl. 260—652)

Alkyl iodide is prepared by heating an organotin iodide in the presence of hydrogen chloride and an alkyl alcohol thereby forming alkyl iodide and organotin chloride; and the alkyl iodide is recovered from the reaction mixture.

3,374,279

ALKYLATION PROCESS

David G. Walker, Madison, N.J., assignor to Esso Research and Engineering Company

No Drawing. Filed Dec. 30, 1965, Ser. No. 517,857

9 Claims. (Cl. 260—671)

1. A method which comprises
contacting in the liquid phase an alkylatable aromatic hydrocarbon with an olefin
in a reaction zone which is substantially free of water and molecular oxygen,
and in the presence of an effective amount of a catalyst dissolved in said aromatic hydrocarbon,
said catalyst consisting of a crystalline complex having the empirical formula

$$1TiCl_3 : 1 \text{ aromatic hydrocarbon} : 2AlCl_3$$

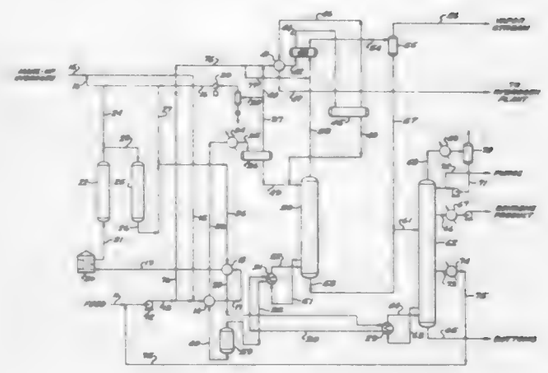
3,374,280

THERMAL HYDRODEALKYLATION PROCESS

Norman L. Carr, Allison Park, and Rodney E. Peterson, Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed June 20, 1966, Ser. No. 558,993

5 Claims. (Cl. 260—672)



Alkyl aromatic hydrocarbon feed stocks containing toluene are subjected to thermal hydrodealkylation in the presence of hydrogen and at least one alkyl benzene having at least 8 carbon atoms per molecule. The presence of C_8^+ alkyl benzenes increased selectivity and conver-

sion of toluene to benzene at lower reaction temperatures and shorter reaction times.

3,374,281

PRODUCTION OF ALKYLATED BENZENES FROM PARAFFINS

Sigmund M. Csicsery, Greenbrae, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 28, 1965, Ser. No. 491,023

8 Claims. (Cl. 260—673)

A process for the production of alkylated benzene compounds in which a feed stream comprising at least one C_4–C_5 paraffin and hydrogen (in a hydrogen-to-hydrocarbon ratio of less than 1.0) is contacted with a catalyst comprising a Group V, VI or VII metal or oxide dehydrogenating component and an acidic component of specified acidity at a temperature of 800°–1200° F. and a pressure of 2–500 p.s.i.a., yielding alkylated benzene compounds as the principal aromatic reaction products. Acidity is measured by the mol ratio of isobutene to normal butenes in the product. Temperatures of 950°–1170° F. and pressures of 5–100 p.s.i.a. are preferred.

3,374,282

METHOD OF PREPARING AROMATIC HYDROCARBONS FROM PROPYLENE HYDROCARBONS

Frederick J. Soderquist, Essexville, Harold D. Boyce, Coleman, and Edward P. Duris, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 1, 1967, Ser. No. 613,104

7 Claims. (Cl. 260—673.5)

A process for converting propylene to aromatic hydrocarbons by conducting a mixture of a gaseous diluent, such as, for example, steam, and polypropylene hydrocarbons through a reaction zone maintained at a temperature range of from about 700° to about 950° C., and separating the resultant aromatic hydrocarbons from the hydrocarbon product phase.

3,374,283

HYDROCARBON DEHYDROGENATION IN THE PRESENCE OF OXYGEN, IODINE AND COBALT

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 242,077, Dec. 4, 1962. This application Mar. 11, 1965, Ser. No. 439,079

3 Claims. (Cl. 260—680)

1. The method for preparing aliphatic diolefins which comprises heating in the vapor phase at a temperature in the range of about 400° C. to about 800° C. a mono-olefinic hydrocarbon containing 4 to 6 carbon atoms with oxygen in a molar ratio of about one-fourth to about two mols of oxygen per mol of mono-olefin, an iodine liberating material in amount greater than 0.001 mol of iodine per mol of mono-olefin, the partial pressure of said mono-olefin being less than about 20 inches mercury, in the presence of a material selected from the group consisting of cobalt metal, inorganic cobalt salts, cobalt oxide and mixtures thereof, the ratio of the amount of said oxygen being greater than 1 mol per atom of said iodine.

3,374,284

PRODUCTION OF CONJUGATED DIOLEFINES

John Lynn Barclay, Tadsworth, and David James Hadley and James Robert Bethell, Epsom Downs, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Continuation-in-part of application Ser. No. 490,127, Sept. 24, 1965. This application Sept. 12, 1966, Ser. No. 578,498

Claims priority, application Great Britain, Oct. 12, 1960, 34,878/60; Jan. 25, 1961, 2,856/61; May 19, 1961, 18,256/61; Aug. 18, 1961, 29,802/61

11 Claims. (Cl. 260—680)

Process for the conversion of mono-olefines containing a chain of not less than four carbon atoms such as butenes or 2-alkyl butenes to the corresponding conjugated diolefine by forming a vapor mixture of the mono-olefine with oxygen and passing the mixture over a heated catalyst which is either a mixture of oxides of any of the elemental pairs, cobalt-tin, cobalt-titanium, tin-titanium, tin-tungsten, tin-molybdenum, titanium-tungsten, titanium-molybdenum, or a compound of oxygen with the metals of one of these pairs.

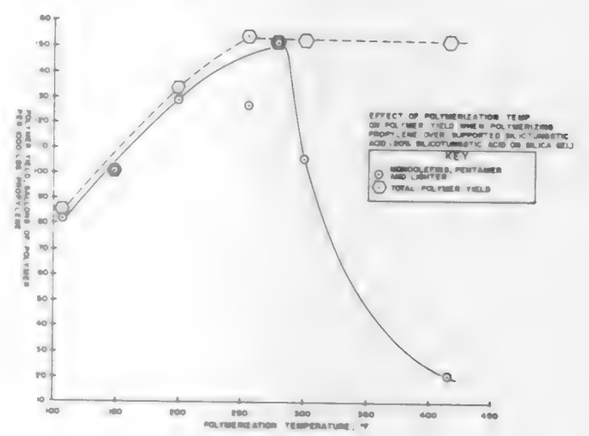
3,374,285

PROCESS FOR THE POLYMERIZATION OF PROPYLENE

Alfred M. Henke, Springdale, and Raynor T. Sebulsky, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Dec. 29, 1964, Ser. No. 421,805

14 Claims. (Cl. 260—683.15)


EFFECT OF POLYMERIZATION TEMP ON POLYMER YIELD WHEN POLYMERIZING PROPYLENE OVER SUPPORTED PHOSPHOTUNGSTIC ACID (30% SILICOTUNGSTIC ACID ON SILICA GEL)
KEY
BICYCLOETHER, PENTAMER AND LIGHTER
TOTAL POLYMER YIELD
POLYMERIZATION TEMPERATURE, °F

1. A process for the polymerization of propylene wherein no aromatics are formed which comprises:

contacting propylene at a temperature which is maintained between 100° F. and 300° F. with a catalyst comprising a tungsten containing heteropoly acid deposited on a support selected from the group consisting of the oxides of aluminum, silicon and magnesium and mixtures thereof for a time sufficient to produce substantially only polymers of propylene having a maximum of 15 carbon atoms per molecule.

3,374,286

POLYMERIC POLYHYDROXY - POLYETHER RESINS AND METHOD OF MAKING SAME

Darrell D. Hicks, Louisville, Ky., assignor to Celanese Coatings Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 281,337, May 17, 1963. This application Feb. 1, 1967, Ser. No. 613,123

9 Claims. (Cl. 260—834)

A process for preparing fusible polymeric polyhydroxy polyether resins by reacting a diepoxide resin, a monohydric alcohol and a monoepoxide in the ratio of 1 mol of diepoxide resin with about one mol of alcohol and less than ten mols of monoepoxide.

3,374,287

POLYEPOXIDE PRODUCTS OF REDUCED ODOR CURED WITH SULFUR CONTAINING POLYACID COMPOUNDS AFTERTREATED WITH FORMALDEHYDE

Sylvan O. Greenlee, Lafayette, Ind., assignor, by mesne assignments, to Ciba Limited, Basel, Switzerland, a corporation of Switzerland

No Drawing. Original application Oct. 8, 1962, Ser. No. 229,217. Divided and this application Nov. 10, 1966, Ser. No. 607,096

3 Claims. (Cl. 260—836)

The odor associated with polyepoxide conversion products formed by reacting a polyepoxide having a functionality of greater than one vicinal epoxy group per molecule with a thioxyalkanoic acid containing at least one thioether group and at least two carboxylic acid groups, obtained by reaction of a mercapto acid and a diene polymer, is substantially reduced by treating the thioxyalkanoic acid after formation with formaldehyde in the presence of a mineral acid.

3,374,288

POLYCARBONAMIDE FILAMENTS CONTAINING POLYALKYLENE OXIDE, SODIUM PHENYL PHOSPHINATE AND SODIUM AMINOALKYL-PHOSPHINATE

Ronald F. Lange, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 3, 1965, Ser. No. 485,109

4 Claims. (Cl. 260—857)

Stabilized filaments may be prepared from synthetic linear polyamides by the addition of 0.5 to 1.0 mole percent of sodium aryl phosphinate and 0.5 to 1.0 percent of sodium aminoalkyl phosphinate, with the further addition of at least 2.0% of a polyalkylene oxide based on the weight of the polyamide. In an example a polymeric composition is prepared from 73 lbs. of hexamethylenediammonium adipate ammonium salt, 68.1 gms. sodium phenyl phosphinate, and 60.2 gms. of sodium 3 - aminopropyl phosphinate.

3,374,289

GRAFT POLYMERS FOR COATINGS, IMPREGNATIONS AND ADHESIVE FILMS FOR FIBRE SUBSTRATA

Karl-Heinz Ott, Harro Schlesmann, Karl Dinges, Oskar Glenz, Karl-Arnold Weber, and Fritz Kassack, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Dec. 17, 1963, Ser. No. 331,116

Claims priority, application Germany, Dec. 22, 1962, F 38,632

5 Claims. (Cl. 260—885)

Grafting substrate of a saturated copolymer of p-isopropyl-α-methylstyrene and an ester of acrylic and/or methacrylic acid, the esterifying moiety thereof containing 1–10 carbon atoms and, as the grafting component, at least one ester of acrylic acid, the esterifying moiety thereof containing from 1–10 carbon atoms with permissible replacement of up to 50% by weight of said component with other mono-olefinically unsaturated compounds having a terminal $CH_2{=}C<$ group. A preferred embodiment embraces a grafting component wherein said olefinically unsaturated compound is an ether, ester or a Mannich base having groups which are capable of spontaneous cross-linking.

3,374,290

POLYETHYLENE CONTAINING HOMOPOLYMER OF C_{14-16} ALPHA-MONOOLEFIN

Norman W. Franke, Penn Hills Township, Allegheny County, and Joseph C. Martini, Export, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Nov. 2, 1965, Ser. No. 506,112

6 Claims. (Cl. 260—897)

A new polyethylene composition is claimed which has both improved environmental stress cracking resistance and melt index properties. The composition consists of between 80 and 98 weight percent polyethylene and between 2 and 20 weight percent of a n-1-monoolefin homopolymer wherein the monoolefin has between 14 and 16 carbon atoms.

3,374,291

TRITHIOPHOSPHITES OF MERCAPTO ACID ESTERS

Herbert Myers, Cherry Hill, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 25, 1964, Ser. No. 370,112

6 Claims. (Cl. 260—942)

1. A mercapto acid ester trithiophosphite of the formula

$$[(R'\overset{O}{\overset{\|}{O}}C)_nRS]_3P$$

wherein R is selected from the class consisting of alkylene, alkenylene, arylene, alkarylene and aralkylene having from 1 to about 40 carbon atoms; R′ is selected from the class consisting of alkyl, cycloalkyl, alkenyl, aryl, alkaryl, aralkyl, and monochloroalkyl and having from 1 to about 18 carbon atoms; and n is an integer of from 1 to 3, and when R′ is alkyl, R is selected from the class consisting of alkenylene, arylene, alkarylene and aralkylene.

3,374,292

PHOSPHONO CARBOXAMIDES

Sheik Abdul-Cader Zahir, Great Shelford, Cambridge, England, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

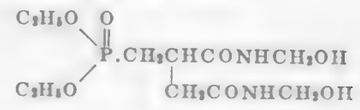
No Drawing. Continuation of application Ser. No. 362,998, Apr. 27, 1964. This application June 14, 1967, Ser. No. 646,119

Claims priority, application Great Britain, May 3, 1963, 17,563/63

9 Claims. (Cl. 260—943)

1. N-hydroxymethyl - 3 - (diethylphosphono)propionamide.

7. The compound of the formula:



3,374,293

PHOSPHORIC, PHOSPHONIC, PHOSPHINIC, THIONOPHOSPHORIC, -PHOSPHONIC, -PHOSPHINIC ACID ESTERS

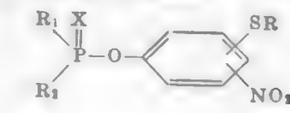
Rudolf Heiss and Karl Mannes, Cologne-Stammheim, Heinrich Pelster, Leverkusen, Günter Unterstenhöfer, Opladen, and Wolfgang Behrenz, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 331,121, Dec. 17, 1963. This application Jan. 5, 1965, Ser. No. 423,576

Claims priority, application Germany, Dec. 22, 1962, F 38,633

13 Claims. (Cl. 260—949)

1. A compound of the formula



wherein R_1 and R_2 stand independently for members selected from the group consisting of alkyl having up to 8 carbon atoms, phenyl, lower alkoxy having up to 4 carbon atoms and monochloro lower alkoxy having up to 4 carbon atoms, R stands for a member selected from the group consisting of alkyl having up to 12 carbon atoms, lower alkoxy-carbonyl substituted lower alkyl, said lower alkoxy and lower alkyl having up to 4 carbon atoms and hydroxy substituted lower alkyl having up to 4 carbon atoms, and X stands for oxygen or sulfur.

3,374,294

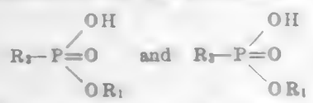
MONOESTERS OF PHOSPHONIC ACIDS

Emile Cherbuliez and Joseph Rabinowitz, Geneva, Switzerland, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 230,315, Oct. 11, 1962. This application Nov. 24, 1965, Ser. No. 509,650

6 Claims. (Cl. 260—958)

1. A compound selected from the group consisting of compounds represented by the formulas



and

wherein R_2 is selected from the group consisting of halogeno-phenyl and nitro-phenyl, R_3 is selected from phenyl, halogeno-phenyl and nitrophenyl, R_1 is bicycloalkyl of 6 to 18 carbon atoms, and M is selected from the group consisting of alkali metals and alkaline earth metals.

3,374,295

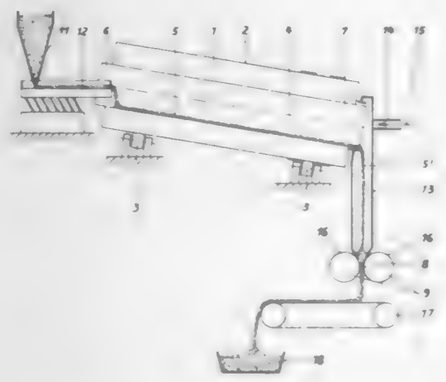
METHOD OF HEATING OF ROLLING MILL ROLLS FOR THE ROLLING OF HEATED METAL PARTICLES

Eckard Gehring, Dusseldorf-Kaiserswerth, and Oswald Kaiser, Lintorf, near Dusseldorf, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany

Filed Jan. 24, 1966, Ser. No. 522,722

Claims priority, application Germany, Jan. 23, 1965, Sch 36,423

3 Claims. (Cl. 263—52)



A method of rolling strips and sections from heated metal particles by so adjusting the roll gap that the heated metal particles can pass through in contact with the rolls but without deformation, thereby heating the rolls, and then readjusting the roll gap and rolling the particles to the desired form and dimensions. The particles first passed through, being unchanged, may be immediately rolled in the second stage. Heated protective gas may be supplied to the furnace that heats the granules.

3,374,296

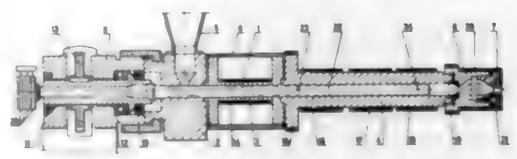
THERMOPLASTIC EXTRUSION PROCESS

Hermann R. K. N. Janeschitz-Kriegl, Delft, and Johannes Schijf and Johannes A. M. Telgenkamp, The Hague, Netherlands, assignors to Nederlandse Organisatie Voor Toegepast-Natuurwetenschappelijk Onderzoek ten Behoeve van Nijverheid, Handel en Verkeer, a corporation of the Netherlands

Filed Jan. 22, 1964, Ser. No. 340,116

Claims priority, application Netherlands, Feb. 6, 1963, 288,647

1 Claim. (Cl. 264—40)



1. A process for controlling the heat supply to the melting zone of a thermoplastic synthetic resin screw extruder comprising

(a) measuring the difference in temperature between two separately located sensing devices at both ends of a metering zone;

(b) maintaining the outer cylinder wall of the metering zone of said screw extruder at a constant temperature; and

(c) supplying heat to the melting zone of said extruder in response to a change in the difference in temperature between said sensing devices.

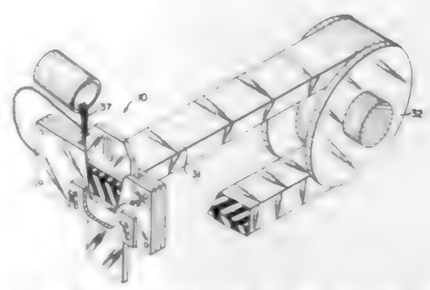
3,374,297

METHOD FOR MEASURING BELT SECTIONS

Dewey D. Henderson, Springfield, Mo., assignor to Dayco Corporation, a corporation of Delaware

Original application Sept. 28, 1962, Ser. No. 226,815, now Patent No. 3,240,465, dated Mar. 15, 1966. Divided and this application May 10, 1965, Ser. No. 470,278

1 Claim. (Cl. 264—40)



A method of measuring the cross section of a belt without the necessity of removing the belt from its drive. The method consists of placing a mold cavity around the belt and dispensing material to form an impression of the belt periphery, and placing a movable member on the upper surface of the belt to close the mold. After the material has hardened it is removed and provides an impression of the cross section of the belt.

3,374,298

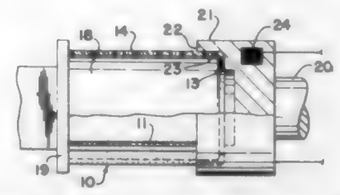
METHOD OF MAKING DRINKING UTENSIL JACKET

Charles E. Studen, R.R. 1, Pekin Road, Newbury, Ohio 44065

Filed Apr. 8, 1965, Ser. No. 446,530

2 Claims. (Cl. 264—41)

A method of making a collapsible polyethylene drinking utensil jacket having an inturned flange at one end thereof to support a utensil by extruding polyethylene foam through a die to form a tubular member having longitudinal indentations to facilitate collapse of the member, cutting the tubular member into predetermined lengths and fitting these lengths upon a mandril, said mandril being of a length to permit a pre-established amount of said cut tubular member to extend and overhang therefrom, displacing the mandril into a heatable female die shaping member to form an inturned flange, and applying heat to the female die to permanently set the inturned flange.



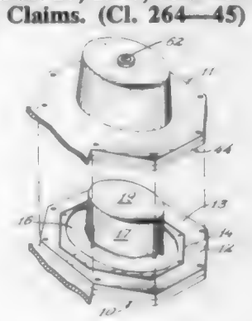
3,374,299

PLASTIC HAT

Engelbert J. Peham, St. Paul, Minn., assignor to Peham Plastics Company, St. Paul, Minn., a partnership

Original application Feb. 1, 1965, Ser. No. 429,231, now Patent No. 3,305,874, dated Feb. 28, 1967. Divided and this application Feb. 27, 1967, Ser. No. 618,631

5 Claims. (Cl. 264—45)



The method disclosed is for producing objects such as plastic hats having a resilient band embedded in the plastic at spaced areas and normally extending in straight lines between these areas, the resilient band serving to make the hat adaptable to various head sizes and shapes. The method is used in conjunction with a convex male mold and a concave relatively movable female mold defining a mold cavity therebetween. The male mold includes a series of spaced parallel pins extending into the mold cavity at points spaced outwardly of the convex surface thereof. The method employs the steps of stretching an endless resilient band around the convex portion of the male mold and outwardly of the pins. Intermediate portions of the band between the pins are drawn under tension against the male mold. The mold cavity is then filled with plastic. When the molded body is removed from the mold, the portions of the band which have been held under tension against the male mold are free to flex into straight lines between the embedded areas.

3,374,300

PROCESS AND APPARATUS FOR THE CONTINUOUS PRODUCHON OF POLYSTYRENIC FOAM MATERIALS

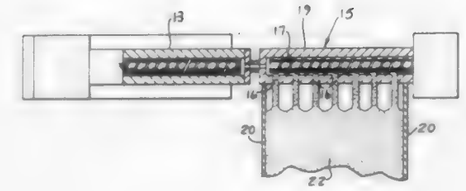
Kimikazu Azuma, 6703 Kugenuma Fujisawa-shi, Kanagawa-ken, Japan

Filed July 6, 1964, Ser. No. 380,581

Claims priority, application Japan, Oct. 12, 1963, 38/54,382; Oct. 14, 1963, 38/55,171

7 Claims. (Cl. 264—46)

A process and an apparatus for the continuous manufacture of a uniform foamed product in which a melted thermoplastic resin containing a foaming agent uniformly intermixed therein is fed into a screw extruder, the housing of which has a plurality of orifices uniformly axially spaced along one side thereof. A low pressure shaping chamber is positioned outside of the extruder housing and adjacent said one side thereof for receiving the material extruded through the plurality of orifices. Rotation of the screw of said extruder applies pressure to the melted resin mass whereby the melted material is forced through the plurality of orifices so as to form a plurality of individual strands. The strands pass into the shaping chamber which permits the strands to expand to form a foam material. The strands coalesce to form an integral foamed body.



3,374,301

METHOD OF THERMOFORMING ALKENYL AROMATIC RESINOUS SHEET

Earl F. Engles, William R. R. Park and Donald A. Shmidt, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 204,123, June 21, 1962. This application June 1, 1965, Ser. No. 460,335

6 Claims. (Cl. 264—134)

1. In the thermoforming of oriented alkenyl aromatic resinous sheet wherein said sheet is heated to a thermoplastic temperature, conformed to a mold or form and subsequently cooled to provide a rigid shaped sheet, the improvement which comprises applying to said sheet prior to thermoforming a coating comprising a water dispersion of a salt selected from the group consisting of potassium or sodium oleate and mixtures thereof, evaporating the water from the surface of the alkenyl aromatic resinous sheet to deposit thereon a substantially continous coating of the salt, and subsequently thermoforming said sheet.

3,374,302

STRAND TREATMENT PROCESS

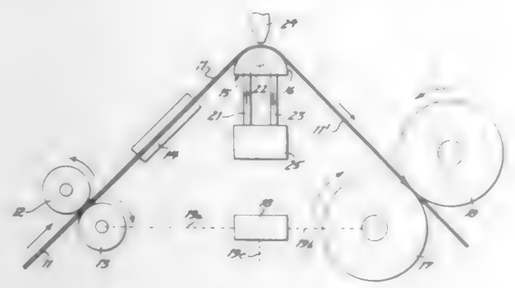
Robert K. Stanley, Media, Pa., assignor to Techniservice Corporation, Lester, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 476,933, Aug. 3, 1965. This application Dec. 6, 1965, Ser. No. 511,929

4 Claims. (Cl. 264—168)

A process of drawing and crimping textile strands is disclosed wherein the strand is pulled slidably over a snubbing surface, with cooling of the side of the strand in contact with the snubbing surface and simultaneous heating of the opposite side of the strand. The strand is withdrawn from the snubbing location and is subsequently relaxed, whereupon it obtains a bulky or crimped configuration. Optional features of the process include preheating the strand uniformly before reaching the snubbing location and withdrawing the strand from the snubbing location under reduced tension and heating it

substantially uniformly. A form of the product is characterized by concavity on the side of the strand



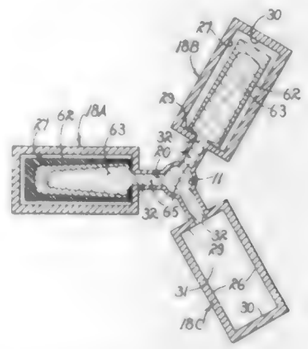
previously cooled in contact with the snubbing surface and by convexity on the opposite side previously heated.

3,374,303
METHOD FOR MANUFACTURING IMPRINTED PLASTIC FILM
Peter J. Metz, Jr., Castro Valley, Calif., assignor to Crown Zeilerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Feb. 14, 1964, Ser. No. 344,857
10 Claims. (Cl. 264—216)

Polyolefin film is extruded in a viscous amorphous state onto a continuously moving chill roll. The film moves with one face in contact with the chill roll and, at a critical area where the polyolefin sets to a substantially solid semicrystalline state, known as the frost line, the film passes through a nip defined by the chill roll and a cooled rotary impression roll to effect impressions on the opposite face of the film.

3,374,304
METHOD FOR INJECTION MOLDING
Richard E. Ayres, Rte. 1, Box 326, Woodlake, Calif. 93286
Filed Aug. 20, 1965, Ser. No. 481,210
2 Claims. (Cl. 264—231)

1. Method of injection molding articles of a selected size and shape to form a plurality of articles of substantially homogeneous thermoplastic materials characteristically prone to shrinkage when cooled from a molten state comprising heating a source of said material to a molten state; injecting under pressure a first quantity of molten material from said source into a first cavity of a plurality of mold cavities, each cavity being formed by a wall having substantially the internal shape and size of the desired end product to be formed and providing an inlet, said injected material filling said first cavity to the wall thereof; cooling the material in said first cavity so that it forms a progressively hardening outer layer and a diminishing molten inner core communicating with the inlet, said material shrinking from the wall during hardening; injecting under pressure a second quantity of molten material from said source distributively into the core in the first cavity and into a second cavity substantially simultaneously to fill said second cavity to the wall thereof and to expand the hardening layer in the first cavity to the wall thereof; cooling the material in said cavities respectively to increase the hardening layer in the first cavity and to form a progressively hardening outer layer and a diminishing molten inner core in the

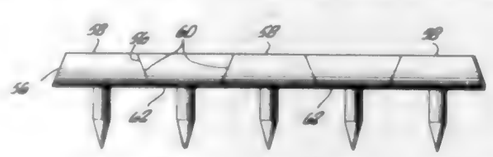


material of the second cavity, said core communicating with the inlet to said cavity, said material in the second cavity shrinking from the wall thereof during hardening; repeating the preceding steps until the material in the first cavity during cooling reaches a degree of substantial conformity with the internal shape of the wall and size of the cavity, each repetitive step including injection of similar molten material under pressure into an additional cavity substantially similar to the first and second cavities so that the total number of cavities utilized equals the number of injection steps necessary to bring the material in the first cavity to said degree of conformity; removing the substantially conforming material from the first cavity; and repeating the steps successively to complete said conformance of the material in the respective cavities and to remove the substantially conforming material in turn from said cavities, the cavities from which the material has been removed being utilized as the respective additional cavities for subsequent injection steps, the individual quantities of material removed from the respective cavities forming molded substantially homogeneous articles.

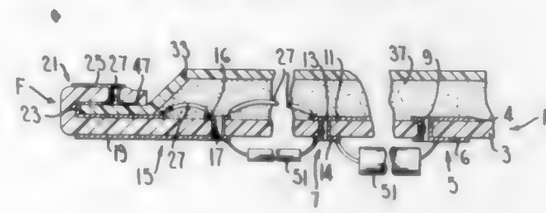
ELECTRICAL

3,374,305
ELECTRIC CIRCUIT
Richard R. Bower, 10012 Wilbur Ave., Northridge, Calif. 91324
Filed Mar. 21, 1966, Ser. No. 536,015
10 Claims. (Cl. 174—68.5)

A series of elongated electrical conductors is disposed in intersecting grooves in a sheet or a board. Each conductor includes a shank to form a T-shaped cross section providing outwardly-extending portions of the conductor on opposite sides of the shank and disposed in a respective groove. The shanks extend into the board or support to anchor the conductors in place. The ends of the conductors are in electrical contact with each other to form an electrical circuit.

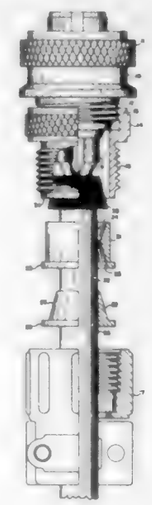


3,374,306
PRINTED CIRCUIT BOARD
Allen C. Bradham III, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Sept. 12, 1966, Ser. No. 578,647
2 Claims. (Cl. 174—68.5)



1. A circuit board comprising:
a dished back,
a substantially flat insulating sheet covering said back,
conductive elements disposed on the outside and inside surfaces of the sheet, at least some of which elements being interconnected through the sheet,
inside wiring connecting at least some of the inside conductive elements and a cured solid plastic containing said wiring and connecting the back and the sheet to form a rigid unit.

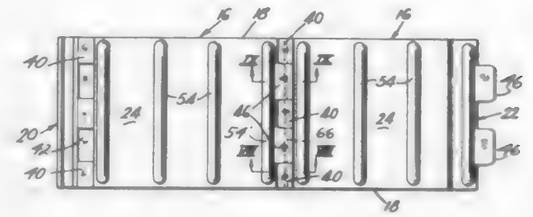
3,374,307
ELECTRICAL CONNECTOR
Theodore J. Rauen, Suitland, Edwin Clarence Myers, Jr., Temple Hills, and Arthur B. Cooke, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 28, 1966, Ser. No. 532,536
2 Claims. (Cl. 174—89)



An electrical connector for insuring a positive electrical contact between the shield of an electrical cable and a connector. Specially shaped concentric rings are so related to the shield that the shield is secured between the concentric rings. The concentric rings are then held in place by coupling nuts which secures the connector with a desired connection.

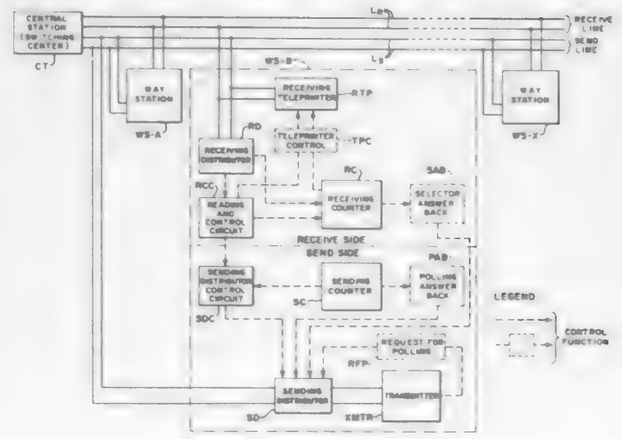
3,374,308
CONDUIT INSULATING SPACER
Carroll J. Haas, Mendon, Mich., assignor to Research Molding, Inc., Mendon, Mich., a corporation of Michigan
Filed Sept. 12, 1966, Ser. No. 578,703
12 Claims. (Cl. 174—138)

An electrically insulating spacer for conduits mounted within housings consisting of a plurality of dielectric segments interconnected to form an annular collar about the



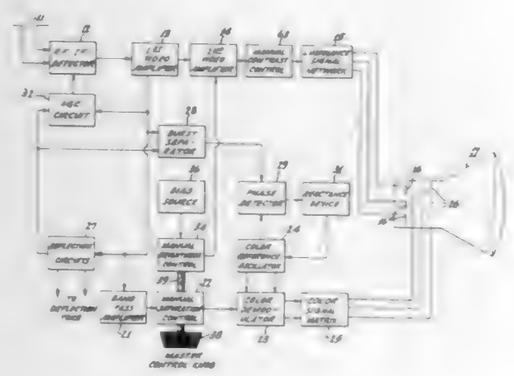
conduit, spacing projections being defined upon the segments from the material of the segments.

3,374,309
DUPLEX WAY STATION SELECTOR
John Elich, Staten Island, and Vincent C. Kempf, South Ozone Park, N.Y., assignors to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed Mar. 30, 1964, Ser. No. 355,541
15 Claims. (Cl. 178—2)



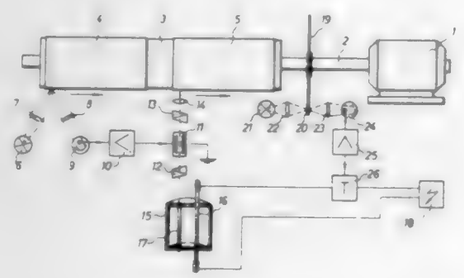
1. In a telegraph system, in combination:
(a) a central station;
(b) a plurality of way stations;
(c) a line circuit arranged for duplex operation interconnecting the central station and the way stations;
(d) a message recorder at each way station;
(e) a recorder control means at said recorder for blinding and unblinding said recorder to message and control signals;
(f) a receiving distributor connected to said line circuit for receiving signals from the central station;
(g) reading means connected to said receiving distributor for reading a sequence of way station selection characters sent from the central station;
(h) a receiving counter capable of assuming a predetermined number of counting states;
(i) signal transmission means at each way station connected to said line circuit for transmitting answer-back signals to the central station; and
(j) circuit means interconnecting said receiving counter with said receiving distributor, with said reading means, and with said signal transmission means, whereby control signals are received by said receiving distributor, messages are recorded by said recorder and answer-back signals are sent by said signal transmission means, only during counting states of said receiving counter in a receiving program determined and controlled by said counter.

3,374,310
COLOR TELEVISION RECEIVER WITH SIMULTANEOUS BRIGHTNESS AND COLOR SATURATION CONTROLS
George L. Beers, 410 Peyton, Ave., Haddonfield, N.J. 08033
Filed Aug. 23, 1965, Ser. No. 481,817
12 Claims. (Cl. 178—5.4)



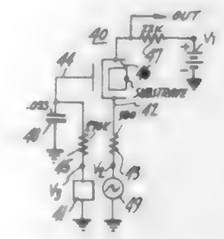
A color television reproducing system is provided with a master control which permits the average brightness of the reproduced color image to be varied as desired while maintaining the subjective saturation of the reproduced color image substantially unaltered. This is accomplished by causing the color saturation control of the color television reproducing system to vary simultaneously with the brightness control.

3,374,311
PRODUCING PRINTING BLOCKS, PREFERABLY INTAGLIO PRINTING BLOCKS
Rudolf Hell, Kiel, Germany, assignor to Dr.-Ing. Rudolf Hell Kommanditgesellschaft, Kiel-Dietrichsdorf, Germany, a German company
Filed Aug. 27, 1963, Ser. No. 304,995
Claims priority, application Germany, Sept. 1, 1962, S 46,818
7 Claims. (Cl. 178—6.6)



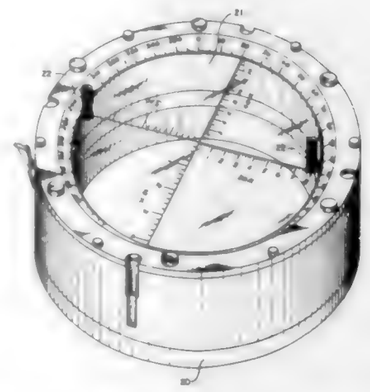
1. A system of producing printing blocks, preferably intaglio printing blocks, from single-colored or multicolored picture or text copies, by photoelectrically scanning such originals to be reproduced and removing continuously variable and controllable amounts of material from the surface of such blocks under the control of such scanning, comprising evaporating the material on the surface of such blocks in atmospheric pressure by a very highly bunched, monochromatic bundle of light rays of high power density being focused on to said surface of said blocks, and modulating said bundle of light rays by the photocell signals.

3,374,312
CLIPPING CIRCUIT UTILIZING AN INSULATED-GATE FIELD-EFFECT TRANSISTOR
Lucius P. Thomas, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 12, 1964, Ser. No. 344,272
18 Claims. (Cl. 178—7.3)



A clipping circuit including an insulated-gate field-effect transistor biased so as to be rendered conductive only upon applied signals exceeding a predetermined voltage level. In a synchronizing signal separator arrangement for use in a television receiver environment, independent control of the aforementioned predetermined voltage enables design for optimum noise immunity and signal response.

3,374,313
CATHODE RAY TUBE OVERLAY INCLUDING A ROTATABLE DISC WITH A PLURALITY OF RANGE SCALES
Robert H. Mathes, Hillcrest Heights, and Lauro C. Ricalzone, Forest Heights, Md., assignors to the United States of America as represented by the Secretary of the Navy
Original application Apr. 12, 1962, Ser. No. 188,006. Divided and this application Mar. 30, 1964, Ser. No. 357,015
2 Claims. (Cl. 178—7.83)

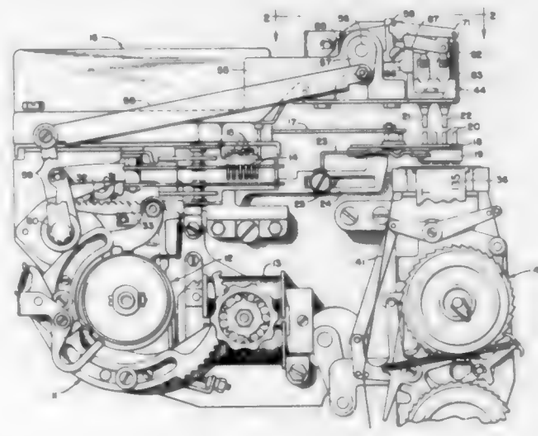


This invention is directed to an overlay for a cathode ray tube. The overlay includes a transparent rotatable disc which has a plurality of radially extending range scales which cooperate with the sweep on the scope to determine range of a target displayed by the scope.

3,374,314
STOCK QUOTATION PRINTER
Otto P. Geilich, Addison, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Mar. 17, 1964, Ser. No. 352,460
7 Claims. (Cl. 178—34)

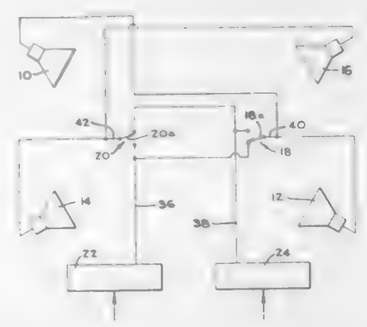
1. A print hammer selector and actuator for a stock quotation printer having code bar controlled means for aligning two rows of type in position for printing comprising,

a print hammer actuating shaft oscillated through a predetermined arc in each cycle of the printer;
a pair of print hammer actuators each having a cam surface;
an interposer member actuated by said shaft and shiftable with respect to said shaft into operative relation to one of said cam surfaces by one of said code bars to actuate said print hammer actuator upon oscillation by said shaft in one direction;
a print hammer lever individual to each hammer actuator and positively moved by its hammer actuator to a set position;



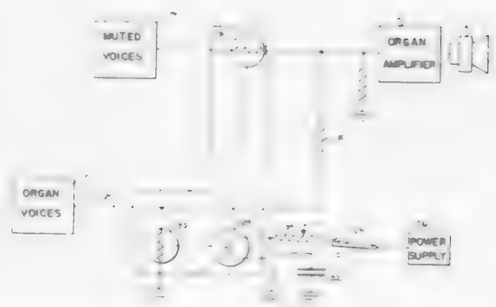
a print hammer attached to each print hammer lever for actuation thereby;
means for urging said hammer actuator to snap said hammer lever to printing position;
a latch for temporarily holding said actuator lever in said set position; and
means actuated by said shaft in its oscillation in the opposite direction for tripping said latch to render the urging means operative.

3,374,315
SOUND REPRODUCTION SYSTEM
Harold Sterling Gladwin, Jr., 19467 Los Gatos Road, Saratoga, Calif. 95070
Continuation of application Ser. No. 33,181, June 1, 1960. This application Feb. 21, 1964, Ser. No. 347,078
1 Claim. (Cl. 179—1)



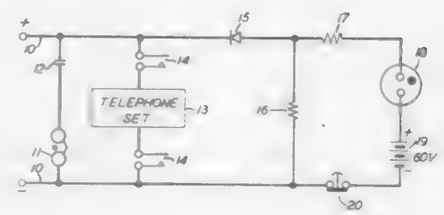
A sound reproduction system including a plurality of electro-acoustic transducers, such as loud-speakers, and a plurality of sources of sound current for energizing such transducers together with switching means for alternatively switching different sources of sound currents to different transducers.

3,374,316
CIRCUIT FOR ELECTRONIC ORGAN FOR PRODUCING MUTED VOICES BY THE USE OF PHOTOSENSITIVE CELLS
Mathew A. Slaats and Alan B. Welsh, Jasper, Ind., assignors to Jasper Electronic Mfg. Corp., Jasper, Ind., a corporation of Indiana
Filed Nov. 9, 1964, Ser. No. 409,675
7 Claims. (Cl. 179—1)



Two sources are selectively switched to a common input by placing a photocell in series with one source and another photocell in shunt across the second source. Both photocells are illuminated simultaneously by the same controllable light source.

3,374,317
TELEPHONE SIGNALING SYSTEM
Daryl M. Chapin, Basking Ridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Original application Mar. 12, 1964, Ser. No. 351,353, now Patent No. 3,322,903, dated May 30, 1967. Divided and this application Dec. 28, 1966, Ser. No. 623,153
5 Claims. (Cl. 179—84)

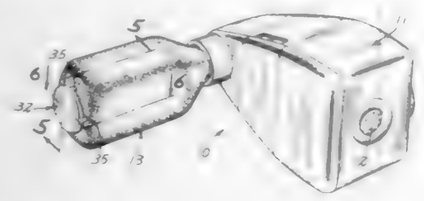


A "called-when-you-were-out" indicator for subscriber telephone is disclosed which detects the ringing signal by breaking down a gas tube in response to the increased peak voltage. The tube sustains conduction with the normal line voltage and can be made to flash or to hold a steady on signal until manually reset. Once it has been broken down, the indicator continues to give either a continuous or a flashing signal until it is manually reset by the subscriber.

3,374,318
WAX GUARD FOR HEARING AIDS
Richard T. Martin, Minneapolis, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 1, 1965, Ser. No. 444,551
9 Claims. (Cl. 179—184)

5. In an in-the-ear hearing aid having an elongated boot with a sound-emitting aperture in one end thereof, said boot adapted for insertion in the ear canal of a user with the sound-emitting aperture adjacent the user's eardrum, the improvement comprising:

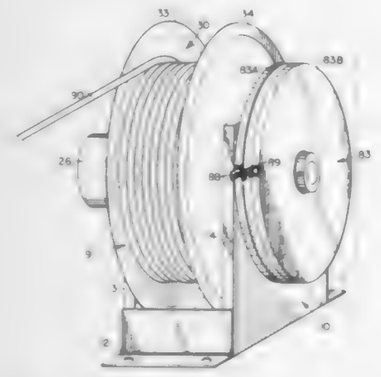
(a) a cover member mounted to overlie the sound-emitting aperture of said boot and spaced from the output end thereof;



(b) said cover member being movable toward and away from said boot; and

(c) said cover member having a surface area sufficient to close off said sound-emitting aperture when the cover member contacts said boot.

3,374,319
CABLE TAKE-UP REEL
Bernhardt Stahmer, 1509 Chicago St., Omaha, Nebr. 68102
Filed Apr. 25, 1966, Ser. No. 544,984
8 Claims. (Cl. 191—12.4)



1. A cable take-up reel for an output power cable comprising:

(A) a frame member including at least one side panel,

(B) an elongate shaft revolvably supported by the at least one side panel of the frame member, said elongate shaft being revolvable about the longitudinal central axis thereof, said shaft having a bore along the longitudinal axis commencing at the shaft first end, said shaft having a medial lateral slot intersecting said longitudinal bore,

(C) a spool member surrounding said elongate shaft and integrally joined thereto so as to be directly revolvable with said shaft, said spool having a fixed longitudinal relationship along said shaft, said spool member comprising a cylindrical drum band and a pair of opposed flanges integrally attached to the respective ends of the intervening drum band, said drum band having a lateral opening overlying the medial lateral slot of the elongate longitudinal shaft,

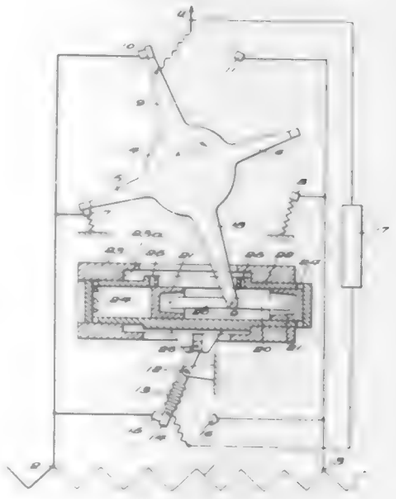
(D) a stationary housing attached to the frame member for protectably surrounding the elongate shaft first end, said housing including an entrance ring portion for passage of an input power cable to the shaft first end,

(E) revolvable joint means for conveying the power from the input power cable to the output power cable, said revolvable joint means including an intermediate power cable leading from the shaft medial lateral slot and having a terminal end at the drum band opening, the terminal end of the intermediatae cable at the drum band opening having a coupling device to engage the output power cable,

(F) a cover member removably attached to the spool drum band across the lateral opening thereof, said cover member including an opening for passage of the output power cable, the coupling device at the terminal end of the intermediate cable being attached to the interior side of the cover member, and

(G) a spring means removably attached to the exterior side of the frame member side panel adjacent to the elongate shaft second end, said spring means being connected between the frame member and the second end of the elongated shaft.

3,374,320
TAP-CHANGING DEVICE FOR TRANSFORMERS HAVING LOAD CURRENT DIVERTER MEANS AND IMPROVED HYDRAULIC FOLLOWER MECHANISM THEREFOR
Karl Bühler, Nussbaumen, and Heinz Trachsel, Ennet-Baden, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Oct. 24, 1966, Ser. No. 588,824
Claims priority, application Switzerland, Nov. 2, 1965, 15,103/65
6 Claims. (Cl. 200—18)



A switching mechanism for diverting current when changing taps on a transformer comprises a multi-armed oscillatable diverter switch actuated when a tap change is made. One arm of the diverter switch controls a set of main contacts connected to the taps, two other arms control sets of quenching contacts in parallel with the main contacts and a fourth arm is articulated to piston elements of an oil-immersed hydraulic follower mechanism which includes a guide sleeve within which the pistons reciprocate, the guide sleeve itself also being reciprocated by the pistons within a stationary cylinder, and a contact arm articulated to the guide sleeve is oscillated by the latter to connect in a diverter resistance in the circuit of the main contacts.

3,374,321
DIRECTION SIGNAL AND DIMMER SWITCH ACTUATOR
Elmer F. Trarbach, St. Clair Shores, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Continuation of application Ser. No. 150,416, Nov. 6, 1961. This application Apr. 22, 1965, Ser. No. 450,156
7 Claims. (Cl. 200—61.27)

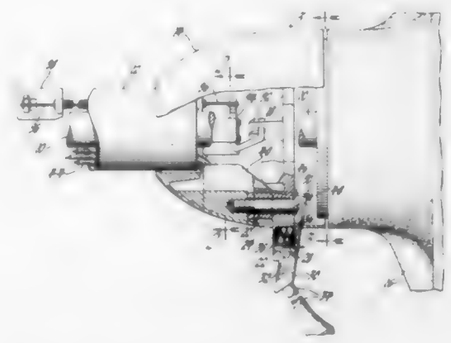
1. A combination direction signal and headlight dimmer switch actuator comprising a housing,

a direction signal actuator ring pivotally mounted on the housing for movement about a first axis,

a manually controlled operating lever mounted near one end of the ring moving the ring about the first axis and pivoted to the ring for movement about a second axis transverse to the first axis,

a direction signal switch connected with the ring for actuation upon pivoting the ring about the first axis,

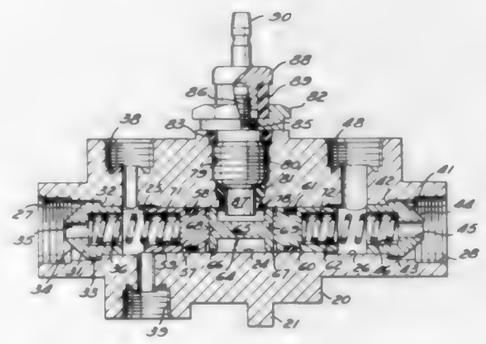
a dimmer switch secured to said housing,



a wire link connected between said one end of the lever and the dimmer switch for actuating the dimmer switch upon movement of the operating lever about the second axis,

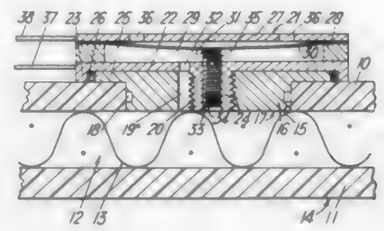
and a spring member acting between the ring and the lever for resiliently biasing the lever in one direction about the second axis.

3,374,322
DUAL BRAKE SYSTEM SAFETY DEVICE
Paul J. Miller, Maple Heights, Ohio, assignor to The Weatherhead Company, a corporation of Ohio
Filed Oct. 6, 1966, Ser. No. 584,780
3 Claims. (Cl. 200—82)



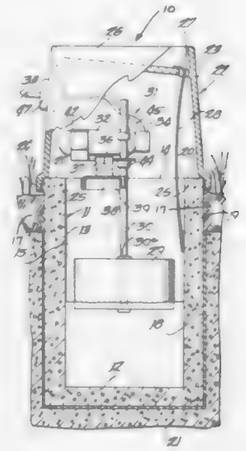
A dual brake system including a switch operable to produce a signal responsive to a pressure unbalance between the two fluid lines. The switch includes a bore containing a piston assembly exposed to the two pressures at opposite ends. The piston assembly has two sealing members spaced apart by a spacer having two end walls and a portion of reduced diameter between them. The piston assembly constitutes one switch element and is centered by means of springs so that upon a pressure unbalance the piston assembly moves from a centered position causing one of the end walls to engage a second switch contact in the form of a stud projecting into the bore to complete the electric circuit and produce the signal. The sealing members engage the spacer only near the axis so that cocking forces produced by contact between the spacer end walls and the stud are not transmitted to the sealing members.

3,374,323
PRESSURE RESPONSIVE DEVICE FOR ACTUATING AN ALARM
Cecil H. Peek and Kenneth R. Peek, both of 2 Russell Drive, Stanwell, Middlesex, England
Filed Apr. 7, 1966, Ser. No. 540,865
Claims priority, application Great Britain, Apr. 14, 1965, 16,123/65; Jan. 11, 1966, 1,333/66
7 Claims. (Cl. 200—83)



A pair of panels defining a hermetically sealed cavity placed under a controlled air pressure and having a switching means associated therewith which is responsive to a predetermined change in the air pressure to actuate an external circuit such as a relay alarm system.

3,374,324
MOISTURE CONTROL APPARATUS
James G. McGrann, R.R. 2, Bloomington, Ill. 61701
Filed June 24, 1964, Ser. No. 377,552
5 Claims. (Cl. 200—84)



1. An apparatus for alternately completing and interrupting an electrical circuit in response to a reduction in moisture in soil surrounding said apparatus and in response to a delivery of a predetermined quantity of water to the vicinity of the apparatus, said apparatus including a hollow concrete block having bottom and side walls and an open top leading to a cavity in said block, a waterproofing material covering the exterior surfaces of the bottom wall and lower portions of the side walls of said block to form the lower portion of the block into a watertight container, said block being insertable in soil with the top thereof positioned adjacent the top of the soil and having upper and non-waterproofed portions of said side walls in contact with upper layers of said soil to function as a wick to transfer water from said cavity to said upper layers of said soil, a mercury switch rigidly supported on a carriage mounted above said cavity for pivotal movement about a horizontal axis, said mercury switch having lead-in wires adapted to be connected to an electric circuit with the switch being adapted to alternately interrupt and complete said electric circuit upon pivotal movement about said horizontal axis, a float positioned in said cavity for vertical movement in response to changes in

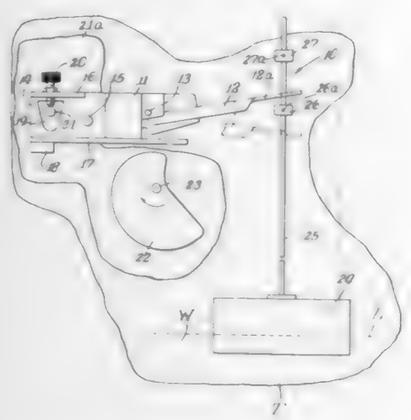
the water level in the cavity, an elongated rod rigid with and extending upwardly from said float and through an opening in said carriage for guided vertical movement relative thereto, stops spaced apart longitudinally along said rod and engageable with said carriage to transmit movement of the rod to the carriage, said stops being adjustable along the length of said rod to be engageable with said carriage when said float is moved to predetermined vertical positions in said cavity in response to changes in said water level, and means to collect a portion of water delivered to the vicinity of the apparatus and transfer it to said cavity.

3,374,325

PIVOTALLY MOUNTED SWITCH HAVING ACTUATING MEANS ENGAGEABLE WITH A JUXTAPOSED MANUALLY SETTABLE CAM FOR ADJUSTABLY OPERATING SAID SWITCH AS A FUNCTION OF DIFFERENCES IN A LIQUID LEVEL BEING SENSED

David C. Eisendrath, Chicago, Ill., assignor to Cory Corporation, a corporation of Delaware

Original application Oct. 21, 1965, Ser. No. 499,307, now Patent No. 3,297,844, dated Jan. 10, 1967. Divided and this application Aug. 18, 1966, Ser. No. 573,316
9 Claims. (Cl. 200—84)



A control for providing a signal responsive to a variation in a liquid level. The control includes a switch mounted on a substantially rigid member which is pivoted about a horizontal axis and which is swung about the axis by means of a float device responsive to a variation in a liquid level being sensed. A manually adjustable cam is disposed in the path of movement of the switch to be engaged by an operator thereof at different positions as a function of the setting of the cam. A second operator associated with the switch is engageable with an adjustable screw device for operating the switch at an upper limit of travel of the float.

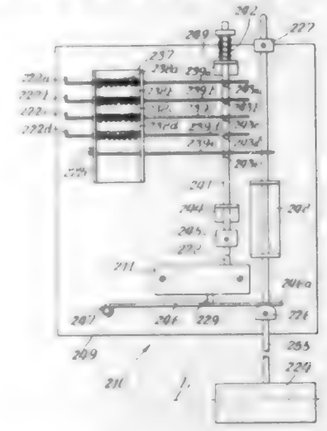
3,374,326

CONTROL RESPONSIVE TO VARIATIONS IN LIQUID LEVELS

David C. Eisendrath, Chicago, Ill., assignor to Cory Corporation, a corporation of Delaware

Original application Oct. 21, 1965, Ser. No. 499,307, now Patent No. 3,297,844. Divided and this application Aug. 18, 1966, Ser. No. 573,319
8 Claims. (Cl. 200—84)

A control for providing a signal corresponding to a variation in a liquid level wherein a plurality of vertically spaced adjustbly positionable actuators are arranged to be selectively movable from a retracted position to an operating position for engagement by a float operated structure to control a switch, whereby the switch is operated at any selected one of a plurality of different levels of the liquid corresponding to the selected one of the actuators. The control is useful in selecting different quantities



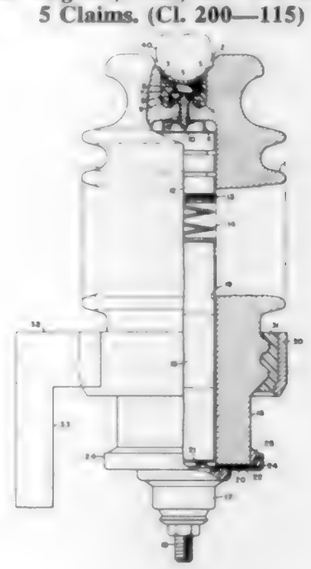
of water to be delivered to a coffee brewing apparatus as for making different numbers of cups of coffee.

3,374,327

LINE INSULATOR-LIGHTNING ARRESTER

Robert J. Lawrence and Charles H. Carothers, Bloomington, Ind., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 31, 1965, Ser. No. 484,047
5 Claims. (Cl. 200—115)



The invention comprises a combination of a rugged power line insulator and lightning arrester, the lightning arrester being supported inside the insulator. The line connecting end of the insulator is provided with a recess and bore, the recess supporting a concave-shaped electrical terminal for seating the line conductor. The recess is filled with a sealing cement, the cement securing an electrical conductor in the bore, the conductor extending between the arrester inside the insulator and the concave-shaped terminal.

3,374,328

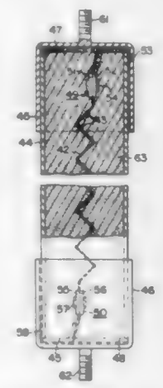
CARTRIDGE-TYPE FUSE WITH EXPLOSION POTS

Frank L. Cameron, North Huntingdon Township, Irwin, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 15, 1965, Ser. No. 487,408
5 Claims. (Cl. 200—120)

1. A self-protecting fuse comprising a fuse tube, first and second ferrules at the ends of the fuse tube respectively, a fuse element disposed within the fuse tube, first and

second terminal rings disposed between the ends of the fuse tube and adjacent the first and second ferrules respectively, the terminal rings being composed of conductive material and making electrical contact with the ferrules respectively, each of the terminal rings having a tab extending therefrom with a bore therein, the adjacent end of the fuse element passing through the bore in the tab and thence passing around the outside of the adjacent end of the fuse tube and being forced against the outer wall of the fuse tube and the inner wall of the ferrule, a pin disposed within the bore of each tab and fastening the fuse element in place therein, a granular arc-ex-



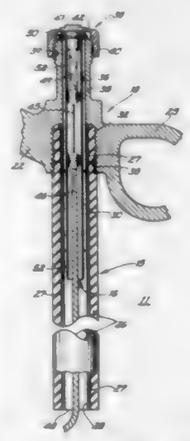
tinguishing material filling the space within the fuse tube, both the tabs being of sufficient length whereby, while the fuse is mounted with its longitudinal axis in a vertical position, the upper tab extends beneath the surface of the granular arc-extinguishing material and the bore thereof remains within the granular arc-extinguishing material, the fuse element upon melting due to a large overload current or a sustained small overload current starting an arc which burns back towards the ends of the fuse tube, the tab extending beneath the surface of the granular arc-extinguishing material preventing the arc from reaching the adjacent ferrule and damaging said last-named ferrule.

3,374,329

FUSE CUTOUT

Raymond J. Bronikowski, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,840
5 Claims. (Cl. 200—127)



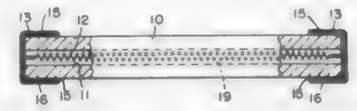
A fuse cutout comprising a fuse tube having a frangible cap at one end and being opened at its other end and a fusible element disposed within said tube wherein the fuse tube bore is composed of an arc extinguishing gas evolving material and a metallic insert as disposed within the bore and insulated from terminal means at the opposite ends of the fuse tube.

3,374,330

CURRENT LIMITING FUSE

Frank L. Cameron, North Huntingdon Township, Irwin, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 19, 1966, Ser. No. 543,745
8 Claims. (Cl. 200—132)



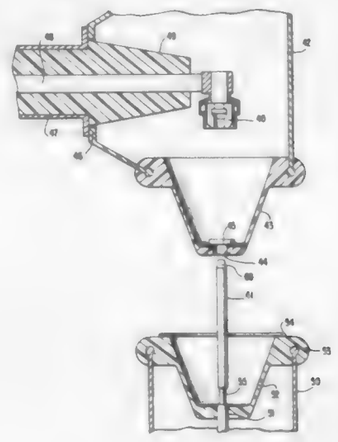
A fuse which may be easily and quickly assembled without the necessity of soldered connections includes a spirally wound fuse element passing through a fuse tube, the element having end portions of enlarged diameter formed by crimping copper straps to the ends of the fuse element, which are bent around the ends and outside wall of the fuse tube, the enlarged ends of the fuse element and the portions of the outside wall of the fuse tube adjacent the ends thereof being coated with an epoxy resin containing a large number of conductive particles, such as silver, to form a conductive cement. The ferrules are then forced down over the ends of the fuse tube and the enlarged ends of the fuse element including the crimped straps, the conductive cement resin cementing the ferrules to the fuse tube and cementing the fuse element ends to the ferrules while providing electrical connections between the ends of the fuse element and the ferrules. The enlarged diameters of the ends of the fuse element increases the surface area in contact with the conductive cement thereby forming a better electrical connection. The increased surface area in contact with the cement also insures a better bond. The cement quickly sets at room temperature. The crimped copper straps extend far enough into the bore in the fuse tube to prevent an arc burning back to the ferrules.

3,374,331

ELECTRICAL COUPLING IN WHICH MAKING AND BREAKING OF CONDUCTORS IS WITHIN CASING FILLED WITH AN INSULATING MEDIUM

Gerhard Brockhaus, Heiligenhaus, Bezirk Dusseldorf, and Günter Leonhardt and Heinz Weber, Ratingen, Germany, assignors to Calor-Emag Elektrizitats-Aktiengesellschaft, Ratingen, Germany

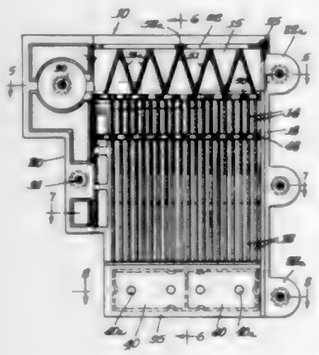
Filed May 26, 1965, Ser. No. 458,982
Claims priority, application Germany, May 27, 1964, C 32,984
10 Claims. (Cl. 200—144)



This invention relates to improvements in high tension conductors, the making and breaking of the electrical

contacts of the circuit of which takes place in a casing filled with an insulating medium. The principal advantage of this construction enables the disengagement of the electrical contacts within the insulated casing and withdrawal of one contact from the casing without appreciable loss of the insulating medium.

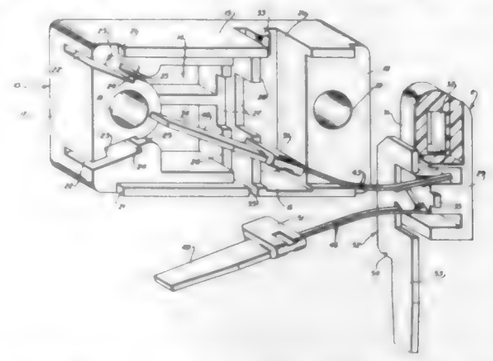
3,374,332
ARC CHUTE FOR A CIRCUIT BREAKER
Fred Bould, Pittsburgh, Pa., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed July 16, 1965, Ser. No. 472,427
6 Claims. (Cl. 200—144)



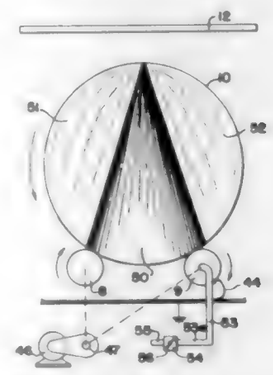
1. An arc chute for confining and extinguishing an arc formed between separable electric contacts, said arc chute comprising a wall structure having front and rear walls and a pair of side walls defining an arcing chamber, said side walls having respective inwardly-directed flange portions along their lower margins extending inwardly toward each other, a pair of recesses in said inwardly-directed flange portions, respectively, a pair of magnetizable plate means disposed in said recesses, respectively, a plurality of conductive magnetizable plates, each of said side walls having a plurality of horizontally-spaced grooves in its inner face extending upwardly from said inwardly-directed flange portion thereof toward the top edge thereof, said magnetizable plates respectively having their side edge portions received, respectively, in aligned pairs of said grooves at the lower portions thereof, a lower perforated baffle plate resting on the top of said magnetizable plates, a plurality of insulating plates, said insulating plates respectively having their side edge partions received respectively in aligned pairs of said grooves above said lower baffle plate and being supported by said lower baffle plate, an upper perforated baffle plate resting on the top of said insulating plates, a sinuous metal screen resting on said upper baffle plate, a retaining frame, a pair of horizontally disposed grooves in said side wall portions adjacent the upper edges thereof, respectively, and said retaining frame being slidably received in said horizontal grooves and overlying an edge portion of said metal screen.

3,374,333
PUSHBUTTON SWITCHES WITH AT LEAST ONE FLEXIBLE CANTILEVERED SPRING LEAF CONTACT CONTINUALLY PRESTRESSED BY A PUSHBUTTON
Fred A. Anderson, Collinsville, Conn., assignor to Royal Typewriter Company, Inc., Hartford, Conn., a corporation of Delaware
Filed Feb. 1, 1967, Ser. No. 613,225
6 Claims. (Cl. 200—164)

A pushbutton switch having at least one flexible cantilevered movable contact continually normally prestressed by a pushbutton and controlled thereby for movement toward encounter with but short of unstressed condition, a fixed contact having a contact surface angularly disposed relative to the path of movement of said movable contact to effect a bounceless high pressure wiping contact.



3,374,334
HIGH FREQUENCY HEATING SYSTEM
Boyd R. Hopkins, Louisville, Ky., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,576
1 Claim. (Cl. 219—10.69)

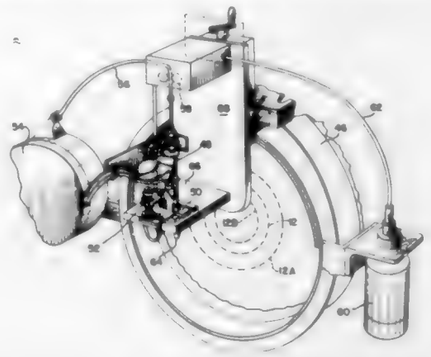


1. In a high frequency dielectric system for heating cylindrical dielectric material to a predetermined desired temperature between a pair of spaced electrodes in a high frequency dielectric heating system, the combination comprising a roller forming an electrode and an additional electrode defining spaced electrodes, an additional roller defining a pair of elongated rollers with said first roller for supporting said material in heating position between the electrodes with the axis of said material and of said rollers parallel to each other and to said additional electrodes; drive means for rotating at least one of said rollers to rotate said material continuously about its axis while maintaining said axis in place in heating position; and high frequency power means connected to said electrodes for heating said material to said predetermined desired temperature.

3,374,335
METHOD OF ARC WELDING A CIRCULAR JOINT
James W. Reesor, Richmond, Va., and George W. Frehafer, Valencia, Pa., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Dec. 8, 1964, Ser. No. 416,848
14 Claims. (Cl. 219—60)

1. A method comprising: aligning two substantially equal diameter aluminous cylindrical pipes with contiguous ends and with their central axes substantially aligned, said contiguous ends having been shaped to form a circular fillet receiving groove, each contiguous end having an end land with substantially coaxial inner and outer cylindrical surfaces, the outer cylindrical surface of

said land joining an outwardly beveled pipe end edge extending outwardly from its respective land at an angle to a plane perpendicular to said outer cylindrical surface, the contiguous outer ends of said lands substantially butting each other to form a fillet receiving circular opening; and placing a fillet in said groove and circular opening by circularly passing a welding arc forming aluminum



alloy electrode wire having the characteristics of the group forming series No. 5000 aluminum alloys longitudinally directed toward said groove; discharging an inert gas around said electrode wire and into said groove; charging said electrode wire relatively to the charge on said pipes to form an arc with an arc forming intensity in the order of 200,000–250,000 amperes per square inch of electrode transverse area.

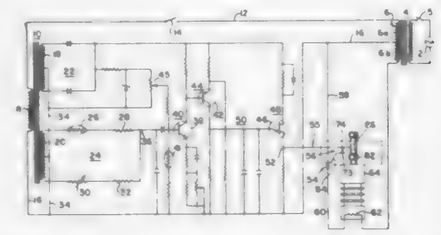
3,374,336
INFINITE HEAT SWITCH FOR AN INFRARED HEATING UNIT
James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 3, 1965, Ser. No. 452,719
2 Claims. (Cl. 219—452)

In preferred form, an improved infinite controlled heat switch for an infrared surface unit wherein a thermally responsive pulser and voltage selector switch provide a low voltage circuit with relatively long "on-off" pulsing cycle periods for low preselected temperatures and a high voltage circuit with shorter "on-off" pulsing cycle periods for higher preselected temperatures.

3,374,337
THERMAL ACTUATOR AND CONTROL THEREFOR
Billy Burley, Dallas, Tex., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Continuation-in-part of application Ser. No. 250,677, Jan. 10, 1963. This application Aug. 28, 1964, Ser. No. 393,496
9 Claims. (Cl. 219—501)

A thermal actuator control system includes a normally closed limit switch connecting the gate of a silicon controlled rectifier (SCR) to a signal supply. The power electrodes of the SCR are connected in series with a heating resistor of the actuator. A wax is disposed within a cylinder having a shaft journaled in one end as a piston. The heating resistor is embedded within the wax and produces a mechanical motion as a result of the volumetric change in the wax. The resistor is a spiral wound coil located within the chamber with a generally U-shaped configuration having the outer end secured as the connecting electrodes or terminals in the outer end of the cylinder and having a base extending around the inner portion of the movable shaft. The limit switch carries only very low gate current and voltage and is a floating contact type responsive to incremental movements of the order of micro inches of the actuator shaft.

A condition-responsive means produces an alternating current signal voltage the magnitude and phase of which are a function of the deviation of the condition from a predetermined value, and means including an R-C network and the limit switch applies the signal voltage to the gate of the SCR to vary the conduction angle thereof and the effective level of the D.C. current flowing through the heating resistor. The limit switch includes an insulating mounting base disposed within an end chamber of the thermal actuator cylinder with the actuating shaft passing

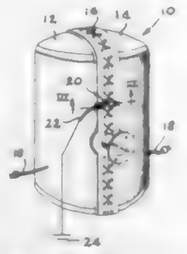


through a central opening. A leaf spring is resiliently mounted as a cantilevered member to the base plate with a breaker member encircling the shaft and clamped between the spring and plate. The breaker member has a diameter somewhat less than the opening in the base plate. A collar on the shaft will pass through the base plate opening into engagement with the breaker to transmit the final shaft motion to the spring. The free end of the spring is aligned with and is tensioned to engage a fixed contact on the base. The silicon controlled rectifier is secured to the back side of the base to form an integral subassembly with the gate terminal in series circuit with the switch contacts. A two-part seal seals about the shaft at the exit opening of the thermal cylinder and includes an encircling rubber member and a thin plastic wafer encircling the shaft and bearing on a planar surface of the cylinder. The rubber member is of a substantial axial length and includes an inner step face projecting inwardly into the expansion chamber and a thin sealing lip adjacent the shaft. The plastic wafer has a central opening through which the shaft projects and is formed with a central cone-shaped portion projecting outwardly of the expansible filled chamber. A thin disc is disposed between the rubber member and the adjacent planar surface and constitutes a seal backup.

3,374,338
GROUNDED HEATING MANTLE
Glen H. Morey, Terre Haute, Ind., assignor to Templeton Coal Company, Terre Haute, Ind., a corporation of Indiana
Filed Sept. 29, 1965, Ser. No. 491,301
4 Claims. (Cl. 219—529)

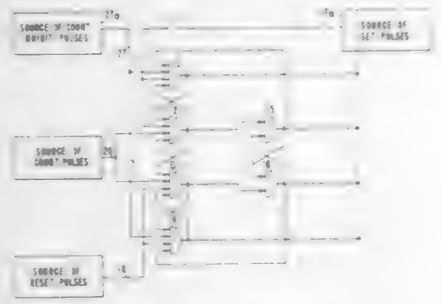
Flexible heating blanket made up of separable parts and having eyelets along the edges to receive lacing to fasten the parts together about an object to be heated

and with flexible electrically conductive coatings on the outer surfaces of said parts insulated from the resistance



heating means carried by the blanket parts but interconnected with each other and to ground.

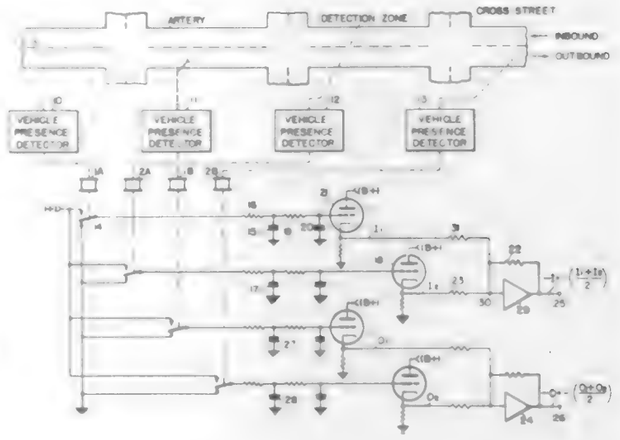
3,374,339
COUNTER AND SHIFT-REGISTER
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Christian Smith, Salisbury, Southern Rhodesia
Filed Dec. 17, 1964, Ser. No. 423,412
11 Claims. (Cl. 235—92)



1. A counting and shifting circuit comprising: a plurality of gating means, each gating means having an output terminal a plurality of input terminals and being characterized by providing an output of a first polarity on said output terminal whenever none of said input terminals is provided with an input signal of said first polarity, each of said gating means being characterized by providing an output signal of a second polarity whenever an input signal of said first polarity is provided to any one of the input terminals thereof; means for interconnecting said first plurality of gating means; count inhibiting means for inhibiting at least some of said gating means whenever said plurality of gating means is operable in a shifting mode; means for energizing some of said gating means with a plurality of shift pulses so as to control the outputs of said plurality of gating means; shift inhibiting means for inhibiting at least some of said gating means whenever said circuit is operable in a counting mode; and means for energizing some of said gating means with counting pulses to provide output pulses as a function of the number of said counting pulses supplied thereto.

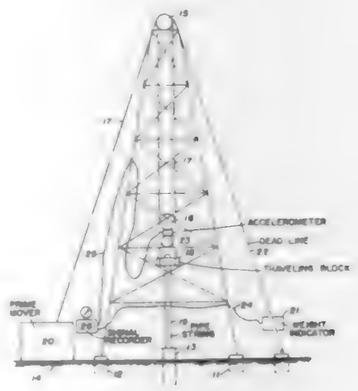
3,374,340
COMPUTATION OF PARAMETERS FOR TRAFFIC CONTROL SYSTEMS
John H. Auer, Jr., and Jerry P. Huffman, Rochester, N.Y., assignors to The General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed July 3, 1963, Ser. No. 292,584
33 Claims. (Cl. 235—150.24)

1. In a traffic monitoring system, amplifier means having an input and an output, means responsive to traffic flow in a first predetermined direction for coupling a signal to said input having a magnitude related to the magnitude of traffic flow in said first direction, variable magnitude signal feedback means between said output and said input of said amplifier means, and means responsive to traffic flow in a second predetermined direc-



tion different from said first direction for varying the magnitude of signal feedback by said signal feedback means in relation to traffic flow in said second direction thereby to produce a resultant signal at said amplifier output jointly related to the traffic flows in both said first and second directions.

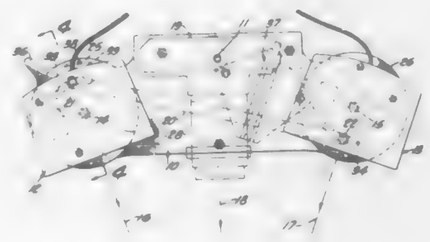
3,374,341
METHOD FOR CONTROLLING PRESSURE DIFFERENTIAL RESULTING FROM FLUID FRICTION FORCES IN WELL-DRILLING OPERATIONS
James A. Klotz, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Nov. 26, 1963, Ser. No. 325,850
6 Claims. (Cl. 235—193)



The fluid friction forces resulting from the movement of a body vertically through a column of liquid cause a pressure differential above or below the corresponding hydrostatic pressure of the liquid column. In various applications, such as the drilling of well bores into subterranean earth formations, direct measurement of this pressure differential is difficult; yet, in many applications, the pressure differential must be controlled within relatively close limits. This invention provides a method for controlling the pressure differential caused by the passage

of a body through a vertical column of liquid below a predetermined value based on measurements external of the liquid column.

3,374,342
PHOTOGRAPHIC ILLUMINATING DEVICE
Ross E. Hutchins, Starkville, Miss.
(P.O. Drawer EH, State College, Miss. 39762)
Filed Oct. 13, 1965, Ser. No. 495,440
6 Claims. (Cl. 240—1.3)

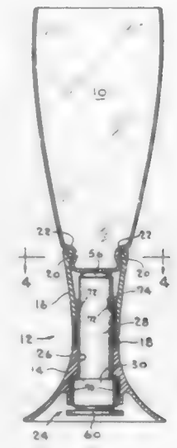


The invention provides a portable, unitary combination of a base which is adapted to hold a camera thereon, together with a pair of illuminators laterally disposed with respect to said camera and affixed to said base but rotatable about parallel axes at right angles to the base and with a linkage such that both illuminators illuminate the same point on the optical axis.

3,374,343
POST LIGHT
Mitchell Bobrick, 605 Erskine Drive, Pacific Palisades, Calif. 90272
Filed Oct. 3, 1966, Ser. No. 583,728
10 Claims. (Cl. 240—3)

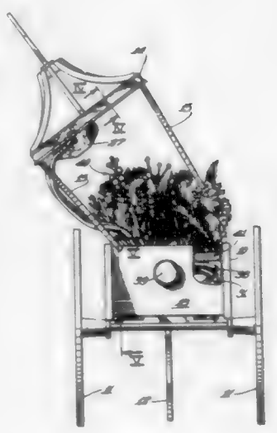
A tubular lamp is supported on a post and has a shade peripherally surrounding said lamp. The shade has a series of adjacent and separate segments around the lamp extending angularly outwardly and downwardly, with a supporting arm near a lower end of each segment inwardly supporting said segment lower end away from the lamp. The shade segments and supporting arms may be pivotal for a collapse thereof closely against the lamp and post.

3,374,344
LIGHTED BEVERAGE GLASS
Ralph H. Rudolph, Plymouth, and David Douglas, Manitowoc, Wis., assignors to Douglas Plymouth Corporation, Manitowoc, Wis., a corporation of Wisconsin
Filed Oct. 12, 1965, Ser. No. 495,139
5 Claims. (Cl. 240—6.4)



A lighted beverage glass comprising a hollow stem and a glass shell member removably mounted thereon. A unitary cartridge assembly slideably inserted into the stem through the base thereof, said assembly including a main body portion and a transparent tip member mounted at one end. A lamp holder member, a bulb, a compression spring and a battery are mounted inside the body portion with the bulb positioned adjacent the transparent tip member. A switch knob member is threaded into the base of the cartridge body and adapted for manual rotation to turn the light bulb on and off. The light passing through the transparent tip of the cartridge assembly passes upwardly through the bottom of the glass shell portion into the liquid thereon.

3,374,345
NOVELTY LAMP CONSTRUCTION
Francis A. Schafer, 2916 Riverside Drive, McHenry, Ill. 60050
Filed Sept. 13, 1965, Ser. No. 486,718
11 Claims. (Cl. 240—10)



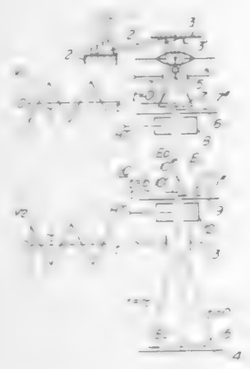
A supporting base provides an upwardly opening receptacle within which is electrical equipment upon which is supported a base panel of a fluorescent display which is

illuminated by a black light electrical lamp tube carried on the underside of a roof panel on a canopy which has a plurality of spaced posts the lower ends of which are notched to engage separably with upper edges of the receptacle walls, certain of the posts having upwardly opening hooks engaged by an elastic strand for hinged rocking to displace the canopy for access to the display and the lamp.

ERRATUM

For Class 240—52 see:
Patent No. 3,374,347

3,374,346
SPECTROSCOPIC ELECTRON MICROSCOPE WHEREIN A SPECIMEN IS IRRADIATED WITH X-RAYS AND THE ELECTRONS EMITTED ARE ENERGY ANALYZED
Hiroshi Watanabe, Kokubunji-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan
Filed July 12, 1965, Ser. No. 470,991
Claims priority, application Japan, July 15, 1964, 39/40,591
3 Claims. (Cl. 250—49.5)

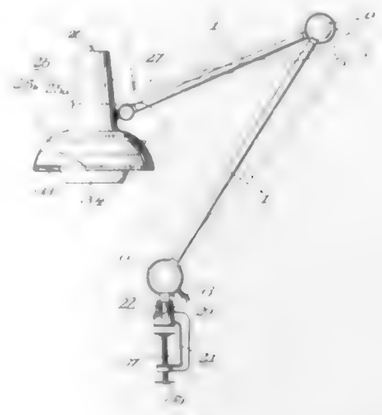


1. A spectroscopic electron microscope comprising means for irradiating the specimen under examination with X-rays of a predetermined wavelength, an objective lens, and an axial arrangement between the objective lens and the imaging plane of the microscope of components including:

a first deflecting device for deflecting the electron image of the specimen formed by the objective lens, a first aperture diaphragm having a small aperture or slit and disposed in the imaging plane of the objective lens, means for energy analysis of the electrons passing in time sequence through said first aperture diaphragm to form the respective points of said image of the specimen, a second aperture diaphragm adapted to allow passage of only those electrons having any desired energy value of all the electrons analyzed by said means for energy analysis, and a second deflecting device for deflecting the rays of monoenergetic electrons passing through said second aperture diaphragm toward their respective positions in the imaging plane of the microscope.

3,374,347
ELECTRIC LAMP STAND
You Hirose, 24–7 3-ban-cho, Chiyoda-ku, Tokyo, Japan
Filed Aug. 23, 1965, Ser. No. 481,480
2 Claims. (Cl. 240—52)

A swivel arrangement including a first member and a second member at least one of which is rotatable with reference to the other about a predetermined axis. Resilient means interposed between the members and connected therewith, such resilient means biasing the members against one another with a force which varies in response to relative angular displacement of said members.



The present invention relates to an electric lamp stand. An object of the present invention is to supply an electric lamp stand consisted of supporting rods in 2 legs or more and swivel joints in 2 legs or more jointing said supporting rods.

3,374,348
CORONA UNIT WITH A TAPERED PASSAGEWAY OF ELECTRICALLY NONCONDUCTIVE MATERIAL BETWEEN CONDUCTIVE HOUSINGS THAT ARE ELECTRICALLY INTERCONNECTED
Ralph G. Ostensen, Morton Grove, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 473,110, July 19, 1965. This application May 9, 1966, Ser. No. 548,799
19 Claims. (Cl. 250—49.5)

1. A corona unit for electrostatically charging a carrier member having a layer of photoactive material serving as a chargeable layer in an electrostatic photocopying process comprising:

(a) a pair of U-shaped elongated housings of conductive material mounted generally parallel to each other and electrically connected together with open sides facing each other and having adjacent side walls, said side walls of the respective housings defining opposed openings and being spaced apart sufficiently to enable the carrier member to pass between said housings in a direction transverse to the longitudinal dimension of said housings;

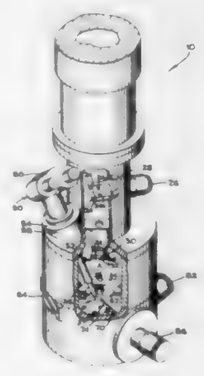
(b) a corona discharge member mounted in each of said housings and insulated therefrom;

(c) means for connecting a source of energizing potential between said corona discharge members, with said corona discharge members being effective to apply through said openings an electrostatic charge to a carrier member passing between said housings; and

(d) insulating means forming a tapered passageway between said housings convergent in the direction of movement of said carrier member providing a relatively wide entrance opening between said housings to permit easy ingress of said carrier member and a comparatively narrow exit opening between said housings for egress of said carrier member to improve uniformity of the electrostatic charge on said carrier member, said insulating means also serving to prevent the carrier member from contacting any conductive portion of said housings and said corona discharge members as the carrier member moves through the corona unit, said insulating means being discontinuous to provide for the substantially unblocked, uniform application of the electrostatic charge by said corona discharge members as the carrier member passes between said housings.

7. In an electrostatic printer, a charging unit comprising: a pair of corona discharge units each having a corona wire mounted within a housing unit, said corona wires being spaced and the housing units arranged to permit passage of a chargeable member therebetween; and a high voltage circuit connected to produce a current discharge between said corona wires including a transformer high voltage secondary winding and rectifier means connected to said secondary winding for producing a direct voltage, said high voltage circuit being free of galvanic connection to any point of reference potential on said printer.

3,374,349
ELECTRON PROBE HAVING A SPECIFIC SHORT-FOCAL LENGTH MAGNETIC LENS AND LIGHT MICROSCOPE
Victor G. Macres, 3385 Louis Road, Palo Alto, Calif. 94303
Continuation of applications Ser. No. 368,448, May 11, 1964, and Ser. No. 86,200, Jan. 31, 1961. This application Nov. 14, 1966, Ser. No. 594,275
4 Claims. (Cl. 250—49.5)

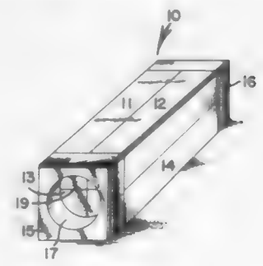


An electron probe including a support for a specimen to be probed, an electron beam directed at said specimen and focused thereon by an adjacent short-focal length lens, and a light microscope for observing the probed specimen.

ERRATUM

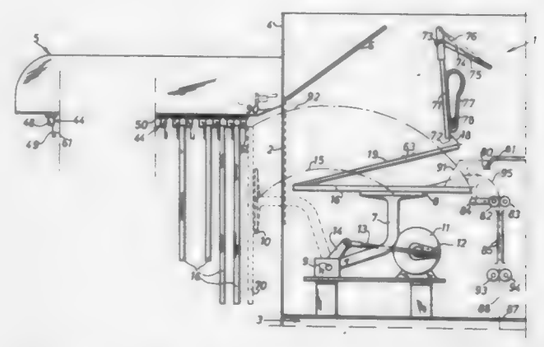
For Class 250—49.5 see:
Patent No. 3,374,346

3,374,350
ALIGNMENT CHECKING DEVICE FOR PENETRATING RADIATION PHOTOGRAPHY APPARATUS
William W. Mills, Jr., Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,771
3 Claims. (Cl. 250—65)



In instrument for aligning a beam from a penetrating radiation source with a rocket motor to be analyzed and a recording device to determine what effects have been caused to the rocket motor by age, temperature ranges and other compatible conditions.

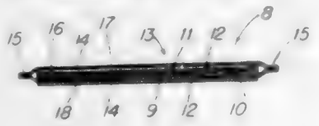
3,374,351
APPARATUS FOR AUTOMATICALLY HANDLING FILM SHEET CASSETTES
Karel Marcel Sano, Borsbeek, and Jan Alfons Stoop, Schilde, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
Filed Oct. 14, 1964, Ser. No. 403,710
Claims priority, application Netherlands, Oct. 15, 1963, 299,222
8 Claims. (Cl. 250—66)



1. Apparatus for automatically handling film sheet cassettes, in particular cassettes containing exposed X-ray film sheets, comprising a plurality of hook means arranged to carry one cassette each, means for supporting and displacing the hook means over a rectilinear course in a substantially horizontal direction and for returning the hook means at the end of their course to the starting point of said course, means for gripping the cassettes at the end of said course, for lifting them from the hook means and for transferring them into a light-tight closed cabinet, and within the reach of means for opening and closing

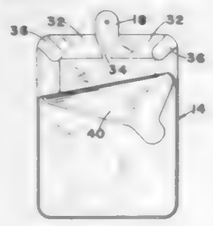
the cover of the cassette, means for thereupon removing the exposed film from the cassette and conveying it to a developing means, a plurality of storage means for different sized X-ray films, means for inserting the proper-sized X-ray film into the cassette, and means for moving the reloaded cassette out of the cabinet.

3,374,352
X-RAY FILM PACKAGE WITH WATER SOLUBLE SEPARATOR AND WATER SOLUBLE LIGHT OPAQUE ENVELOPE
Elihu L. Sachs, 2035 Benedict Ave., Bronx, N.Y. 10462
Continuation-in-part of application Ser. No. 424,728, Jan. 11, 1965. This application Nov. 2, 1966, Ser. No. 591,637
11 Claims. (Cl. 250—68)



An X-ray film package having an X-ray sensitive sheet enveloped by a light-opaque, radiolucent, water soluble plastic film and a radiolucent, water soluble separator between the emulsion of the X-ray sensitive sheet and the envelope to prevent adherence of the envelope to the emulsion.

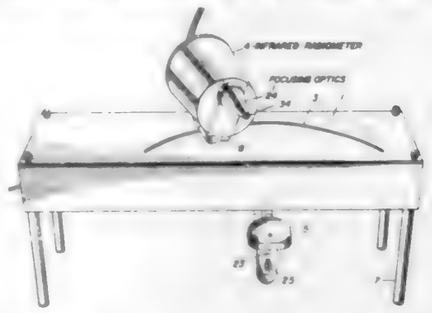
3,374,353
DENTAL X-RAY FILM PACKAGE WHEREIN A PROJECTION OF THE X-RAY FILM EXTENDS OUTSIDE THE WRAPPER
Jacob A. Saffir, Los Angeles, Calif., assignor to The Dentists' Supply Company of New York, York, Pa., a corporation of New York
Filed July 12, 1965, Ser. No. 471,267
9 Claims. (Cl. 250—69)



A dental X-ray film package comprising a sensitized X-ray film having a supporting member projecting from one edge thereof, a light-proof container enclosing said film in a manner to render said supporting member unobstructed for engagement by a clip of a film rack, and said container readily being separable from said film while said supporting member is clipped to said rack.

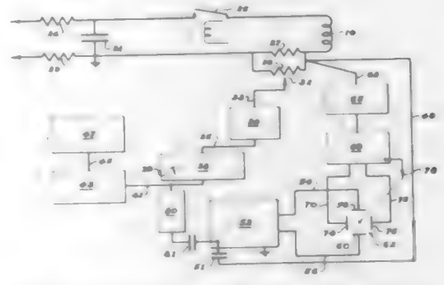
3,374,354
INFRARED RADIOMETER SCANNING DEVICE WITH PREDETERMINED SCAN PATH MEANS
Robert L. Hood, Byram, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,358
12 Claims. (Cl. 250—83.3)

An infrared radiometer is mounted on a carriage which can be moved back and forth along a guiding wire or slot which may be straight or curved. This permits scanning across a portion of a patient's body, for example the forehead, while maintaining constant the distance to the patient. In some cases, where the surface is sharply curved, as where a scan across a woman's breasts is needed, a curved track also permits the radiometer to be aimed so that it is always at right angles to the surface of the skin. The radiometer is provided with focusing



means having a small field of view so that the scan will have the desired resolution.

3,374,355
MAGNETIC FOCUSING OF X-RAY TUBES AND SYSTEM FOR OPERATING
Lyman G. Parratt, Trevor R. Cuykendall, Kenneth I. Greisen, L. Taylor Finlayson and Frederick Reines, Santa Fe, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 21, 1946, Ser. No. 649,413
1 Claim. (Cl. 250—9.9)

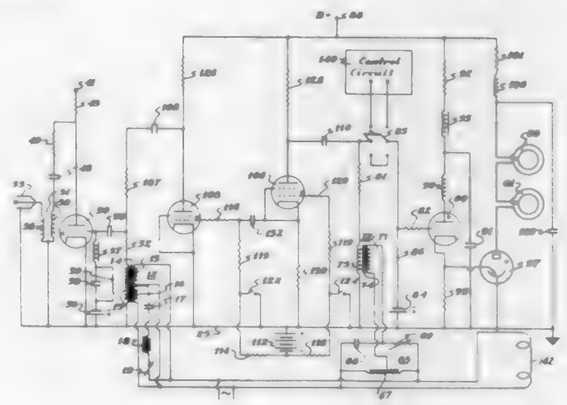


1. A system for operating an X-ray generator comprising in combination an X-ray tube having an axially spaced anode and electron emissive cathode, a coil surrounding said tube for producing a magnetic field in the direction of said axis; means for rapidly producing a pulsed intense magnetic flux comprising a source of surge current, and means for connecting said surge current to said coil, means responsive to a selected predetermined magnitude of said surge current for applying a source of surge voltage to said anode and said cathode, means for developing a potential having an amplitude variable in time in accordance with said flux, a cathode ray oscilloscope, means for applying said potential to one pair of deflecting plates of said oscillator, means for applying a sweep voltage to the other of said deflecting plates simultaneously with the application of said surge current to said coil, and means for applying the surge voltage discharge also to said first named deflection plates, whereby said predetermined magnitude may be selected so that said surge voltage is applied when the magnetic flux produced by said coil is maximum.

3,374,356
MAGNETIC INDUCTION ACCELERATOR WITH MEANS TO DEFLECT ACCELERATED ELECTRONS TO AN X-RAY TARGET
Donald W. Kerst, Urbana, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 1, 1946, Ser. No. 651,280
8 Claims. (Cl. 250—99)

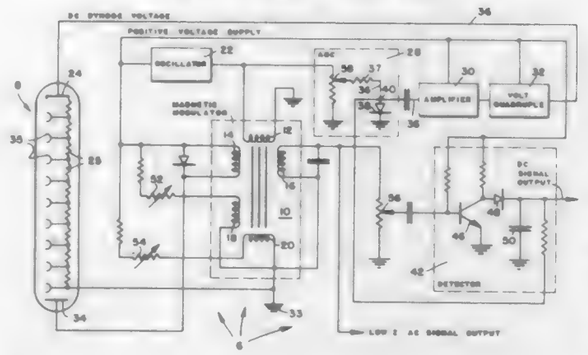
1. The combination with a magnetic induction accelerator having an alternating current source providing cyclic accelerating magnetic field energy and means

for periodically injecting electrons at a time appropriate for acceleration through an orbit defined by said accelerating field energy, means coupled to said current source for controlling the timing of one of said injections to permit electron capture and acceleration through said orbit by said accelerating energy, and means for introducing phase shift to effect all subsequent injections at times inappropriate for electron capture and orbit acceleration thereof, whereby to produce a single effective injection.



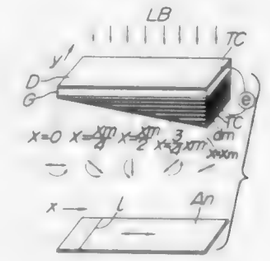
2. The combination with a magnetic induction accelerator of the type including cyclic energizing field for the establishment of a charged particle orbit, means associated with said field for the injection of electrons within said orbit and operative in response to an introduced pulse, and means for deflecting the injected electrons from said orbit after acceleration therein for the bombardment of a target and the production of an X-ray burst; of an electronic circuit associated therewith including electron discharge means responsive to one of a sequence of pulse signals introduced to said electron injection means for the initiation of said injection in proper phase with the cyclic energizing field to effect capture and acceleration within said orbit, said circuit being responsive to all other pulses of said sequence to effect phase shift between the resulting injections, energizing field, and the orbit expanding means, whereby one pulse of said sequence results in an X-ray burst and all other pulses of said sequence are ineffective to cause X-ray bursts.

3,374,357
SENSITIVITY REGULATOR FOR A PHOTOMULTIPLIER TUBE USING MAGNETIC MODULATOR MEANS
George T. Barlow, San Diego, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Aug. 26, 1965, Ser. No. 482,951
6 Claims. (Cl. 250—207)



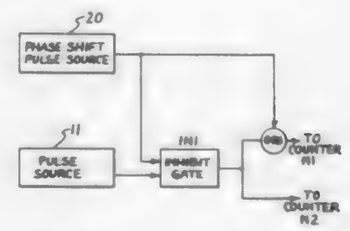
The description discloses a regulator for regulating the sensitivity of a photomultiplier tube so that the tube will be sensitive to light over a large range of intensity without damage to the tube. This may be accomplished by employing a magnetic modulator circuit which cooperates with a detector means and automatic gain control circuit to control an oscillator which drives the cathode and dynode string of the photomultiplier tube. The oscillator may have a constant frequency with a fixed output amplitude.

3,374,358
LIGHT DISPLAY DEVICE EMPLOYING ANGULARLY SELECTIVE POLARIZER
Hideyasu Majima, Hachioji-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Oct. 20, 1965, Ser. No. 498,217
Claims priority, application Japan, Oct. 30, 1964, 39/61,258
8 Claims. (Cl. 250—213)



1. A light selection device comprising an electro-optically active element including an optical gyrator having along the direction of light transmission a thickness varying in a direction different to the direction of light transmission and an electro-optically active gyrator having an angle of optical rotation controllable under a voltage applied thereto, said electro-optically active gyrator being arranged to act upon the light transmitted through said optical gyrator and a light-analyzing element for detection of light having a predetermined direction of vibration including an analyzer arranged to receive the rotated light emerging from said electro-optically active element.

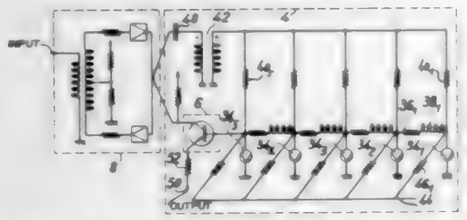
3,374,359
PHASE SHIFT DEVICE
Wilmer C. Anderson, Greenwich, Conn., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 25, 1963, Ser. No. 319,036
12 Claims. (Cl. 307—106)



7. In a phase shift device, the combination which comprises, first and second counters having the same capacity for independently counting the pulses applied thereto and for producing output signals when filled, a first pulse source, means operative to transmit pulses from the first source to both counters whereby the counters are filled at a desired rate, an auxiliary pulse source, means operative to transmit pulses from the auxiliary source to only one of the counters to the exclusion of pulses from said first source to either of the counters so that a desired differential count exists between the counters and output signals are produced thereby with a desired time interval therebetween, and a device independently associated with each

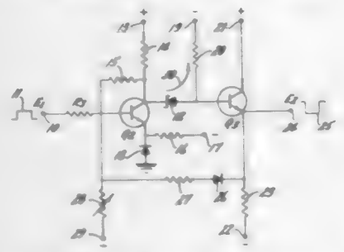
counter for producing an output pulse having a desired volt-second content in response to the production of an output signal by the associated counter.

3,374,360
PULSES TO PROVIDE CONTINUOUS SCALING NON-RESETTABLE COUNTER WITH MEANS FOR CYCLICALLY CHANGING POLARITY OF INPUT
Louis Ponthus, Lyon, and Jacques Lacour, Grenoble, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Mar. 4, 1965, Ser. No. 441,404
Claims priority, application France, Mar. 9, 1964, 966,687
8 Claims. (Cl. 307—225)



The present invention relates to a device for counting a repetitive series of pulses or a pulse train. Particularly the present invention concerns a counting device including a scaling unit comprised of a plurality of bistable elements arranged so that they may be sequentially switched by a positive pulse train and then by a negative pulse train without having to be reset.

3,374,361
ZENER COUPLED WIDE BAND LOGARITHMIC VIDEO AMPLIFIER
Carl R. Callis, Glen Burnie, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 4, 1964, Ser. No. 394,641
4 Claims. (Cl. 307—229)



A Zener coupled wide band logarithmic video amplifier having a transistor amplifier coupled to an emitter follower transistor amplifier by a Zener diode for direct current signal coupling with a first feedback through a resistor from the collector to the base of the first transistor and a second feedback from the emitter follower output to the base of the first transistor. Temperature compensating diodes are coupled to each transistor to produce good logarithmic characteristics over a wide band.

3,374,362
OPERATIONAL AMPLIFIER WITH MODE CONTROL SWITCHES
Monroe A. Miller, Coral Gables, Fla., assignor to Milgo Electronic Corporation, Miami, Fla., a corporation of Florida
Filed Dec. 10, 1965, Ser. No. 512,961
16 Claims. (Cl. 307—230)

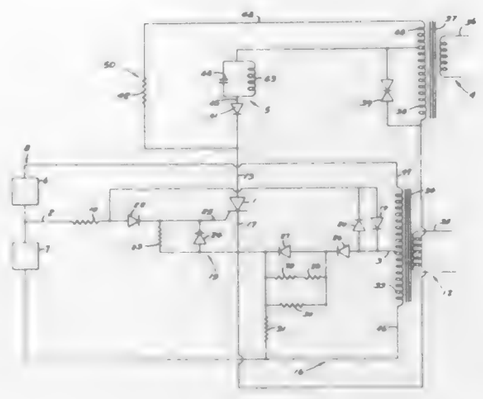
1. In an operational amplifier circuit the combination which comprises:
(a) an operational amplifier having an input circuit and an output circuit,
(b) first and second amplifier input terminals for receiving input signals to be selectively applied to the amplifier input circuit,
(c) a plurality of mode control switches
(d) each mode control switch having an input terminal, first and second output terminals and a control terminal and being arranged to selectively connect the input terminal thereof to the first and second output terminals in response to the application of first and second control signals, respectively, to the control terminal,
(e) the first output terminal of each switch being connected to the input circuit of the amplifier,
(f) the second output terminal of each switch being connected to ground potential,
(g) a separate feedback impedance connected between the amplifier output circuit and the input terminals of the first and second switches,

(h) an input impedance connected between the first amplifier input terminal and the input terminal of the first switch,
(i) an input impedance connected between the second amplifier input terminal and the input terminal of the second switch and
(j) means for applying the first control signal to the control terminal of a selected mode control switch and the second control signal to the control terminals of the other mode control switches and for simultaneously applying the first control signal to the control terminals of two of the switches during the transition time when the input terminals of said two switches are being disconnected from one of the output terminals and connected to the other output terminal so that the input circuit of the amplifier is always connected to at least one of the input terminals of the switches.

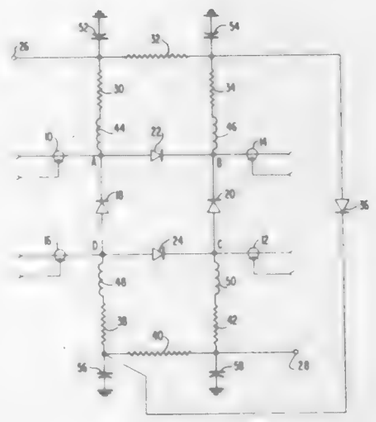
3,374,363
DETECTOR CONTROL CIRCUIT USING AN SCR IN A BALANCED BRIDGE
Gordon A. Roberts, Ann Arbor, Mich., assignor to Charles F. Warrick Company, Berkeley, Mich., a corporation of Michigan
Filed Aug. 30, 1963, Ser. No. 305,701
26 Claims. (Cl. 307—252)

1. A detector circuit responsive to a change in an input signal, comprising the combination:
a source of electrical energy of reversible polarity;
a trigger device having a first input electrode, a second input electrode, and at least a first output electrode;
a load and means connecting said load between said source of electrical energy and said first output electrode;
a pair of signal input terminals:
means for connecting said first input electrode of said trigger device to one of said signal terminals; and

diode means connected between said second input electrode of said trigger device and the other signal terminal for providing a potential on said second input electrode of said trigger device in excess of a predetermined potential with respect to the potential of said first input terminal of said trigger device when said source polarizes said first output electrode of said trigger device for nonconduction.



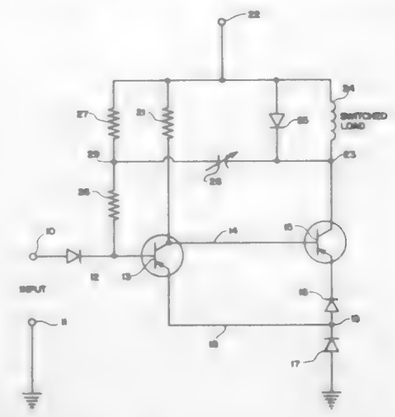
3,374,364
DIODE TRANSFER SWITCH
Carl W. Concelman, Danbury, Conn., assignor to Amphenol Corporation, Broadview, Ill., a corporation of Delaware
Filed Sept. 22, 1965, Ser. No. 489,345
8 Claims. (Cl. 307—257)



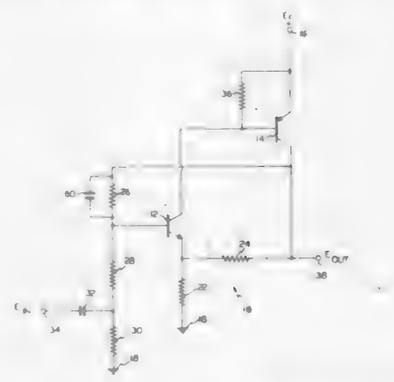
A high frequency, semi-conductor diode transfer switch utilizing a single voltage source for selectively switching two input radio frequency signal transmission lines between two output radio frequency signal transmission lines.

3,374,365
TRANSISTORIZED MONOSTABLE MULTIVIBRATOR WITH IMPROVED TIMING AND NOISE REJECTION
Marvin E. Lyles, Garden Grove, and Warren L. Childs, Ontario, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Apr. 20, 1965, Ser. No. 449,441
7 Claims. (Cl. 307—273)

A monostable multivibrator employing a voltage dividing network in conjunction with a capacitor for stabilizing the RC circuit timing and a pair of series connected diodes, one common to both transistors, for establishing the switching threshold of the circuit.

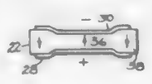


3,374,366
COMPLEMENTARY REGENERATIVE SWITCH
Leonard L. Kleinberg, Greenbelt, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 28, 1965, Ser. No. 491,059
6 Claims. (Cl. 307—288)



A fast acting transistorized switch circuit incorporating a novel complementary PNP-NPN configuration employing both positive and negative feedback. Upon the application of a positive input pulse to the input terminal, the positive feedback overrides and regeneratively drives a transistor into saturation. Upon the removal of the positive input pulse, the negative feedback overrides and drives both transistors into the off condition in which state the circuit draws no power.

3,374,367
ELECTROACOUSTIC TRANSDUCERS
John V. Cowan, 210 S. King St., Danbury, Conn. 06810
Filed Jan. 21, 1966, Ser. No. 522,065
7 Claims. (Cl. 310—8.5)



1. An electroacoustic transducer comprising:
(A) a piezoelectric body having a first and a second major surface;

(B) A first and a second electrode adjacent to each major surface, and,

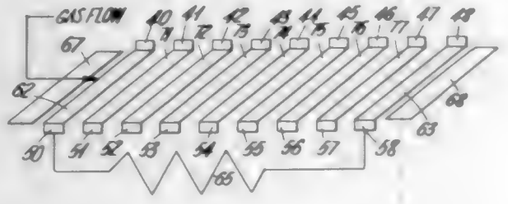
(C) at least two volumetric portions of said body between said electrodes being polarized such that upon the application of an electric field thereto, a first and a second potential energy quantity is stored in said portions of opposite kind and upon termination of said electric field the potential energy is changed to a first and a second kind of kinetic energy that is substantially mutually cancellable, thus creating a self-damping transducer.

3,374,368

MAGNETOHYDRODYNAMIC APPARATUS

Donald Thomas Swift-Hook, Dibden Purlieu, John Keith Wright, Ashtead, and John Maycock, Guildford, England, assignors to Central Electricity Generating Board, London, England, a British body corporate

Filed Mar. 18, 1965, Ser. No. 440,821
Claims priority, application Great Britain, Mar. 19, 1964, 11,629/64, 11,741/64; Mar. 20, 1964, 11,958/64
25 Claims. (Cl. 310—11)



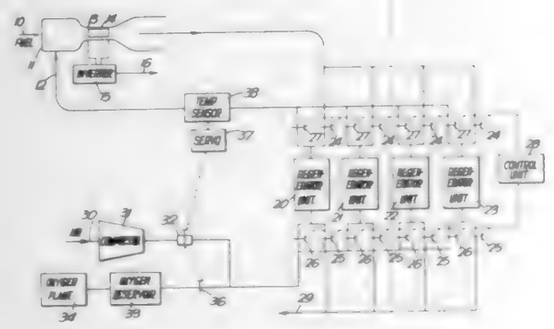
1. A duct for magnetohydrodynamic apparatus constructed of a number of metal tubes, each shaped to form a loop extending completely around the duct, the various loops being stacked together with electrical insulation between them to form a duct with each loop lying in a plane or other surface such that the planes or surfaces correspond with the desired equipotential surfaces and whereby the portions of the tube in contact with fluid passing through the duct may be utilised as electrodes.

3,374,369

MAGNETOHYDRODYNAMIC ELECTRICAL GENERATORS

Trevor Broom, Stoke D'Abernon, England, assignor to Central Electricity Generating Board, London, England, a British body corporate

Filed Mar. 22, 1965, Ser. No. 441,509
Claims priority, application Great Britain, Mar. 24, 1964, 12,458/64
12 Claims. (Cl. 310—11)



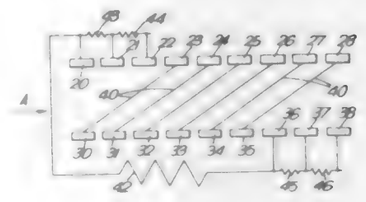
1. In an open cycle magnetohydrodynamic electrical power generator in which fuel is burnt with air the combination of cyclically switched regenerative pre-heaters for pre-heating the combustion air and means for periodic injection of oxygen into the air feed at the pre-heater switching frequency to increase or maintain the flame temperature as the temperature of the pre-heated air decreases.

3,374,370

MAGNETOHYDRODYNAMIC ELECTRICAL GENERATORS

Donald Thomas Swift-Hook, Dibden Purlieu, England, assignor to Central Electricity Generating Board, London, England, a British body corporate

Filed Mar. 22, 1965, Ser. No. 441,510
Claims priority, application Great Britain, Mar. 20, 1964, 11,873/64
7 Claims. (Cl. 310—11)



1. In a magnetohydrodynamic electrical generator, a duct through which conductive gas flows, two similar series of axially spaced electrodes on opposite surfaces of the duct, electrical connections between those electrodes of the two series which lie in the desired equipotential planes at an angle to the axis of the duct whereby there are some unconnected electrodes at one end of one series and at the other end of the other series a main load, first and second networks of subsidiary loads, means connecting one end of said main load through said first network of subsidiary loads to the unconnected electrodes at one end of one series, and means connecting the other end of said main load through said second network of subsidiary loads to the unconnected electrodes at the other end of the other series, the subsidiary loads in each network being proportioned in accordance with current flows to the various electrodes to which the network is connected to allow current to be drawn from or fed into these electrodes at the potentials appropriate to the required potential disribution along the duct.

3,374,371

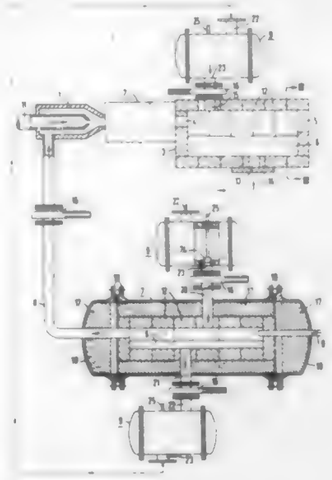
METHOD AND HEAT EXCHANGER FOR PREHEATING THE COMBUSTION AIR OF MAGNETOHYDRODYNAMIC GENERATORS

Walter Hanlein, Wilhelm Rieger and Max Maier, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed May 3, 1965, Ser. No. 452,471
Claims priority, application Germany, May 2, 1964, S 90,903
8 Claims. (Cl. 310—11)

The combination in an MHD generator, having combustion-air supply means and a waste-gas outlet, of a heat exchanger plant including a first container and a second container, both containing molten liquid heat transfer material when in operation, the first container being connected to the waste gas outlet and forming a path for gas in heat-exchanging contact with the surface level of the molten material in the first container, the second container being connected in the combustion-air supply means and forming a supply path for air above and in heat-exchanging contact with the surface level of the molten material in the second container, the second container having a pressure-resistant jacket and, in operation,

having a higher internal pressure than the first container, both containers having material charging and discharging means for transferring material from the second container



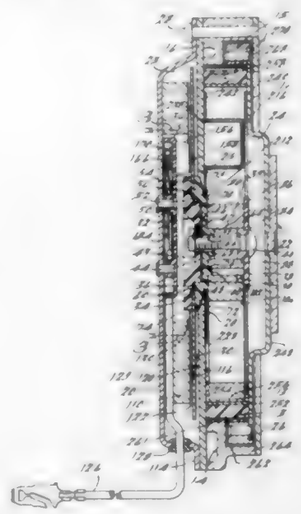
to the first container, the material charging and discharging means including in each of the two containers an outlet below the level and an inlet above the level.

3,374,372

ACTUATOR

David V. Tinder, Detroit, and Theodore F. Knapp and Donald R. Gaines, Farmington, Mich., assignors to Dura Corporation, a wholly owned subsidiary of Walter Kidde & Company, Inc., Oak Park, Mich., a corporation of New York

Filed Sept. 16, 1964, Ser. No. 396,978
51 Claims. (Cl. 310—80)



There is herein disclosed a power actuator for a vehicle window or the like comprising a disc motor and a harmonic transmission cooperably mounted in a pancake type housing.

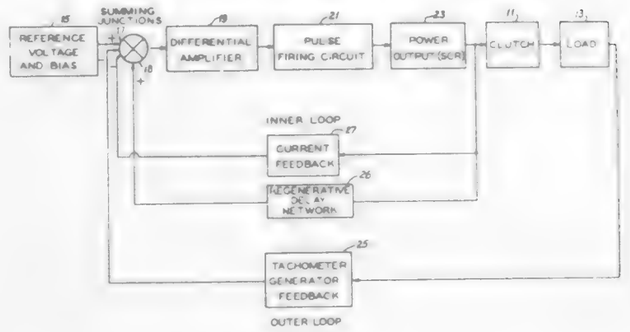
3,374,373

CONTROLLED-VELOCITY DRIVE

Frederick Hart Calvert, Kenosha, Wis., assignor to Eaton Yale & Towne, Inc., Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 361,851, Apr. 22, 1964. This application Apr. 22, 1967, Ser. No. 642,619
11 Claims. (Cl. 310—94)

A solid-state speed control is disclosed in which the energization of the field winding of an eddy-current coupling is controlled in response to a tachometer feedback signal, which represents the coupling output speed, and a pair of signals which vary as functions of the field winding current. One of the pair of current responsive signals



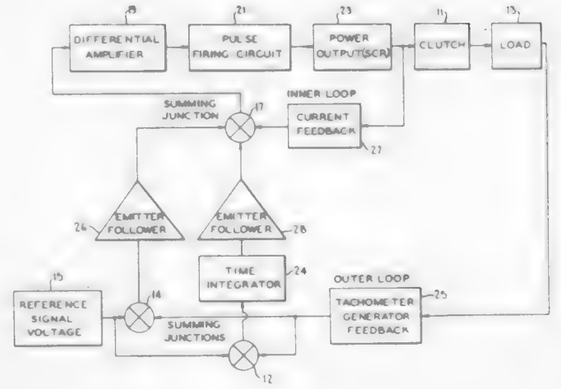
is applied substantially directly to effect degenerative feedback and the other is delayed and applied to effect regenerative feedback.

3,374,374

CONTROLLED-VELOCITY DRIVE

Aubrey H. Smith, Kenosha, Wis., assignor to Eaton Yale & Towne, Inc., Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 365,413, May 6, 1964. This application Apr. 26, 1967, Ser. No. 642,622
13 Claims. (Cl. 310—94)



A solid-state speed control is disclosed in which the energization of the field winding of an eddy current coupling is varied in response to both a first error signal which is a function of the difference between the desired and actual speeds and a second error signal which is a function of the time integrated difference between the desired and actual speeds.

3,374,375

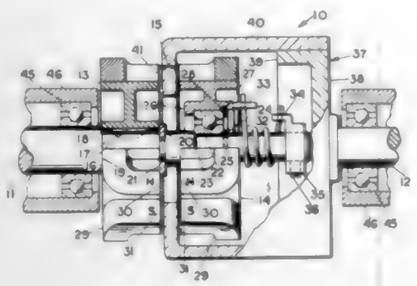
ACCELERATION SENSITIVE COUPLING

Jerome M. Cook, Plainview, N.Y., assignor to Grumman Aircraft Engineering Corporation, Bethpage, N.Y., a corporation of New York

Filed Aug. 3, 1964, Ser. No. 387,096
12 Claims. (Cl. 310—95)

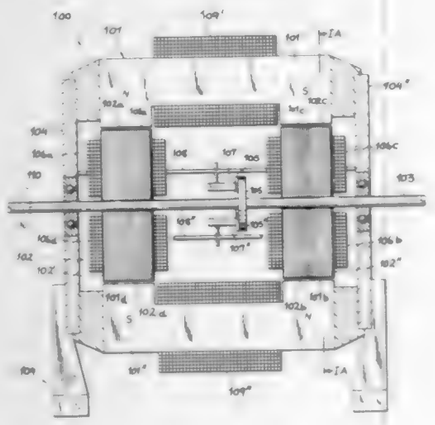
This invention is a magnetic eddy-current coupling in which the torque coupling between the drive and driven members is a function primarily of drive member acceleration. Maximum coupling effect is obtained in conditions of maximum drive member acceleration and the effect drops to zero when the drive member ceases to accelerate as, for instance, when it stabilizes at its rated

speed. Variations in the magnetic field to vary the coupling effect are obtained by a displacement in the relative positions of the field producing elements of the drive.



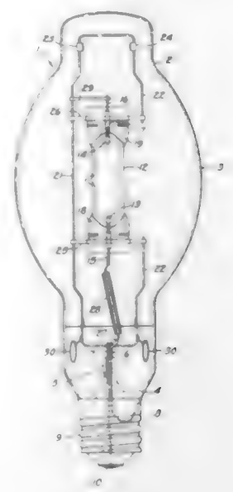
This displacement is produced by the inertia induced by acceleration. The operating principle is applicable in linear as well as rotary couplings.

3,374,376
ELECTRIC GENERATOR
Raymond Kromrey, 15 Rue du Mt. Blanc, Geneva, Switzerland
Filed Jan. 9, 1964, Ser. No. 336,769
1 Claim. (Cl. 310—112)



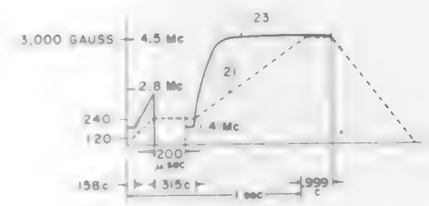
1. An electric generator comprising a fixed stator and a rotor coaxial with said stator; drive means for rotating said rotor about its axis, said stator being provided with a pair of elongated bar magnets extending parallel to said axis on opposite sides thereof and terminating in transverse extremities, oppositely poled extremities of said magnets confronting each other and defining magnet means having two axially spaced pole pairs disposed in a common axial plane and forming a pair of diametrically extending air gaps for establishing a magnetic-flux path including two axially spaced parallel magnetic fields across said air gaps traversing said axis substantially at right angles, said rotor being provided with two axially spaced parallel elongated ferromagnetic elements slightly shorter than the spacing of said confronting extremities and extending perpendicularly to said axis at locations coplanar with said pole pairs for concurrent periodic alignment of said elements with said fields in said air gaps upon rotation of said rotor; and an output circuit on said rotor including winding means on each of said elements and collector means in series with said winding means, each of said pole pairs and the corresponding elements having confronting arcuate faces centered on said axis, the sum of the arcs spanned by said faces being substantially equal to 90° in the plane of rotation.

3,374,377
METAL VAPOR LAMP COATING
Clarence G. Cook, Mayfield Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed Apr. 21, 1965, Ser. No. 449,745
4 Claims. (Cl. 313—17)



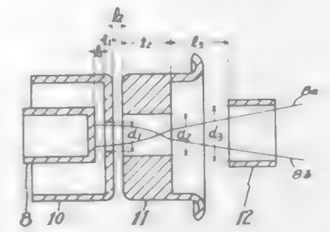
In a high pressure mercury metal halide (sodium iodide) lamp of the jacketed type, it is necessary to maintain the ends of the arc tube above 500° C. in order to prevent condensation of the metal halide. This is achieved by a heat and light-reflective coating on the ends of the quartz arc tube within the evacuated outer jacket. A material found suitable for this purpose is zirconium oxide ZrO_2; it does not react with the quartz at the operating temperature, nor vaporize, nor darken, nor release gases into the interenvelope space.

3,374,378
ACCELERATION OF HEAVY PARTICLES
Ernest D. Courant, Bayport, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Continuation of application Ser. No. 324,593, Nov. 18, 1963. This application July 14, 1967, Ser. No. 654,039
6 Claims. (Cl. 313—63)



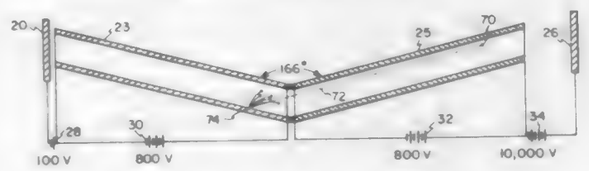
A method of increasing the revolution frequency and energy of heavy electrically charged particles that are magnetically held on a revolution orbit in a strong focusing synchrotron, wherein the particles are injected at a pre-selected low velocity from a linear accelerator and exposed to a high frequency electric field the frequency of which is successively made equal to different harmonics of the revolution frequency in the synchrotron with decreasing ordinal numbers of the harmonics whereby the revolution frequency and energy of the particles can be increased in the multiple bev. range in the synchrotron with a narrow band of electric field frequencies.

3,374,379
LOW SECOND GRID VOLTAGE ELECTRON GUN
Takaharu Maruyama, Hirofumi Suzuki, and Masaaki Yamauchi, Kawasaki-shi, Japan, assignors to Nippon Columbia Kabushikikaisha (Nippon Columbia Co., Ltd.), Kawasaki-shi, Japan, a corporation of Japan
Filed May 27, 1964, Ser. No. 370,516
Claims priority, application Japan, Mar. 2, 1964, 39/11,473
8 Claims. (Cl. 313—85)



A high transconductance electron gun type cathode ray tube with a low second grid voltage electron gun having multigrid electrodes successively in the advance direction of electron beams from the cathode of the electron gun. Each of the grid electrodes has a central aperture therein with the diameter of the central aperture of the second grid electrode being larger than the diameter of the central aperture of the first grid electrode and the axial length of the central aperture of the second grid electrode being greater than the diameter of the central aperture of the second grid electrode.

3,374,380
APPARATUS FOR SUPPRESSION OF ION FEEDBACK IN ELECTRON MULTIPLIERS
George W. Goodrich, Oak Park, Mich., assignor to The Bendix Corporation, Ann Arbor, Mich., a corporation of Delaware
Filed Nov. 10, 1965, Ser. No. 507,198
10 Claims. (Cl. 313—104)

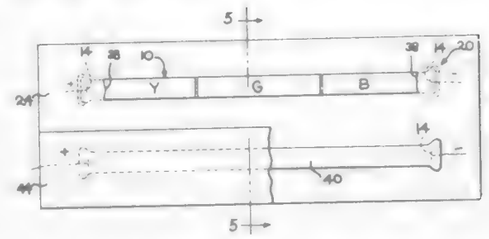


A pair of channel electron multipliers operating in series and disposed at an angle to minimize ion feedback.

3,374,381
MULTI-COLOR PHOTOLUMINESCENT GLASS SYSTEMS
Marvin J. Albinak and Warren H. Turner, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed May 3, 1965, Ser. No. 452,761
4 Claims. (Cl. 313—108)

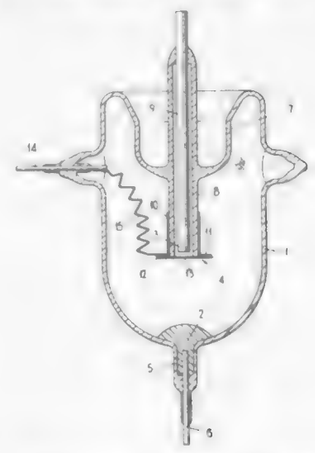
A multi-color photoluminescent glass system wherein separate segments of a common base glass, either rod or tube, and each segment having a different photoluminescent dopant, are joined together into a continuous length element. In the case of a tube, mercury vapor may be placed inside, with electrodes, and activated so that each of the segments will produce a different color, based upon its respective photoluminescent dopant. Within the broad scope of the invention, separate items can be so made and held on a support and activated to produce photoluminescent light output by a separate mercury vapor tube.

A substantial advancement to the art is provided in that multiple colors are produced in a novel and inexpensive manner, using a single excitation source to activate all of the different colored parts.



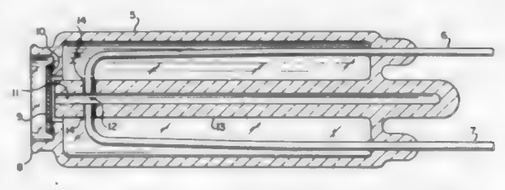
Since the doped segments are transparent, neon or similar gas can be enclosed in the tube for one color of light, and separately or simultaneously an external excitation source can be played upon the unit for a different set of colors.

3,374,382
CATHODE FOR USE IN GAS-FILLED ELECTRIC DISCHARGE DEVICES COMPRISING CADMIUM, ZINC, TIN AND ALLOYS THEREOF
Rodney William Young, Harrow, Middlesex, England, assignor to The M-O Valve Company Limited, London, England, a British company
Filed Nov. 18, 1965, Ser. No. 508,463
Claims priority, application Great Britain, Nov. 19, 1964, 47,157/64; June 29, 1965, 27,507/65
12 Claims. (Cl. 313—173)



1. A cold cathode, for use in a gas-filled electric discharge device, at least the emissive part of which consists of a solid material at least 30 atomic percent of which consists of metal having a latent heat of vapourization not greater than 50 kilocalories per mole and a vapour pressure at 1000° C. of not less than 0.1 torr.

3,374,383
ACCUMULATION MEANS FOR REDUCTION OF SPUTTER IN GAS-FILLED, LYMAN-ALPHA SOURCE TUBE
George J. Bergen, Oxon Hill, Md., and Arnold H. Singer, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 28, 1966, Ser. No. 546,491
5 Claims. (Cl. 313—207)



A miniature gas filled cold cathode Lyman-Alpha source tube including means to prevent deleterious effects due

to sputtering while providing a tube having stable operating characteristics throughout a long life span.

3,374,384
PROCESS FOR PRODUCING NEGATIVE HELIUM IONS

Bailey L. Donnally, Lake Forest, Ill., assignor to Lake Forest College, Lake Forest, Ill., a not for profit corporation of Illinois

No Drawing. Filed May 5, 1966, Ser. No. 547,800
10 Claims. (Cl. 313—230)

1. A process for producing negatively charged helium ions comprising the steps of:

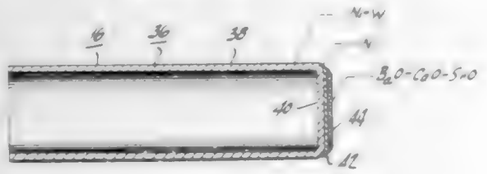
passing a beam of relatively low energy positively charged helium ions through the vapor of an alkali atom in order to produce metastable helium atoms; and

passing said metastable helium atoms through the vapor of an alkali atom in order to convert said metastable helium atoms into negatively charged helium ions.

3,374,385
ELECTRON TUBE CATHODE WITH NICKEL-TUNGSTEN ALLOY BASE AND THIN NICKEL COATING

Charles T. Lattimer, Marion, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed July 10, 1963, Ser. No. 294,108
11 Claims. (Cl. 313—337)



1. An indirectly heated cathode for an electron tube comprising:

(a) a base element which exhibits desirable electron emissive properties superior to those of a nickel base element and to which electron emissive materials do not satisfactorily adhere, consisting of nickel-tungsten alloy,

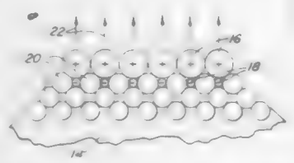
(b) a coating of nickel having a thickness not greater than 0.0006 inch on a portion of the surface of said base element, and

(c) a layer of electron emissive material on said nickel coating.

3,374,386
FIELD EMISSION CATHODE HAVING TUNGSTEN MILLER INDICES 100 PLANE COATED WITH ZIRCONIUM, HAFNIUM OR MAGNESIUM ON OXYGEN BINDER

Francis M. Charbonnier, Eugene E. Martin, and Lynwood W. Swanson, McMinnville, Oreg., assignors to Field Emission Corporation, McMinnville, Oreg., a corporation of Oregon

Filed Nov. 2, 1964, Ser. No. 408,035
9 Claims. (Cl. 313—34.6)



1. A field emission cathode comprising:

a substrate body of material taken from the group consisting of molybdenum and crystal lattice plane of Miller indices 100 oriented at the surface of a sharpened portion of said body having a small radius of curvature;

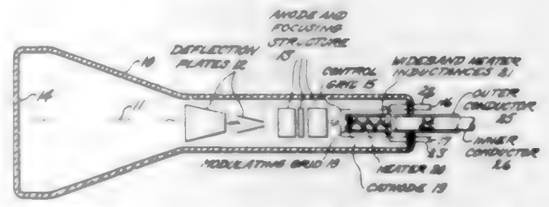
a layer containing electron emissive material taken from the group consisting of zirconium, hafnium and magnesium, coated only on said sharpened portion of said body and confined substantially entirely to said lattice plane to reduce the work function of said sharpened portion; and

said layer also containing bonding material, such as oxygen, to cause said emissive material to adhere only to said surface of said sharpened portion so that the field emission of electrons from said cathode forms an electron beam of high current density originating at a small source confined primarily to said coated 100 plane on said sharpened portion of said body.

3,374,387
COAXIAL LINE TERMINATING IN CATHODE AND CONTROL GRID OF CATHODE RAY TUBE

Hermann F. Schmid, San Francisco, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Nov. 18, 1966, Ser. No. 595,537
2 Claims. (Cl. 315—3)

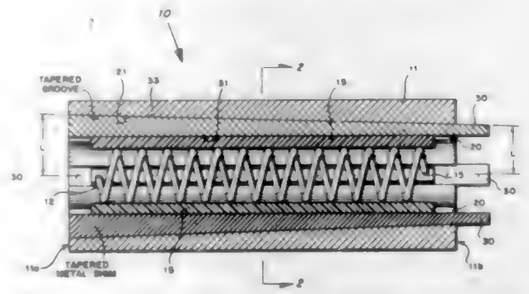


An electron gun structure for use in a cathode-ray tube having a cathode, control grid, an additional modulating grid, and anode. The modulating grid and cathode form part of the outer and center conductor of a coaxial line. The coaxial line is brought out through the base of the cathode ray tube. The modulating signal is applied between the cathode and modulating grid.

3,374,388
TRAVELING WAVE TUBE HAVING TAPERED GROOVES AND SHIMS FOR IMPROVED THERMAL CONTACT BETWEEN METAL ENVELOPE, SUPPORT RODS AND SLOW WAVE HELIX

Raymond E. Huber, Woodbine, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Nov. 13, 1964, Ser. No. 411,169
10 Claims. (Cl. 315—3.5)

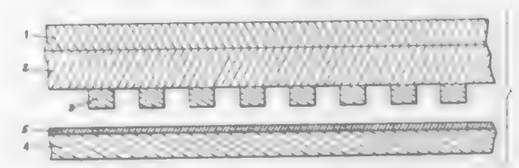


A traveling wave tube having a tubular envelope with longitudinally extending grooves of uniformly increasing depth between their ends spaced about the inner periphery, elongated tapered shims each contiguous with the radially outermost surface of a respective groove and forming an inner surface parallel to the longitudinal axis of the envelope, elongated dielectric support rods contiguous with a respective shim inner surface and forming an inner surface parallel to the longitudinal axis of the envelope, and a helical delay winding coaxially supported in the envelope by the rod inner surfaces whereby positioning of the shims along the length of the envelope obtains positive contact between interfaces of the winding, rods, shims and envelope and thereby affords high thermal conductivity therebetween.

3,374,389
SOLE ELECTRODE OF THE CROSSED-FIELD TYPE OF ELECTRON DISCHARGE DEVICE HAVING A COATING OF REFRACTORY MATERIAL THEREON

Pierre Cahour and Walter Sobotka, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France

Filed July 20, 1964, Ser. No. 383,634
Claims priority, application France, Aug. 6, 1963, 943,878
12 Claims. (Cl. 315—3.5)

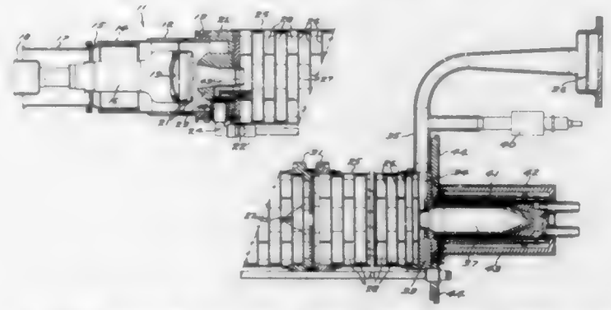


A crossed-field electron discharge device having a wave delay structure secured to an insulating base and a metallic sole electrode facing the delay structure, the surface of the sole electrode being coated with a refractory layer having a low electrical conductivity at least on the surface thereof.

3,374,390
TRAVELING-WAVE TUBE HAVING A SLOW-WAVE STRUCTURE OF THE CLOVERLEAF TYPE WHEREIN THE HEIGHT OF THE CLOVERLEAF SECTIONS ARE TAPERED

John A. Ruetz, Los Altos, Willis H. Yocom, Chatham, and René M. Rogers, Sunnyvale, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Continuation-in-part of application Ser. No. 56,415, Sept. 16, 1960. This application Mar. 29, 1965, Ser. No. 443,612
18 Claims. (Cl. 315—3.6)

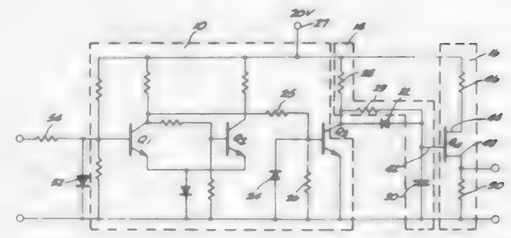


1. An electron discharge device comprising: a cathode for producing a beam of electrons, a collector for collecting said beam of electrons, a slow-wave structure positioned between the cathode and collector for supporting a traveling wave, input means coupled to the cathode end of said slow-wave structure for introducing the traveling wave onto the slow-wave structure, the traveling wave being amplified by interaction with the electron beam traveling through the slow-wave structure, said slow-wave structure comprising a plurality of inductively coupled cloverleaf sections aligned along the beam path, the heights of the last several cloverleaf sections in the slow-wave structure decreasing in value progressively, the last cloverleaf section being substantially shorter in height then the full height of the normal cloverleaf sections, said input means including a coaxial line extending into and across the first cloverleaf section in a direction parallel to the beam path, said first cloverleaf section having an annular tuning stub coaxially aligned with the beam path and extending into said first cloverleaf section for capacitive tuning of the input, and output means coupled to said last cloverleaf section for removing the wave energy from said slow-wave structure.

3,374,391
SWEEP PROTECTION CIRCUIT

Richard G. Friess, San Marcos, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Mar. 3, 1966, Ser. No. 531,432
4 Claims. (Cl. 315—20)



1. In combination with an electron beam tube including a writing beam circuit and a sweep voltage generating circuit means having an output voltage of a preselected waveform, a protection circuit comprising:

a sensing circuit means connected to said sweep voltage generating circuit means for developing one output signal when the output voltage of said sweep voltage generating circuit means is of said preselected waveform and a second output signal when said output voltage is of a waveform other than said preselected waveform;

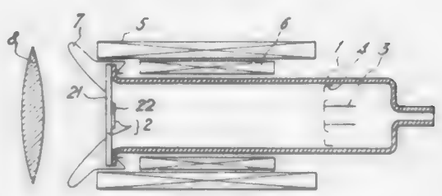
a pulse generating circuit means coupled to said writing beam circuit for disabling said writing beam circuit when said pulse generating circuit means develops an output pulse; and

a control circuit means coupled between said sensing circuit and said pulse generating means for causing said pulse generating means to develop an output pulse when said sensing circuit develops said second output signal.

3,374,392
CAMERA TUBE FOR INFRARED TELEVISION HAVING FERROELECTRIC STRIP FOR RECEIVING RADIATION

Armand Hadni, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France

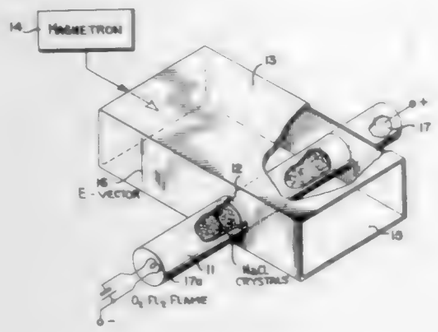
Filed Aug. 24, 1964, Ser. No. 391,631
Claims priority, application France, Aug. 27, 1963, 945,749, Patent 1,374,487
3 Claims. (Cl. 315—21)



The invention has for object a camera tube for infrared television of the charge storage type, including a ferro-

electric strip, having a dielectric constant particularly sensitive to the local temperature variations.

3,374,393
INTENSE INCOHERENT LIGHT SOURCE OBTAINED BY QUENCHING THE HIGHER EXCITED STATES AND CONCENTRATING THE ENERGY ON THE LOWER STATES
Jenny Bramley, Falls Church, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,149
14 Claims. (Cl. 315—39)

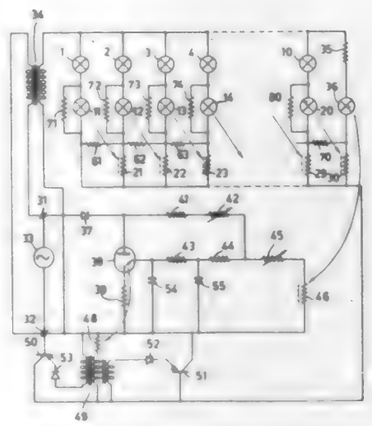


Emission of intense light in an appropriate region of the electromagnetic spectrum from a plasma containing a metal or compound thereof having first and further excited states is achieved by exciting the plasma using microwave energy, while quenching the higher excited states to concentrate energy in the lower excited state or states.

3,374,394
TIME DELAY CONTROL FOR LIGHTING CIRCUIT
Charles W. Miller, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 20, 1965, Ser. No. 481,344
5 Claims. (Cl. 315—82)

A lighting circuit incorporating a relay, a transistor switch, and an RC timing network that together become operative when the light switch is moved to its "Off" position to provide a shunt connection between the headlamps and the power source. The RC network biases the transistor switch on and causes the relay to be energized to complete the shunt connection for a certain time interval determined by the time constant of the RC network.

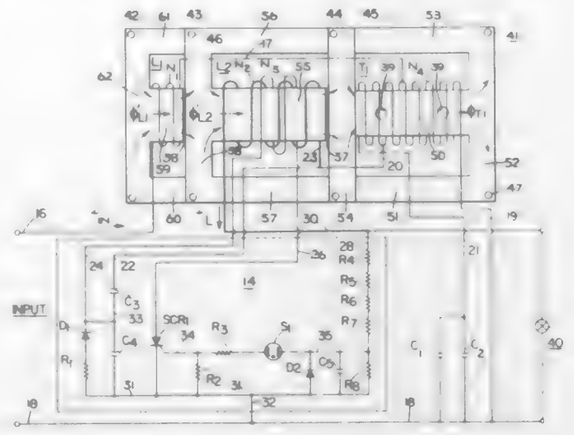
3,374,395
CIRCUIT ARRANGEMENT FOR LUMINOUS ADVERTISING IN WHICH THE LIGHT SOURCES FLASH UP CONSECUTIVELY AND ARE SIMULTANEOUSLY EXTINGUISHED
Mathias Donkers and Engbert Bernard Gerard Nijhof, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 4, 1965, Ser. No. 437,180
Claims priority, application Netherlands, Mar. 7, 1964, 64—2,377
14 Claims. (Cl. 315—151)



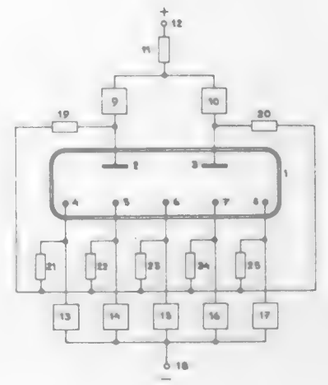
1. A circuit for sequentially energizing a plurality of electric light sources arranged in a given pattern comprising, a source of energizing voltage, electronic gate means, a plurality of light-sensitive elements, means connecting a first one, a second one, a third one, and so on, of said light sources in series with a first one, a second one, a third one, and so on of said light-sensitive elements, respectively, said light sources and said light-sensitive elements being arranged so that said light sources are individually optically coupled in sequence to adjacent light-sensitive elements, means connecting said electronic gate means in series between said voltage source and said plurality of series connected light sources and light-sensitive elements to control the energization thereof, means for exciting the first light-sensitive element in the sequence thereby to initiate a cycle wherein said light sources are sequentially energized as the respective series connected light-sensitive elements are sequentially illuminated by the respective light sources optically coupled therewith, a light-sensitive control element optically coupled to the last one of said light sources in the sequence and arranged to control the state of said electronic gate means so as to simultaneously de-energize said light sources at the end of a cycle, and a delay network coupled between said light-sensitive control element and said electronic gate means for providing a time delay between the activation of said control element and said control of said electronic gate means.

3,374,396
STARTING, CURRENT LIMITING AND VOLTAGE STABILIZING CIRCUIT FOR HIGH INTENSITY ARC DISCHARGE LAMPS
Gordon M. Bell and Alexander R. Hallay, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York
Filed Jan. 9, 1967, Ser. No. 608,030
11 Claims. (Cl. 315—277)

Starting and operating control apparatus including a current limiting reactor, a magnetic voltage stabilizer for supplying a constant voltage to the current limiting reactor and arc discharge lamp, and a starting circuit coupled on the current limiting reactor. The current limiting reactor and magnetic voltage stabilizer share a common section of the laminated core structure of the control apparatus. The magnetic flux produced by the current limiting reactor and magnetic voltage stabilizer are vectorially substractive with respect to each other in the common section of the laminated core and the common section does not become saturated with flux. A voltage divider is connected across the output of the control apparatus and responds to an open circuit voltage condition across the output to cause the starting circuit to supply a starting pulse in every other half cycle of the supply voltage. The starting circuit is essentially inoperative during normal operation of the lamp.

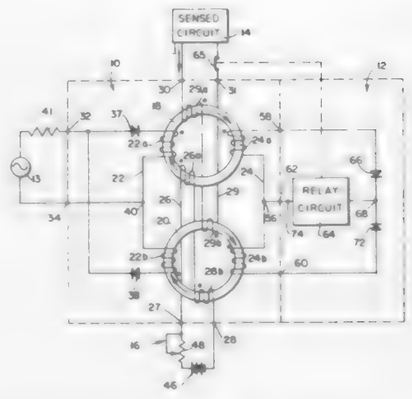


3,374,397
INDICATOR CIRCUIT WITH ALL ELECTRODES CONNECTED TO A COMMON POINT THROUGH INDIVIDUAL RESISTORS
Cornelis J. Krayenbrink, Zoetermeer, Netherlands, assignor to Indoheem N.V., The Hague, Netherlands, a Dutch limited-liability company
Filed Apr. 25, 1966, Ser. No. 544,757
Claims priority, application Netherlands, Sept. 8, 1965, 65—11,739
1 Claim. (Cl. 315—334)



1. An indicator circuit comprising a glow discharge tube having at least one anode and at least two cathodes, means for selectively connecting one anode and one cathode to a source of supply voltage thereby to establish a glow discharge between the anode and cathode concerned, a plurality of separate resistors, and means connecting all anodes and cathodes through separate ones of said resistors to a common star point which is not connected to anything else.

3,374,398
MAGNETIC CIRCUIT PROTECTIVE DEVICE
Richard A. Horn, Hudson, and Howard I. Cole, New Ipswich, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Jan. 7, 1966, Ser. No. 519,281
20 Claims. (Cl. 317—9)



Apparatus is herein provided for sensing within a time limit measured in microseconds, both D.C. and A.C. currents and voltages which exceed predetermined limits. The protective circuit uses a magnetic amplifier for its high gain capabilities and low power consumption. The magnetic amplifier operates at a point in the saturation region on the flux vs. magnetomotive curve, the operating point being determined by the current in the primary or gate winding, and a bias winding. The current of the monitored circuit passes through a sense winding and generates a flux opposite in polarity to the flux produced by the gate winding and bias winding. When the current in the sense winding exceeds a predetermined limit the resulting flux will shift the operating point onto the linear portion of the flux vs. magnetomotive curve and, through transformer action, the varying primary flux will produce a voltage in the output winding which will activate the appropriate protective circuits.

3,374,399
DISTANCE PROTECTIVE RELAYING
Clyde G. Dewey, Drexel Hill, Pa., assignor to General Electric Company, a corporation of New York
Filed Feb. 1, 1966, Ser. No. 524,198
19 Claims. (Cl. 317—36)

1. A distance relay responsive to the conditions of a fault on an alternating current power transmission line, comprising:

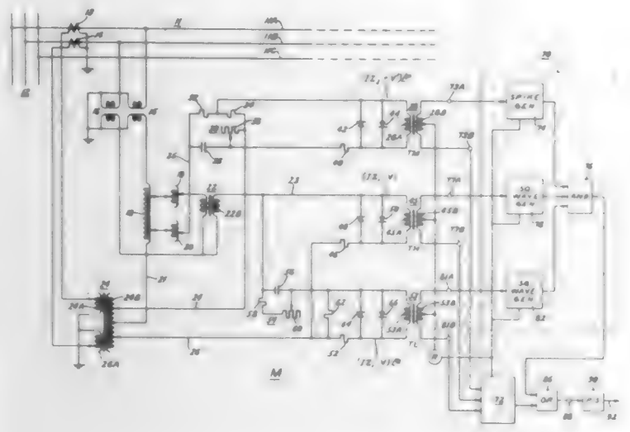
(a) first means for coupling to the line and responsive to line voltages for developing reference voltages representative of the line voltages and having a certain phase relation thereto;

(b) second means for coupling to a line and responsive to line currents for developing representative voltages related to the line currents by a predetermined constant impedance and by a predetermined phase displacement therefrom;

(c) third means connected to said first and second means for developing operating voltages related to the vector combination of said impedance and reference voltages; and

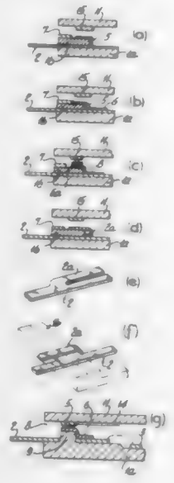
(d) fourth means for detecting, during intermittent periods of said operating voltages that are substan-

tially different from half cycles of the line voltages, the time relations of a certain instantaneous portion of successive cycles of said reference voltages, and



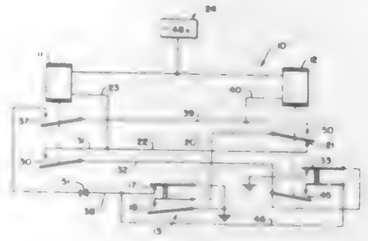
for producing output control signals indicative of fault conditions on the transmission line upon such detection.

3,374,400
COMPOUND ELECTRONIC UNIT
Seiichi Tabuchi, Hiroyuki Matsuzaki and Tatuo Tsuboi, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki-shi, Japan
Filed Sept. 1, 1965, Ser. No. 484,260
Claims priority, application Japan, Sept. 2, 1964, 39/50,143
6 Claims. (Cl. 317—101)



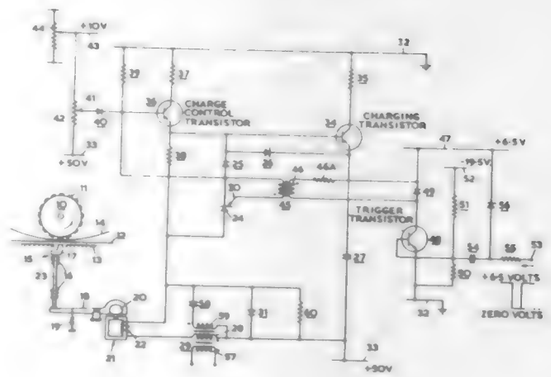
In a hybrid integrated electronic circuit, complete separation is achieved between the active and passive circuit elements by the use of a pair of planar insulating members forming the parts of a two-part housing, said members being hermetically connected with one another along registering wall-like mating surfaces thereof. The at least partly interconnected active circuit elements of the unit are supported by one of said members and the at least partly interconnected passive circuit elements of said unit are supported by the other of said members, while the elements of one member are electrically connected with the elements of the other member via registering surface contact elements disposed upon said mating surfaces and being in intimate conductive contact with one another in the closed and sealed position of the housing. Terminal conductors also in contact with said elements pass through and project outwardly from the housing.

3,374,401
RELAY FLIP-FLOP
Robert C. Swanson, Chicago, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed May 13, 1965, Ser. No. 455,514
7 Claims. (Cl. 317—140)



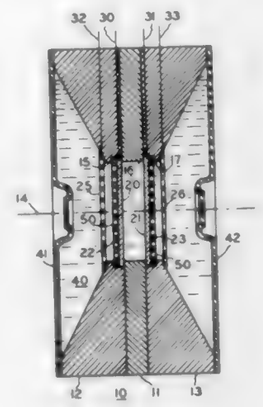
A relay flip-flop of the type wherein successive operations of an input switch cause a first relay to be operated, a second relay to be operated, the first relay to be disabled and the second relay to be disabled characterized in that operation of the relays establishes alternative holding paths for the relays through the contacts of the input switch so that later operations of the switch disable the relays by opening their holding paths.

3,374,402
DATA PRINTING APPARATUS
Roman Derc, Kidsgrove, Stoke-on-Trent, England, assignor to English Electro-Leo-Marconi Computers Limited, Kidsgrove, Stoke-on-Trent, England, a British company
Filed Oct. 7, 1964, Ser. No. 402,185
Claims priority, application Great Britain, Oct. 11, 1963, 40,191/63
17 Claims. (Cl. 317—148.5)



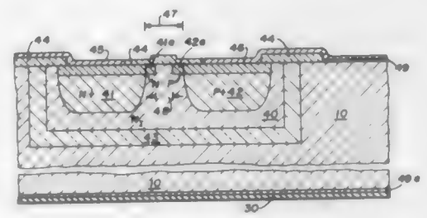
This invention relates to solenoid drive circuits for high speed printers and includes a capacitor which is connected on the one hand through a charging impedance to a power supply and on the other hand through an SCR to the solenoid. The present invention provides a charging transistor as the charging impedance. The charging transistor is controlled in cooperation with a variable bias supply whereby said charging transistor can be turned off when the voltage on the capacitor reaches an adjustable predetermined value; also said charging transistor is maintained in an off condition during discharge of the capacitor.

3,374,403
SOLION POLARIZED CATHODE ACOUSTIC LINEAR TRANSDUCER
Charles W. Larkam, Gayle E. English, Bert R. Hammer, Edwin H. Block, and Joseph L. Collins, Austin, Tex., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 30, 1965, Ser. No. 468,650
7 Claims. (Cl. 317—231)



An improved solion transducer is described having first and second spaced cathodes, first and second spaced anodes and individual flow distribution plates spaced between the cathode and anode. The entire set of plates being substantially parallel to each other and centered along a longitudinal axis of the solion housing.

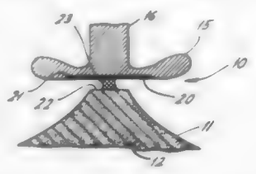
3,374,404
SURFACE-ORIENTED SEMICONDUCTOR DIODE
Gerald Luecke, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Sept. 18, 1964, Ser. No. 397,479
13 Claims. (Cl. 317—234)



A surface-oriented device as a diode having anode and cathode regions formed at one surface of a high resistivity or intrinsic semiconductor substrate is included as one element of a mixer useful for microwave applications. Conductive striplines make ohmic contact with the anode and cathode regions and a ground plane is located on the back surface of the substrate.

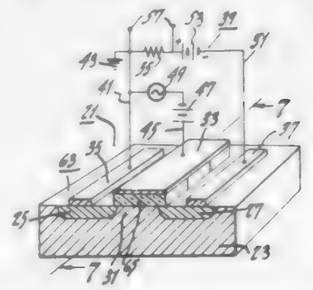
3,374,405
SEMICONDUCTIVE DEVICE AND METHOD OF FABRICATING THE SAME
Mitchell Davis, Conshohocken, and Minerva L. Sowers, West Point, Pa., assignors to Philco-Ford Corporation, a corporation of Delaware
Filed June 22, 1965, Ser. No. 466,008
13 Claims. (Cl. 317—234)

A semiconductive diode, and fabrication thereof. An etchant is applied to surface material of a semiconductor wafer, which material includes a body of semiconductor metal alloy. Thereafter, another etchant is applied which attacks only said alloy. The resultant product has a primary mesa projecting from surrounding surface portions of the wafer, and a smaller secondary mesa on the pri-



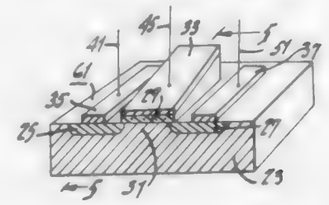
mary one. A rectifying junction is provided between the smaller mesa and the primary one.

3,374,406
INSULATED-GATE FIELD-EFFECT TRANSISTOR
John T. Wallmark, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,454
10 Claims. (Cl. 317—235)



1. An insulated-gate field-effect transistor comprising a channel having a dielectric constant, a source and a drain connected to said channel and defining the ends of a plurality of current paths in said channel, a gate spaced from said channel by an insulator having a dielectric constant, one of said dielectric constants varying laterally along said gate.

3,374,407
FIELD-EFFECT TRANSISTOR WITH GATE-INSULATOR VARIATIONS TO ACHIEVE REMOTE CUTOFF CHARACTERISTIC
John A. Olmstead, Branchburg Township, Somerset County, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,674
11 Claims. (Cl. 317—235)



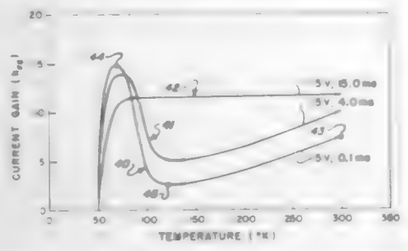
An insulated-gate field-effect transistor has a gate insulator which provides differing pinch-off voltages laterally along the gate. The transistor exhibits a remote cutoff gain characteristic.

3,374,408
TRANSISTOR HAVING CONSTANT GAIN OVER A BROAD TEMPERATURE RANGE
Howard H. Sander, Albuquerque, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed May 21, 1965, Ser. No. 457,880
4 Claims. (Cl. 317—235)

1. In an amplifying circuit employing as its signal amplification means an n-p-n silicon transistor, the method of achieving substantially constant current gain over a

range of operating temperature from about 300° K. to about 76° K. consisting in the steps of:

(1) selecting as said signal amplification means a transistor of the type described whose current gain, in a non-irriadiated state, decreases with decreasing operating temperature from a high point at about 300° K. to a valley point at about 135° K., thereafter increases to a gain peak point at about 76° K. and thereafter decreases toward zero;



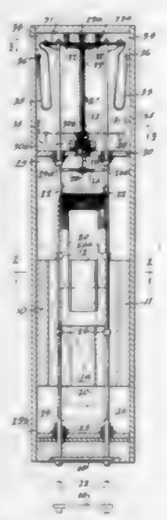
(2) irradiating said transistor to a predetermined level; and

(3) thereafter adjusting the operating collector current of said circuit until the values of current gain at said low temperature gain peak point, said valley point, and said high point are substantially equal.

3,374,409
FAST VERTICAL STROKE MOVING COIL TRANSDUCER

Andrew J. Gorka, Naperville, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 28, 1965, Ser. No. 491,062
6 Claims. (Cl. 318—122)



6. Apparatus for periodically producing a fast vertical stroke comprising:

(a) a drive armature having a conducting wire wound into a number of rectangular loops cemented together to form a rigid structure;

(b) first and second rods supporting said drive armature on either side thereof, each rod having ball stops affixed thereto above and below said drive armature;

(c) means adapted to receive said rods for confining the motion of said rods and drive armature to a vertical plane and for engaging said ball stops to define the vertical stroke of said drive armature;

(d) a north and a south magnetic pole face located opposite one another and adapted to permit the upper and lower horizontal legs of said drive armature to move therebetween;

(e) a spiral spring resiliently holding said drive armature at the top of its stroke whereby said upper ball stops are seated against said ball-stop engaging means such that only the lower horizontal leg of said drive armature is between said magnetic pole faces;

(f) a soft iron armature;

(g) means for resiliently attaching said soft iron armature to said first and second supporting rods whereby said soft iron armature moves therewith;

(h) a fixed electromagnet located to cause a small air gap to exist between said electromagnet and a surface of said soft iron armature when said drive armature is at the bottom of its stroke;

(i) means for periodically supplying pulsed energizing current to said drive armature conducting wire; said energizing current flowing in the lower horizontal leg of said drive armature to force it downward thereby causing the upper portion of said drive armature conductor to move between said pole faces and the lower horizontal leg of said drive armature to move below said pole faces, said energizing current ending before said drive armature reaches the bottom of its stroke;

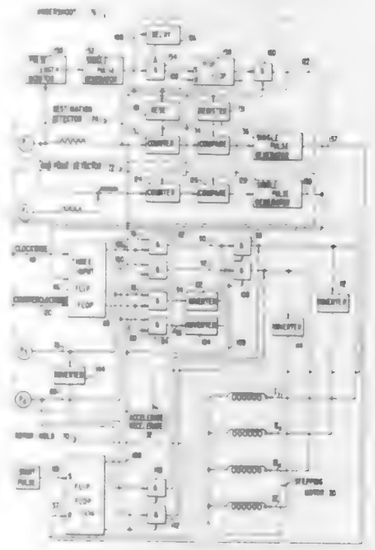
(j) current supply means for energizing said electromagnet, said electromagnet being energized before said drive armature reaches the bottom of its stroke whereby said drive armature is held at the bottom of its stroke by action of said electromagnet engaging and holding said soft iron armature thereby closing said air gap against the resilient force holding said soft iron armature, and for de-energizing said electromagnet after a predetermined time, whereby said drive armature is forced to the top of its stroke by said spiral spring; and

(k) means for supplying a second current pulse to said drive armature conducting wire responsive to the trailing edge of the pulse of said electromagnet current supply means to decelerate said drive armature before reaching the top of its stroke.

3,374,410
STEPPING MOTOR POSITIONING SYSTEM INCLUDING ACCELERATION AND DECELERATION CONTROL

Donald H. Cronquist and Joseph E. Shepard, Los Gatos, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 6, 1965, Ser. No. 423,671
7 Claims. (Cl. 318—138)



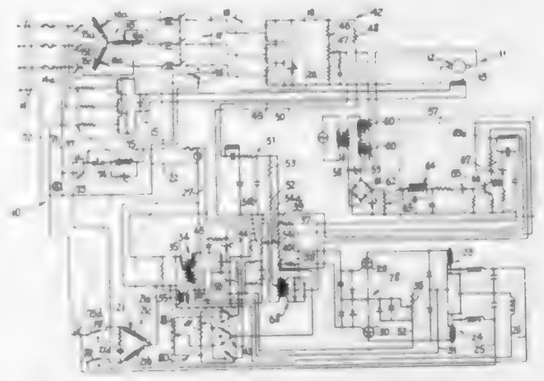
A self-regulating, high speed stepping motor where internally generated pulses, the repetition rate and duration

of which are a function of the location and velocity of the rotor, are amplified and applied to the windings so as to achieve essentially linear acceleration during a first fraction of the total distance and essentially linear deceleration during a second fraction of the total distance to be stepped.

3,374,411
DIRECT CURRENT MOTOR CONTROL

Allen R. Perrins, Cheshire, and William C. Bremner, Newington, Conn., assignors to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut

Filed June 15, 1965, Ser. No. 464,008
10 Claims. (Cl. 318—331)

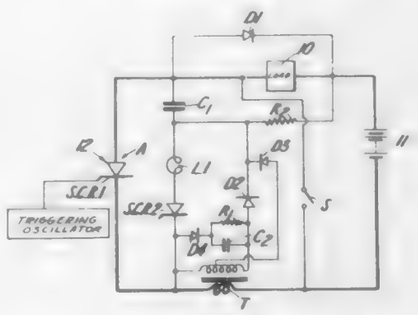


A control for adjusting and maintaining the speed of a D.C. motor by regulating the voltage to the armature by use of an adjusting means having a constant rate of adjustment and stopping said adjustment whenever the armature current exceeds a predetermined value.

3,374,412
CONTROL SYSTEM FOR REGULATING CURRENT PULSES TO BATTERY POWERED ELECTRIC MOTORS

Ivan Salisbury Payne, Basingstoke, England, assignor to Lansing Bagnall Limited, Basingstoke, England, a British company

Filed Apr. 16, 1965, Ser. No. 448,621
Claims priority, application Great Britain, Apr. 20, 1964, 16,217/64
1 Claim. (Cl. 318—341)

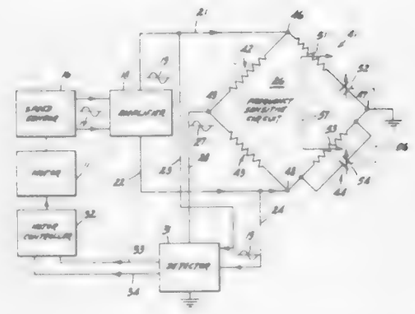


A control system for a battery powered electric motor, which system comprises a circuit containing in series the motor, a battery and a controlled rectifier, means for automatically periodically triggering the rectifier to control the supply of current to the motor in pulses, a capacitor arranged to act on the rectifier to terminate each pulse of current, a transformer having its primary connected in series in the said circuit, a subordinate rectifier circuit connecting the transformer secondary to the capacitor to charge the capacitor as the current of each pulse increases, a parallel circuit around the motor for partly charging the capacitor and containing said capacitor and a resistor and a parallel circuit shorting said controlled rectifier and said transformer primary and containing an on-off switch, the motor and the battery.

3,374,413
SYSTEM FOR MAINTAINING A MOTOR AT A PREDETERMINED SPEED

Georg Dornberger, Murray Hill, and William M. Smith, Jersey City, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 6, 1965, Ser. No. 453,605
12 Claims. (Cl. 318—341)



The disclosure is a highly sensitive and linear operating control system for maintaining a motor constant at a prescribed speed, and involves a frequency sensitive bridge tuned to balance at a frequency indicative of the prescribed speed. An input reference signal has a frequency representing the actual motor speed and is fed to the bridge. The bridge provides an error signal representative of the difference between the actual speed and the prescribed speed. The error and reference signals are fed to a detector network. The detector converts the respective signals to digital pulses which are compared in a bistable trigger circuit. The latter provides digital correction pulses which are used to indicate the sense of the error signal deviation for regulating the motor. The detector is designed to feed correction control signals to a motor controller for returning the motor to its prescribed speed. A noise and harmonic check circuit shorts out operation of the detector in the region of bridge balance. This eliminates spurious correction control signals due to noise and harmonics.

3,374,414
POWER SUPPLY APPARATUS CONVERTING D.C. TO A STEPPED WAVE FOR APPROXIMATING A SINE WAVE

James R. Garnett, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 25, 1964, Ser. No. 354,807
6 Claims. (Cl. 321—5)

1. A sine wave approximation power supply having a three-phase output comprising:

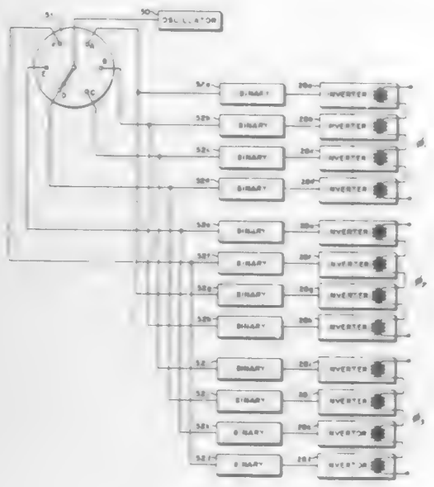
a plurality of output linked square wave power supplies divided in three groups each having a second plurality of output linked square wave power supplies, said square waves in each of said groups being successively out of phase with the other said waves in the same said group by a predetermined amount which is an integral division of 360°, each of said square wave power supplies comprising:

a pair of silicon controlled rectifiers each having a gate, an anode and a grounded cathode;

a first transformer having an input coil and an output coil, the input coil being connected across the anodes of said rectifiers;

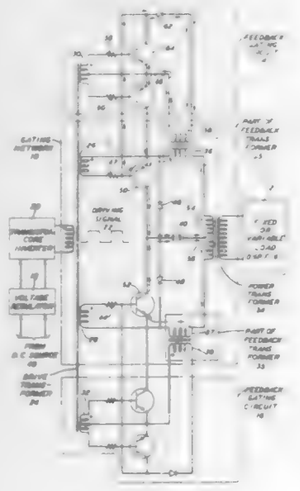
a voltage supply connected from ground to the center of said input coil; and

means to supply to the gates of said rectifiers a pair of input square waves 180° out of phase with each other of magnitude sufficient to cause conduction during one-half the cycle, each pair of input square waves being out of phase with the pairs of waves in successive square wave



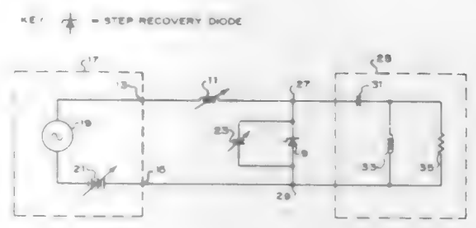
power supplies in the same said group by said predetermined amount which is an integral division of 360° and the first pair of input square waves of the first group being out of phase with the first pairs of input square waves of the second and third groups by 120° and 240°, respectively.

3,374,415
TRANSISTOR INVERTER UTILIZING POLARITY CONTROLLED CURRENT FEEDBACK
William E. Jewett, Basking Ridge, and Richard P. O'Connell, Ironia, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 23, 1965, Ser. No. 489,485
4 Claims. (Cl. 321—18)



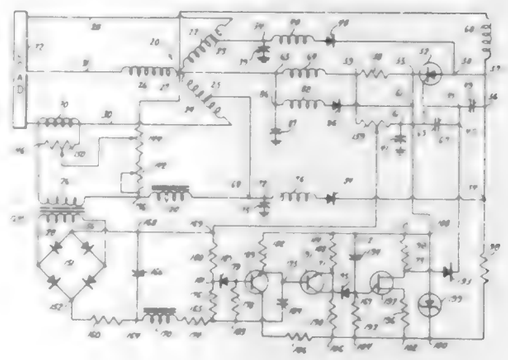
In a driven inverter which utilizes positive current feedback, a feedback gating circuit is associated with each of the switching transistors. The respective feedback gating circuits limit the application of the feedback signal to the switching transistors to that portion of the basic drive signal during which the feedback signal is in phase with the particular drive signal.

3,374,416
IMPULSE CIRCUIT INCLUDING A STEP-RECOVERY DIODE
Robert D. Hall, Los Altos, and Stewart M. Krakauer, Palo Alto, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Sept. 22, 1965, Ser. No. 489,311
4 Claims. (Cl. 321—69)



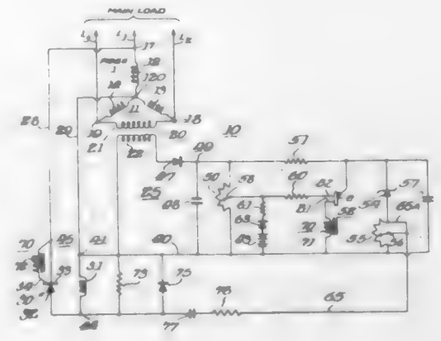
An impulse generating circuit includes a step recovery diode which produces impulses having rise and fall times which are adjustable over a wide range down to values of the order of 100 picoseconds or less. A circuit of this type in conjunction with external circuitry may be used as a harmonic generator having a conversion efficiency which closely approaches unity.

3,374,417
VOLTAGE CONTROLLING SYSTEM FOR ELECTRIC GENERATOR
David L. Trower, Affton, Mo., assignor to Century Electric Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 26, 1965, Ser. No. 450,772
18 Claims. (Cl. 322—28)



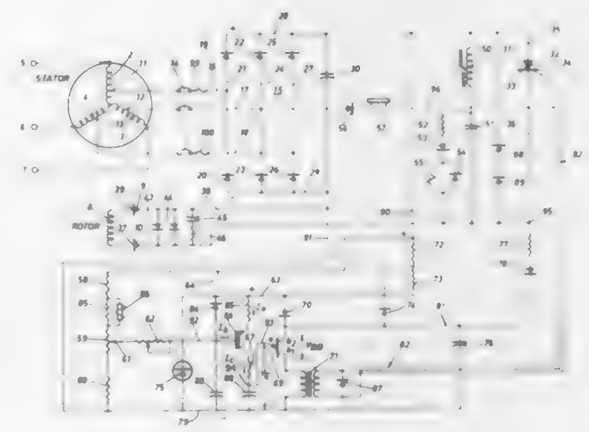
A combination exciter and regulator for an alternating current generator utilizes the residual magnetism of that generator to build up the excitation for that generator to the poin where that excitation can mainain the output voltage of that generator at the desired level; and, thereafter, that combination exciter and regulator will permit a drop in the speed of the prime mover for that generator to reduce the output voltage of that generator—and thus the load on that prime mover—so that prime mover can increase its speed to its normal value. In addition, that combination exciter and regulator has an amplifying subcircuit which enables small changes in the value of the output voltage of that generator to provide relatively large changes in the current flowing through the field winding of that generator, and thereby hold that output voltage close to its desired level.

3,374,418
ALTERNATING CURRENT VOLTAGE REGULATOR INCLUDING SYSTEM NO-LOAD TO FULL-LOAD COMPENSATING MEANS
Robert M. Henderson, Williams Bay, and Richard Zechlin, Beloit, Wis., assignors to Fairbanks Morse Inc., New York, N.Y., a corporation of Delaware
Filed May 13, 1965, Ser. No. 455,405
9 Claims. (Cl. 322—28)



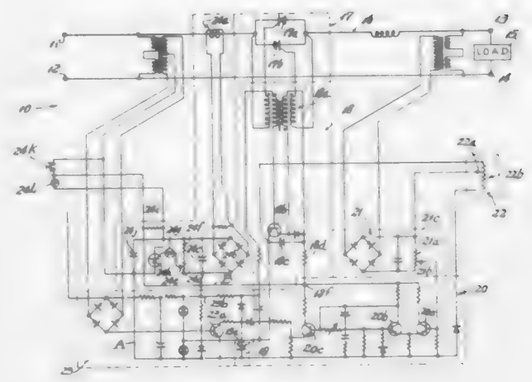
An alternating current voltage regulator is disclosed including means for adjusting for the change in output of the generating system as the system goes from no-load to a full-load condition.

3,374,419
STATIC EXCITER AND REGULATOR FOR ROTATING GENERATORS
Dennis F. Williamson, Peterborough, Ontario, Canada, assignor to Canadian General Electric Company, Limited, Toronto, County of York, Ontario, Canada, a corporation of Canada
Filed June 24, 1964, Ser. No. 377,624
3 Claims. (Cl. 322—72)



Alternating current is taken from a convenient source such as taps on the armature windings or auxiliary armature windings of an alternating-current generator. The alternating current is converted to direct current by means of rectifiers and excites the field of the generator. A controlled unidirectional current conducting device such as a silicon-controlled rectifier (SCR) having an anode, a cathode and a gating electrode is used to control the flow of direct current from the rectifier to the field coils of the generator, the anode and cathode being connected in series with the field coils. A voltage comparator compares the output voltage of the generator with a reference voltage to obtain a control signal which is inversely proportional to the deviation of the output voltage from the reference voltage. The device is rendered conductive by applying to the gating electrode firing pulses which have a frequency proportional to the magnitude of the control signal, and conduction is terminated at a fixed time after each initiation of conduction by a quenching pulse derived from a commutating circuit and applied to the anode and cathode of the device in opposition to the voltage causing the device to conduct. The firing and commutating circuits are designed such that each pulse from the firing circuit turns the device on and each successive pulse from the commutating circuit turns the device off. The current flowing from the rectifiers to the field coils will be a high-frequency unidirectional pulsating current which the time duration of the pulses will be fixed, but the frequency of the pulses will vary with fluctuations in output voltage of the generator, the variations being such as to restore the generator voltage to a level determined by the reference voltage. Since the field coils constitute an inductive load, a flywheel arrangement of rectifiers may be employed to utilize energy stored in the inductive load to smooth out the pulsating current into a steady state current of a value which will maintain the generator voltage substantially constant. The system incorporates a lockout circuit for synchronizing the firing pulses with the quenching pulses and a recovery circuit for restoring control over the generator by the control system should this control be lost due to abnormal conditions.

3,374,420
POWER CONTROL DEVICE HAVING AN OVERLOAD CURRENT CIRCUIT
John P. Weber, Jr., West Hartford, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Oct. 6, 1964, Ser. No. 401,841
8 Claims. (Cl. 323—9)

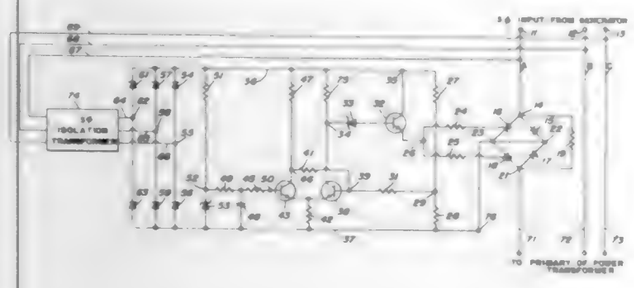


A power control unit for regulating power to a load by adjusting the conduction of SCR's including a circuit for sensing the occurrence of a relatively sustained overload value of current and preventing the application of triggering pulses to the SCR's until the circuit is reset.

3,374,421
TRANSIENT LIMITING CURRENT
John F. Ringelman, Glen Burnie, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 2, 1964, Ser. No. 415,520
11 Claims. (Cl. 323—22)

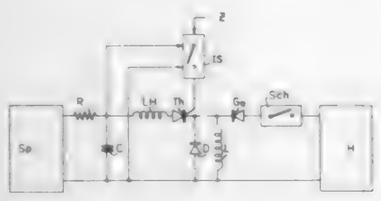
A circuit for protecting an A.C. power supply circuit from transients having a network containing SCR's and diodes and a transistor network coupled to the control electrodes of the SCR's. A Zener diode is coupled between the base of the transistor and a differential amplifier cir-

cuit which is responsive to a voltage control network which is coupled to a diode rectifier circuit which is responsive to the output of the A.C. circuit to enable the



differential amplifier circuit to control the Zener diode to activate the transistor to enable the SCR's to conduct under normal operating conditions and to impede current when excessive voltage appears on the A.C. circuit.

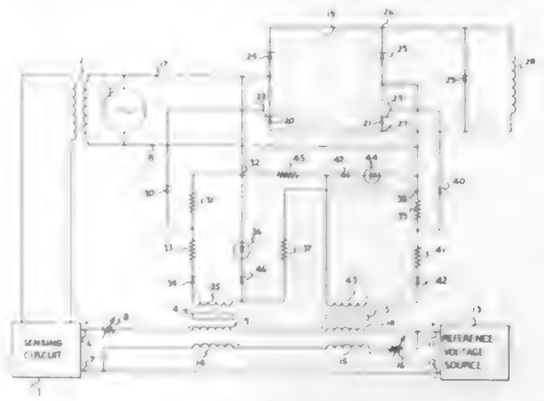
3,374,422
THYRISTOR SWITCHING AMPLIFIERS FOR RAPIDLY SWITCHING-ON INDUCTIVE LOADS
Peter Blume, Hamburg-Lurup, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 12, 1965, Ser. No. 439,362
Claims priority, application Germany, Mar. 14, 1964, P 33,840
3 Claims. (Cl. 323—22)



A switching circuit for an inductive load is provided with a voltage source having an RC circuit connected in series with an auxiliary inductor and a thyristor, and a diode connected in parallel with the inductive load. The gating circuit is responsive to the instantaneous voltage across the capactitive element of the RC circuit to gate a pulse triggering the thyristor into conduction, and the capacitor voltage of the RC circuit thereby controls the extinguishing of the thyristor through the action of the auxiliary inductor.

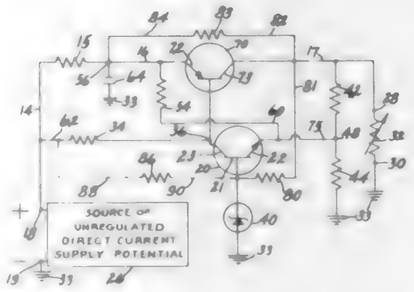
3,374,423
SCR POWER SUPPLY REGULATOR TRIGGERED BY MAGNETIC AMPLIFIERS
Stuart F. Hemmenway, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 3, 1965, Ser. No. 452,734
2 Claims. (Cl. 323—22)

A regulating circuit has a magnetic amplifier for each silicon-controlled rectifier and a regulated, half-wave voltage supply for each magnetic amplifier. The regulated voltage supply includes a zener diode having the anode thereof connected to the cathode of each silicon-controlled rectifier. Circuit means interconnect the gate winding of the magnetic amplifier and the regulated voltage supply with the gate circuit of the silicon-controlled rectifier to control the current flow through the silicon-controlled rectifier. Thus, when the silicon-controlled rectifier is forward-biased by the A-C supply and the magnetic amplifier saturates, gate current flows through the gate circuit of the silicon-controlled rectifier to fire it and energize the load. The use of the individual half-wave voltage sources with zener diodes obviates expensive



voltage isolation devices and by selecting the magnitude of voltage of the half-wave voltage source to be much less than the magnitude of average voltage of the A-C source, the gate circuit is made substantially independent of undesirable transient fluctuations in the magnitude of A-C source voltage.

3,374,424
SERIES TYPE POTENTIAL REGULATOR
Eldred H. Wiechmann, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 17, 1965, Ser. No. 456,190
2 Claims. (Cl. 323—22)



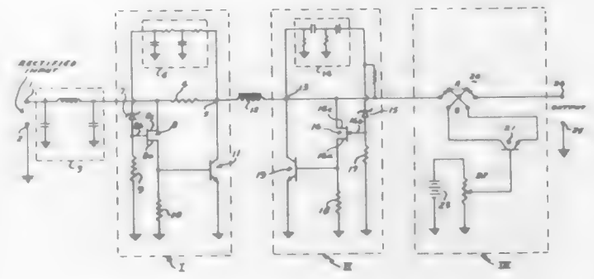
A series type potential regulator wherein the current carrying electrodes of a regulating transistor are connected in series with a source of unregulated direct current potential and an external electrical load. The magnitude of base bias potential for the regulating transistor is controlled by the degree of conduction of a control transistor connected in the circuit in such a manner that the conduction therethrough is determined by the magnitude of the regulated potential.

3,374,425
CASCADED POWER SUPPLY FOR PRODUCING A CLEAN D-C OUTPUT
Irving F. Barditch and Charles G. Brooks Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed May 19, 1966, Ser. No. 551,866
3 Claims. (Cl. 323—22)

1. A voltage regulating circuit for connection between the output of an alternating current rectifier and a load, said circuit comprising:

(a) three cascaded sections with a series inductor connected between the first and second sections, counting from the rectifier end of the circuit;

(1) said first section comprising
  (a) a series fixed resistance element,
  (b) a shunt variable resistance element located at the load end of said series resistance element, and
  (c) means sensing the voltage across said shunt resistance element and responsive to changes in said voltage at the ripple frequency of said rectifier and below for producing conversely related changes in the resistance of said shunt element;

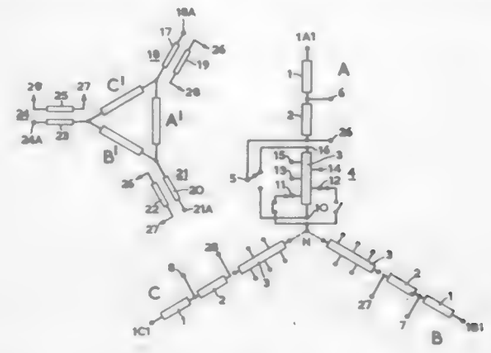


(2) said second section comprising
  (a) a second shunt variable resistance element, and
  (b) means sensing the voltage across said second shunt resistance element and responsive to changes in said voltage at frequencies above said ripple frequency for producing inversely related changes in the resistance of said second shunt element; and

(3) said third section comprising
  (a) a transistor,
  (b) a two-position switching means operative in one position to connect the collector-emitter path of said transistor serially in said circuit for load current conduction in the forward direction of the emitter-base junction and in the other position for conduction in the back direction of the emitter-base junction, and
  (c) means for applying an adjustable direct reference voltage to the base of said transistor.

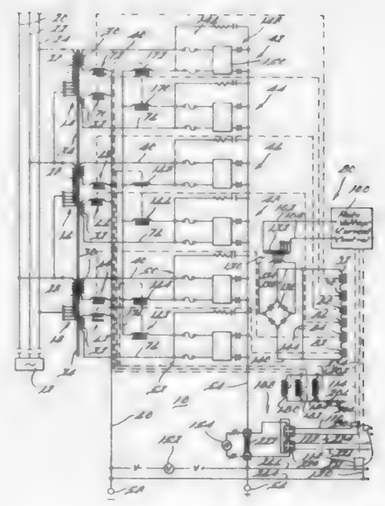
3,374,426
VOLTAGE REGULATED POLYPHASE AUTO TRANSFORMER
Fahir Bedil, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Dec. 8, 1965, Ser. No. 512,409
Claims priority, application Great Britain, Dec. 23, 1964, 52,291/64
5 Claims. (Cl. 323—45)

1. In a three phase electrical auto-transformer, three main windings and an auxiliary three phase delta connected winding, each main winding comprising first, second and third winding portions with the second and third portions connected in series, each first winding portion having tapping points thereon, a first terminal connection connected to the outermost end of each third winding portion, a second terminal connection connected between the junction of each second and third winding portion, a third terminal connection connected to the innermost end of each second winding portion, tapchanging means associated with the tapping points of each first winding portion and each third terminal connection and serving to connect the three main windings to a common star point and to raise or lower the output voltage from those terminal connections serving as output terminals of the transformer, additional transformer means having first, second and third primary windings and associated first, second and third secondary windings, one end of each such secondary winding being connected to a respective junction point of the windings of said delta winding, the primary windings of the additional transformer means being connected across respective pairs of said third terminal connections so that the secondary windings of the



additional transformer means inject onto the output of the delta connected winding voltages which are of a magnitude and sense dependent upon the settings of the tapchanging means and which are 180° out of phase with the voltages delivered by the delta winding proper when the tapchanging means are operated in a sense to lower the output voltage at those terminal connections serving as output terminals of the transformer, and which are in phase with the voltages delivered by the delta winding proper when the tapchanging means are operated in a sense to raise the said output voltages.

3,374,427
MAGNETIC AMPLIFIER VOLTAGE REGULATOR WITH PRELOAD SYSTEM
Charles E. Fenoglio, Detroit, and Michael A. Koltuniak, Warren, Mich., assignors to The Udylite Corporation, Warren, Mich., a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,857
10 Claims. (Cl. 323—89)



1. In a reactor controlled power supply circuit having output terminals and a load, a source of alternating current, a power transformer having a primary winding connected to the source of alternating current and a secondary winding, a control saturable reactor including a controlled winding connected to said secondary winding, and a shunt saturable reactor for loading said control saturable reactor when the load across said output ter-

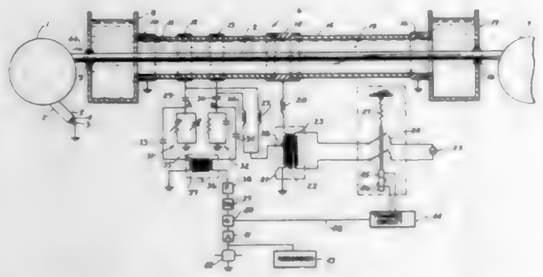
minals is minimized, said shunt reactor having a controlled winding shunting said output terminals and a controlling winding responsive to electrical condition in the controlled winding of said control saturable reactor to preload said control reactor upon the occurrence of a relatively small load across said terminals.

3,374,428

APPARATUS FOR DETECTING AND RECORDING CORONA DISCHARGE IN A MOVING INSULATED POWER CABLE HAVING A SEMICONDUCTING INSULATION SHIELD

George S. Eager, Jr., Upper Montclair, and George Bader, Metuchen, N.J., assignors to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed Sept. 20, 1966, Ser. No. 580,799
5 Claims. (Cl. 324—54)



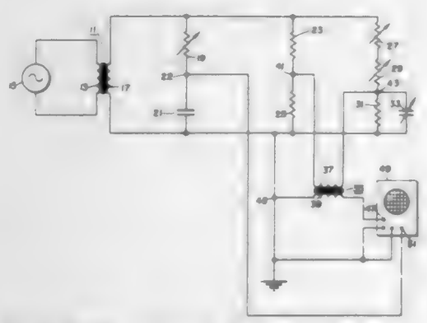
Apparatus for detecting and recording corona discharges generated within the insulation of an insulated power cable having a semiconducting insulation shield as the cable moves continuously through a liquid-filled test bushing having a plurality of spaced electrodes in contact with the liquid. This is an extension of the invention disclosed in applicants' Patent No. 3,346,809, which discloses apparatus for continuously measuring ionization inception voltage and ionization extinction voltage in an unshielded insulated conductor. In the present invention the high voltage source is applied to the cable under test for a short time, followed by a longer interval during which no voltage is applied, in order to permit dissipation of heat developed by current flow in the insulation shield. False indications which might result from switching surges are prevented by synchronously gating the passage of the detector signal to the recorder with the opening and closing of the switch which controls application of the high voltage.

3,374,429

BRIDGE CIRCUIT FOR DETERMINING THE THERMAL PARAMETERS OF BRIDGEWIRES USED IN ELECTRO-EXPLOSIVE DEVICES

Louis A. Rosenthal, Highland Park, N.J., assignor to the United States of America as represented by the Secretary of the Navy

Filed May 15, 1964, Ser. No. 367,903
6 Claims. (Cl. 324—57)



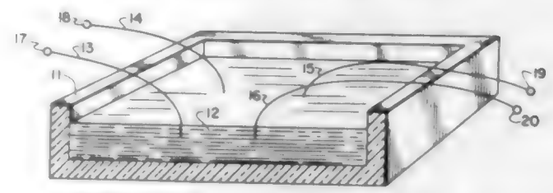
An A.C. bridge circuit for determining the thermal parameters of bridgewires used in electro-explosive devices. When an A.C. supply voltage is applied to the bridge network in which a bridgewire of an electro-explosive device is connected as a leg thereof, an A.C. voltage having three times the supply voltage will appear across the bridgewire which has an amplitude and phase relationship which are indicative of the thermal parameters of the bridgewire.

3,374,430

ELECTRICAL RESISTANCE STANDARD HAVING AN OUTPUT VOLTAGE REPRESENTATIVE OF APPLIED FREQUENCY, AND OF RESISTIVITY AND PERMEABILITY OF A CONDUCTING MEDIUM

Tenny D. Lode, Madison, Wis., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota

Filed Jan. 14, 1965, Ser. No. 425,420
7 Claims. (Cl. 324—64)



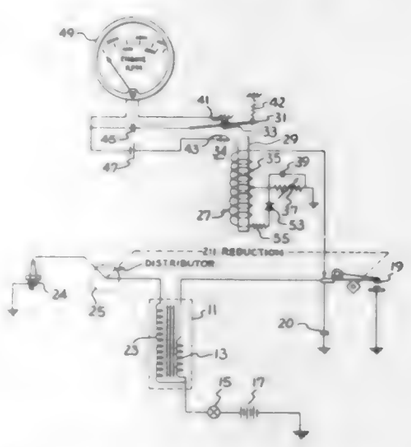
1. The method of establishing a voltage representative of a standard value of frequency and representative of the resistivity and permeability of a conducting body comprising the steps of: making four spaced electrical connections, each connection being made directly to a surface of a conducting body having a known value of the product of resistivity and permeability and each connection being made to the surface at a location spaced from the other connections in a known surface spacing relation; applying an alternating current through two of said spaced connections, said alternating current having a precisely known frequency of sufficiently high rate such that the electromagnetic skin depth in said conducting body is small compared to the spacing between any two of said connections; and connecting the other two spaced electrical connections to voltage measurement means; whereby said voltage is substantially proportional to the square root of the product of resistivity, permeability, and frequency.

3,374,431

RELAY TYPE IGNITION ENGINE TACHOMETER WITH CIRCUITRY FOR CANCELLING TRANSIENT COIL CURRENTS

Vernon C. Westberg, Arlington Heights, Ill.
(22 S. State St., Elgin, Ill. 60120)

Filed Aug. 27, 1965, Ser. No. 483,065
3 Claims. (Cl. 324—70)



A relay type ignition tachometer having, in addition to a first relay winding used to commutate a storage ca-

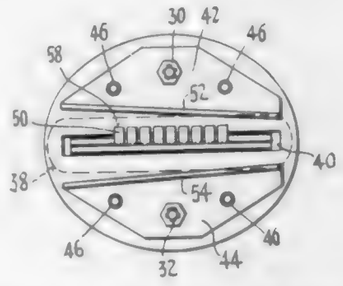
pacitor between a meter and a charging source (or a discharging path), an auxiliary winding for suppressing the effect of spark induced current in the first winding upon relay operation.

3,374,432

ELECTRIC FREQUENCY RESPONSIVE DEVICE

William J. Fitzgerald, West Haven, and Raoul A. Forest, Jr., and Carl J. Iaccarino, New Haven, Conn., assignors to J-B-T Instruments, Inc., New Haven, Conn., a corporation of Connecticut

Filed Jan. 24, 1966, Ser. No. 522,501
7 Claims. (Cl. 324—80)



1. An electric frequency responsive device comprising, in combination:

(a) a plurality of juxtaposed magnetic members having different resonant frequencies,

(b) a winding disposed adjacent said members, to influence the same with a common magnetic flux when the winding carries current, and

(c) means including a magnetic field structure having pole pieces adjacent said members, for influencing the members with magnetic flux,

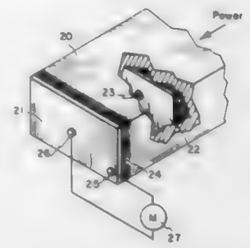
(d) said means providing a lesser flux density at a member having a lower resonant frequency than at a member of higher resonant frequency, thereby to render more uniform the response of the members to flux from said winding.

3,374,433

MICROWAVE POWER DETECTOR UTILIZING DIFFUSION OF HOT CARRIERS IN A SEMICONDUCTOR

Richard I. Harrison, Jericho, and Joseph Zucker, Queens, N.Y., assignors to General Telephone and Electronic Laboratories, Inc., a corporation of Delaware

Filed May 20, 1964, Ser. No. 368,879
9 Claims. (Cl. 324—106)



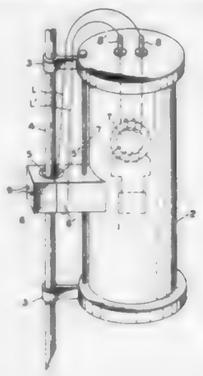
A microwave cavity power detector is described in which one wall of the cavity is formed of semiconductor material having a low carrier concentration. The currents induced in the semiconductor wall form a standing wave pattern having maximum and minimum values. By locating contacts at the locations of both the maxima and minima, the diffusion of hot carriers in the wall results in a voltage between contacts which is a function of the power in the cavity.

3,374,434

INDUCTIVE COUPLING APPARATUS FOR USE IN COUPLING TO UNDERWATER ELECTRIC SYSTEMS AND THE LIKE

Kenneth E. Perry, Wayland, Mass., assignor to Geodyne Corporation, Waltham, Mass., a corporation of Massachusetts

Filed Sept. 9, 1965, Ser. No. 486,112
6 Claims. (Cl. 324—127)



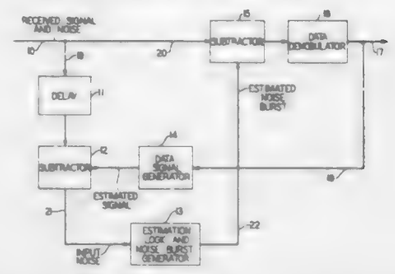
In an apparatus for inductively coupling a multiterminal electric system, disposed in a water-tight housing, to an underwater conductive-cable transmission line for the electric system, from which cable the housing is mechanically supported in the water, electrical connection between the electric system and the cable is established by means of a conductive loop that is connected between two terminals of the electric system, the cable and the loop being supported in an annulus that is formed by a two-part magnetic core one of the parts of which is mechanically supported by the housing and the other part of which is detachably secured to the said one part for the purpose of facilitating detachably mounting the cable and the loop in the annulus, the cable and the loop, however, being out of electrical contact with the core.

3,374,435

REDUCTION OF THE EFFECT OF IMPULSE NOISE BURSTS

Joel S. Engel, Bethesda, Md., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 29, 1965, Ser. No. 475,703
11 Claims. (Cl. 325—324)



8. In combination with a data transmission system subject to impulse noise, means for reducing the effect of such impulse noise on a received data signal comprising

means for regenerating the transmitted data signal waveshape for each individual demodulated data bit,

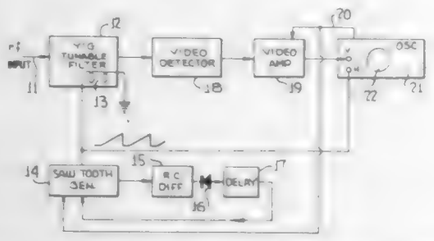
means subtracting each regenerated data bit from the total received signal to obtain an estimate of the noise added by said transmission system,

means responsive to the noise from said subtracting means exceeding a predetermined minimum level for generating an estimated noise burst locked in phase and time of occurrence with the onset only of a true noise burst, and

means taking the difference between said estimated noise

burst and the total received signal to obtain a received data signal substantially free of impulse noise.

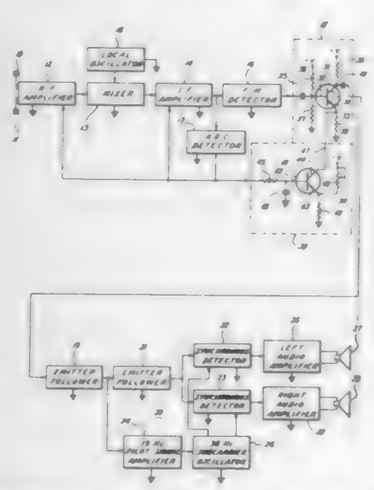
3,374,436
SPECTRUM ANALYZER INCLUDING A TUNED BAND-PASS FILTER
George H. Thiess, Dallas, Tex., assignor, by mesne assignments, to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Mar. 9, 1965, Ser. No. 438,340
14 Claims. (Cl. 325—336)



1. A scanning spectrum analyzer for deriving information indicative of the frequency components of an R.F. signal over a predetermined relatively wide frequency band, a tunable band-pass filter responsive to said R.F. signal, said filter including a crystal having molecules with magnetic moments precessed at a rate determined by a magnetic field applied thereto, means for applying a time variable magnetic field to said crystal to scan the center frequency of said filter through said frequency band, and detector means responsive to the R.F. signal deriving from said filter for providing a D.C. signal level indicative of the R.F. components passed through said filter.

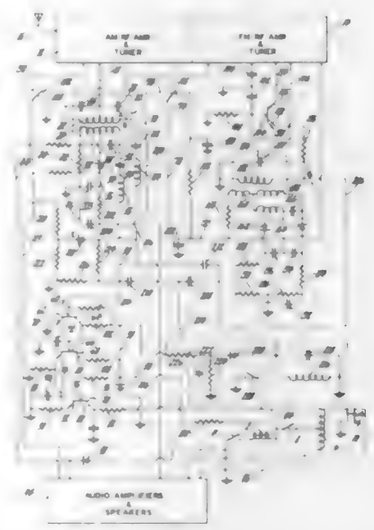
12. A filter comprising a ferrimagnetic crystal having molecules with magnetic moments precessed at a rate determined by a magnetic field applied thereto, a permanent magnet having an air gap for providing said magnetic field, said crystal being disposed in said air gap, a pair of loops disposed in orthogonal planes to each other being coupled about said crystal and having associated magnetic fields extending in a plane orthogonal to the plane of said magnetic field of said permanent magnet.

3,374,437
SQUELCH SYSTEM FOR RADIO RECEIVERS
Carl F. Heald, St. Joseph, Mich., assignor to Heath Company, St. Joseph, Mich., a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 392,159
3 Claims. (Cl. 325—478)



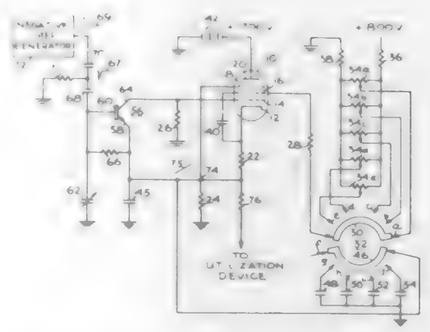
A squelch system for use in radio receivers. A squelch control transistor 41 is responsive to the receiver AGC voltage and acts to cut off a signal amplifier transistor 31 whenever the received radio signal carrier level falls below a preset value.

3,374,438
STOP-ON SIGNAL TUNER FOR COMBINED AM-FM RECEIVERS
Ervin R. Buehler, Galveston, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 17, 1964, Ser. No. 397,147
7 Claims. (Cl. 325—470)



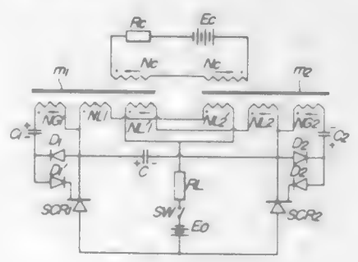
A stop-on station system for combined AM-FM receivers having signal seeking tuners. Signal to stop indexing is modified by a delay signal to continue indexing to middle of incoming signal band. Signal transfer circuit of system is detuned by a capacitive diode during standby to prevent distortion.

3,374,439
POSITIVE RAMP VOLTAGE GENERATOR
John J. Hickey, Hawthorne, Calif., assignor to TRW Inc., a corporation of Ohio
Continuation of application Ser. No. 316,909, Oct. 17, 1963. This application Apr. 22, 1966, Ser. No. 544,630
8 Claims. (Cl. 328—183)



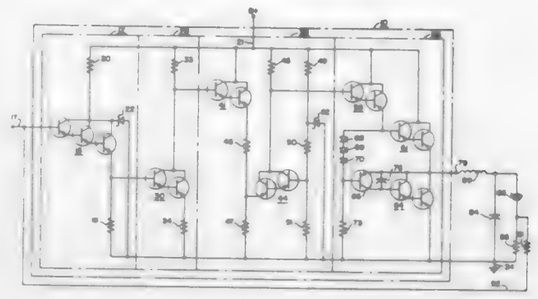
1. A ramp voltage generator circuit, comprising:
a vacuum tube including cathode, control grid and anode electrodes and having a constant current characteristic over a wide range of changing anode to cathode voltage;
means for establishing initial operating potentials on said electrodes such that said control grid is negatively biased a first amount relative to said cathode and said anode is positive relative to said cathode;
load capacitance means connected in series with said tube;
means in circuit between said control grid and said cathode for abruptly reducing by external trigger the negative bias below said first amount to establish a second potential difference between said control grid and said cathode so as to increase the current flow through said tube and charge said load capacitance means;
means for maintaining constant said second potential difference between said control grid and said cathode for the duration of the desired ramp voltage, thereby to establish constant current flow through said tube and produce a linear ramp voltage across said load capacitance means;
and means for terminating the operation of said generator circuit after generation of a single ramp voltage to cause the generator circuit to reset itself for the reception of the next trigger.

3,374,440
MAGNETIC AMPLIFIER CONTROLLED POWER CIRCUIT OPERATIVE WITH D.C. ELECTRIC SOURCE
Yoshinori Kawai, Katsuta-shi, Hisakatsu Kiwaki, Mitoshi, and Hiroshi Sato, Katsuta-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Nov. 25, 1963, Ser. No. 325,827
Claims priority, application Japan, Nov. 24, 1962, 37/52,932
10 Claims. (Cl. 330—8)



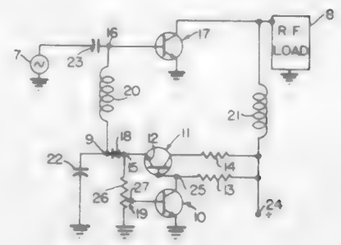
A magnetic amplifier controlled power circuit operable from a D.C. source for feeding a load with proportionally controlled current. The power circuit is comprised by a pair of saturable magnetic cores having a control winding wound on and extending over the pair of cores and a pair of output windings each respectively wound on one of the pair of cores. A pair of semiconductor switching elements are provided each having two load electrodes and a control electrode, respectively. The load electrodes of each of the semiconductor switching elements are connected in series with respective output windings, and a direct current electrical source and a load are connected in common with each of the series connected semiconductor switching elements and its series connected output winding. Turn on circuits are connected to the control electrodes of each of the switching semiconductor devices and to respective ones of the saturable cores for turning on the semiconductor switching elements in response to the saturation condition of the cores. As a consequence of this arrangement, the semiconductor switching elements are rendered conductive and non-conductive alternately in accordance with the saturation and non-saturation of the pair of magnetizable cores. The circuit is completed by means for applying a variable magnitude direct current control signal to the control winding to control the frequency of turn-on and turn-off of the circuit to thereby proportionally control the pulsating power output from the amplifier.

3,374,441
DIRECT COUPLED, TEMPERATURE STABILIZED AUDIO AMPLIFIER
Edmund A. Karcher, Severna Park, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 2, 1964, Ser. No. 408,052
5 Claims. (Cl. 330—30)



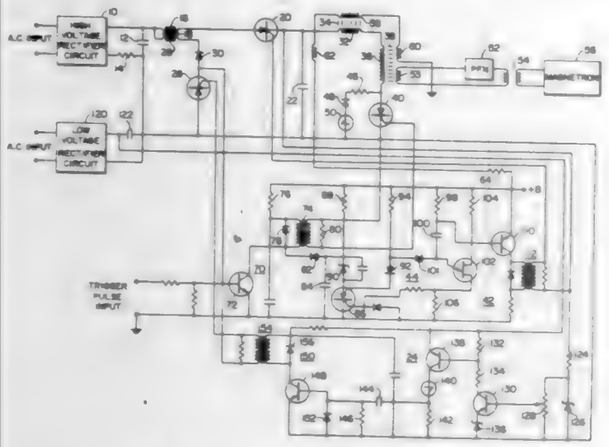
An amplifier circuit having a plurality of direct coupled transistor stages including an output stage having an output terminal. A speaker has one end connected to the output terminal and another end connected to a capacitor, the other end of which is connected to ground. In parallel with the capacitor is the serial connection of a Zener diode and resistor. The signal appearing at the output terminal is comprised of an AC component and a DC component. The DC component of the output signal appears across the capacitor and any changes in the DC level shows up entirely across the resistor of the Zener diode-resistor combination. This change in voltage is fed back to the input stage thus providing a stabilized amplifier system.

3,374,442
BIAS CONTROL CIRCUIT
Noel J. Griffin, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Sept. 30, 1965, Ser. No. 491,651
2 Claims. (Cl. 330—40)



Linear operation of a common emitter transistorized radio frequency power amplifier is provided by this invention. An R.F. source is capacitively coupled to the base of the amplifier. The forward bias network for that base comprises a series combination of choke, diode and a resistor having a variable tap output. A constant voltage regulator device comprising a pair of transistors is coupled to this variable tap output and to the anode of the diode in such a manner as to provide a stable positive voltage at the reference point established by that anode. The apparent input D.C. resistance of the power transistor decreases as its collector current is increased by R.F. excitation. Changes in voltage across the diode are opposite to the changes across the input base-emitter junction of the power transistor and the constant voltage available at the reference point is distributed between the diode and this junction.

3,374,443
PULSE GENERATOR FOR MODULATING A MAGNETRON
Reinhold Braun and John B. Porter, San Diego, Calif., assignors to General Dynamics Corporation, a corporation of Delaware
Continuation of application Ser. No. 490,289, Sept. 27, 1965. This application Aug. 24, 1967, Ser. No. 663,166
4 Claims. (Cl. 331—87)

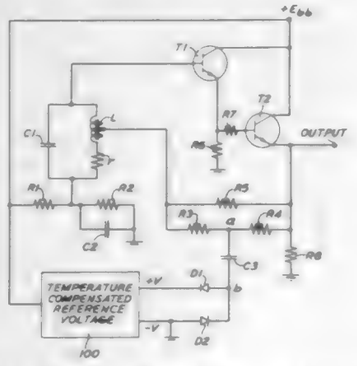


A system for developing pulses of a controlled energy content including a charge storage capacitor and means for controlling the charge applied on the capacitor and a discharge circuit which when coupled to the capacitor by means of an electronic switch develops an output pulse of a controlled energy content.

3,374,444
VACANCY COMPENSATED CALCIUM NEODYMIUM VANADATE PHOSPHORS
Lothar H. Brixner, Brandywine Hills, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,521
6 Claims. (Cl. 331—94.5)

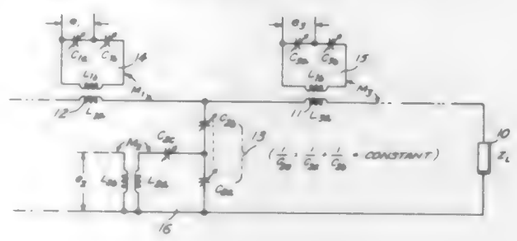
Luminescent compositions, useful as laser components, are crystalline, single-phase solid solutions of neodymium-substituted, vacancy-compensated calcium vanadates of the formula $Ca_{3-3x}Nd_{2x}\Phi_x(VO_4)_2$ where Φ represents the vacancy in the crystal lattice and x has a value of 0.01 to 0.3.

3,374,445
LOW DISTORTION OSCILLATOR USING DUAL FEEDBACK PATHS AND SYMMETRICAL CLIPPING
Wilmer B. Gaunt, Jr., New Shrewsbury, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 28, 1966, Ser. No. 545,911
10 Claims. (Cl. 331—109)



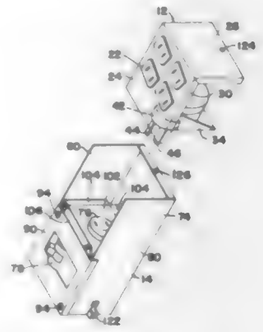
An oscillator is disclosed which achieves low harmonic distortion and improved amplitude and frequency stability by use of two positive-feedback paths and a symmetrical clipping network carefully connected to a selected point on one of the feedback paths.

3,374,446
MULTICOUPLING SYSTEM WITH A DISTRIBUTION LINE
Sam E. Parker, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 29, 1964, Ser. No. 422,093
3 Claims. (Cl. 333—8)



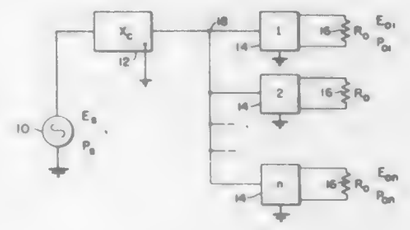
Many transmitters and receivers must be coupled to a single antenna as, for example, aboard a battleship where space is limited. The classic ladder network with parallel and shunt arms are connected at one end to the antenna. The impedances of the L and C elements of the ladder are selected so that the characteristic impedance of the ladder matches the impedance of the load. The transmitters and receivers are then coupled into the impedances elements in either the parallel or shunt arms without upsetting the match and with zero on minimum coupling between the transmitters and receivers.

3,374,447
PLUGGABLE FILTER ASSEMBLY FOR USE IN ELECTRONIC DISTRIBUTION SYSTEM
James Stilwell, Maple Glen, Pa., assignor to Telesystems Corporation, Glenside, Pa., a corporation of Pennsylvania
Filed Aug. 12, 1964, Ser. No. 389,105
8 Claims. (Cl. 333—70)



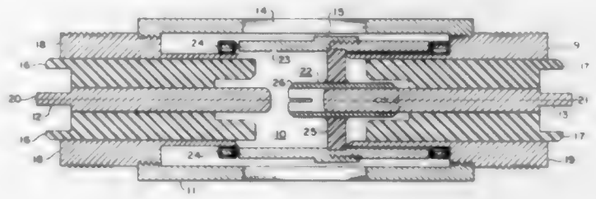
1. A pluggable filter assembly for use in electronic distribution systems in connection with antennae signals comprising an upper pluggable filter component contained in a filter housing and a lower receptacle circuit breaker component contained in a receptacle housing, said filter component including a filter assembly and a male plug depending therefrom, said circuit breaker component having a main receptacle associated therewith and adapted to receive said plug said filter housing having a front wall, said receptacle housing having elongated panels defining a space for removably receiving said filter component when said male plug is received in said main receptacle whereby when said filter component is rendered inoperative, it may be replaced by simply unplugging from said circuit breaker component and plugging in of a new filter component.

3,374,448
HIGH EFFICIENCY CONTIGUOUS COMB FILTER
Carl R. Hurtig, Greenbush, Mass., assignor to Damon Engineering, Inc., Needham Heights, Mass., a corporation of Delaware
Filed May 25, 1964, Ser. No. 369,772
8 Claims. (Cl. 333—72)



A comb filter employing a number of individual filters connected in parallel, the pass band of each of the filters being for contiguous portions of the frequency spectrum. The filters are singly terminated and are connected directly to the voltage source.

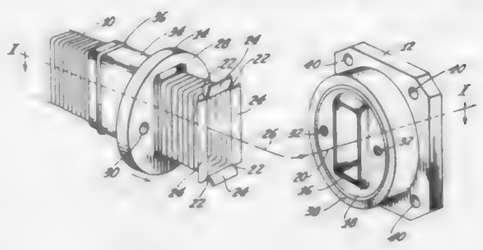
3,374,449
COAXIAL SWITCH
Robert E. Moore and Harold A. Brown, San Diego, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Mar. 21, 1966, Ser. No. 536,095
9 Claims. (Cl. 333—97)



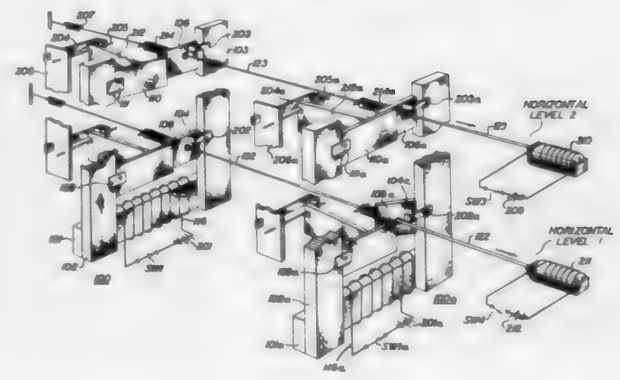
1. A switch comprising:
(a) two coaxial transmission lines having outer conductors joined in a continuous connection and having inner conductors terminated in spaced relationship,
(b) a connector means having an outer conductor slidably arranged on said joined outer conductors and a hollow inner conductor,
(c) said hollow inner conductor attached to said slidable outer conductor by a non-conducting means, and
(d) said hollow inner conductor slidable positioned on one of said inner conductors and adapted to contact said other inner conductor by actuating said connector means.

3,374,450
WAVEGUIDE FLANGE AND COUPLING ASSEMBLY
Robert F. Stewart, Convent Station, N.J., assignor to Litton Precision Products, Inc., Morris Plains, N.J., a corporation of Delaware
Filed Nov. 17, 1965, Ser. No. 509,682
8 Claims. (Cl. 333—98)

1. A waveguide assembly comprising, in combination, a section of rectangular waveguide; a flange member; and a collar member for securing said waveguide to said flange member, said flange member including a first substantially rectangular opening having predetermined dimensions relative to the internal dimensions of said waveguide and also including a shoulder member surrounding said first rectangular opening, said shoulder member having a male clamping surface which makes a predetermined acute angle with the axis of said first rectangular opening; said rectangular waveguide having its corners cut a predetermined distance at one end thereof and having its side walls folded back at said cut to said predetermined acute angle with respect to the axis of said rectangular waveguide; said collar member including a second substantially rectangular opening having predetermined dimensions relative to the external dimensions of said waveguide and also including a female clamping surface being at said predetermined acute angle with respect to the axis of said second rectangular opening; said flange member, rectangular waveguide and collar member being assembled such that their axes are aligned, said collar member is positioned around said rectangular waveguide and the folded portion of said side walls of said rectangular waveguide are positioned between said male and female clamping surfaces; and means securing said collar member to said flange member whereby the folded portion of said walls are clamped between said male and female clamping surfaces.



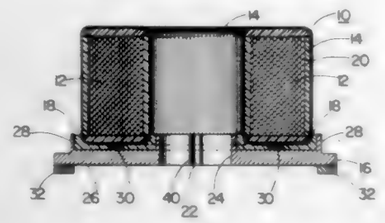
3,374,451
COORDINATE TYPE CROSSBAR SWITCH UTILIZING VARIABLE RELUCTANCE
John W. Barker, Jr., Blacklick, Ohio, assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Oct. 5, 1966, Ser. No. 584,476
12 Claims. (Cl. 335—112)



1. A coordinate switch system comprising, in combination, a plurality of crosspoints each including respective first and second armatures, first means responsive to a horizontal selector current for pivoting a selected group of said first armatures into a closed position, thereby reducing the magnetic reluctance in the airgaps at corresponding ones of said crosspoints, second means responsive to a vertical selector current for applying magnetic flux across a selected group of said crosspoints including one of said corresponding crosspoints, whereupon that

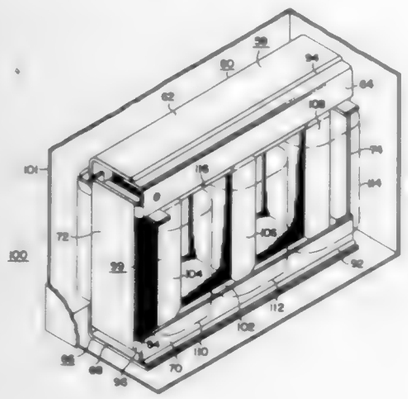
one of said second armatures corresponding to said last named crosspoint is pivoted to operate current carrying contacts associated therewith, provided that said horizontal selector current and said vertical selector current are applied to said system in coincidence.

3,374,452
TOROIDAL TRANSFORMER CONSTRUCTION AND METHOD OF CONSTRUCTING SAME
Winston R. Judd, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 386,838, Aug. 3, 1964. This application Sept. 26, 1966, Ser. No. 582,024
8 Claims. (Cl. 336—60)



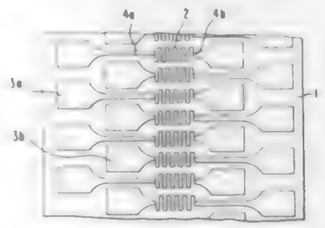
1. A toroidal transformer construction comprising a core and coil unit formed of a magnetic core member having a coil wound thereon and a cooling channel therethrough; a base member, said base member having an opening therein communicating with said cooling channel to provide a path for convective air currents that cool said transformer; and means comprising a cured resinous material for securing said core and coil unit to said base member, said means for securing providing a path for the conductive transfer of thermal energy from the core and coil unit to the base member.

3,374,453
ELECTRICAL INDUCTIVE APPARATUS
Alvin Y. Broverman and Garlington C. Wilburn, Sharpsville, and Quentin T. Jones, Sharon, Pa., and Donald A. Regar, Brookfield, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 27, 1966, Ser. No. 604,968
5 Claims. (Cl. 336—197)



A transformer of the core-form type, and methods for constructing same, having concentric high and low voltage coils disposed on the leg portions of a stacked type magnetic core assembly. The yoke portions of the magnetic core assembly are compressed uniformly across their longitudinal length by metallic end frame members which are in continuous fixed engagement with one another across the complete longitudinal length of the yoke portions. Metallic plate members connect adjacent ends of the end frame members to brace the transformer during short circuit conditions, and to allow the transformer to be lifted without stressing the magnetic core assembly.

3,374,454
MEASURING TAPE FOR STRAIN GAUGE
Gerhard Holland, Stuttgart-Riedenberg, and German Kienle, Stuttgart-Unterturkheim, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Oct. 28, 1966, Ser. No. 590,337
Claims priority, application Germany, Oct. 28, 1965, D 48,537
10 Claims. (Cl. 338—2)

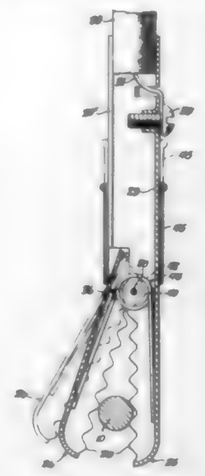


A compact strain gauge measuring tape is described which makes possible the placement of individual strain measuring resistive elements more closely adjacent to one another along the length of a backing tape without having to reduce the rather large connecting surfaces required for a completely satisfactory electrical connection to each of the individual strain sensive resistive elements. This closely spaced parallel arrangement of measuring resistance elements is the result of an arrangement of long and short connecting web portions between each resistive element and its lamellae-like, large surface contact soldering tabs formed on each end of the resistive elements. By this arrangement the individual strain sensing resistive elements can be arrayed parallel to each other along the longitudinal axis of a backing tape in a manner such that the shorter connecting web portions are located and nest between the longer web portions. The arrangement assures the greatest possible number of securely connected measuring elements arrayed within a unit length of the tape so as to allow for a maximum number of reliable measuring points over the surface of a work piece to which a section of the measuring tape is applied.

3,374,455
ELECTRICAL CONNECTOR
Dennis J. Sullivan, Chapel Hill Road, Allegany, N.Y. 14706, and John W. Bryan, Rte. 2, Olean, N.Y. 14760
Filed Oct. 21, 1965, Ser. No. 500,091
2 Claims. (Cl. 339—31)

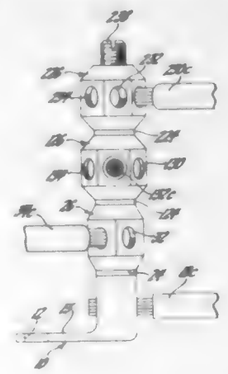
The test connector is adapted for both male and female electrical parts and has a tubular metal body adapted to be connected to an electrical test line and with one end extended along one side of its axis to provide an integral channel-shaped fixed jaw with its concavity facing this axis and its edges provided with teeth to engage a male electrical part. A movable channel-shaped jaw has its inner end pivoted to the base of the fixed jaw to swing on an axis perpendicular to the said first axis and has teeth mating with the teeth of the fixed jaw. The jaws, when closed, jointly are of cylindrical form to fit into the female part. The jaws are biased to their open position

and manually operable means are provided for moving them toward each other. These manually operable means



can be in the form of a sleeve slidable on the body portion over the exterior movable jaw or can be an extended finger piece at the base of the movable jaw.

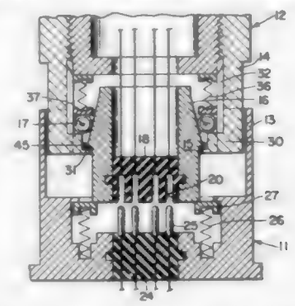
3,374,456
MULTIPLE TERMINAL CONNECTOR
Wronsford B. Evans, 1106 Belle View Blvd., Alexandria, Va. 22307
Filed Oct. 22, 1965, Ser. No. 502,257
3 Claims. (Cl. 339—32)



A multiple connector for a plurality of electrical wires and the like wherein a connector body has aligned upper and lower threaded bores and a plurality of openings transversely disposed to and intersecting the upper threaded bore, a set screw in the upper threaded bore engages a wire extending through one of such openings and retains it in the connector body; the set screw bash portion extending out of the upper threaded bore whereby the lower threaded bore of a second connector body may be stacked thereon.

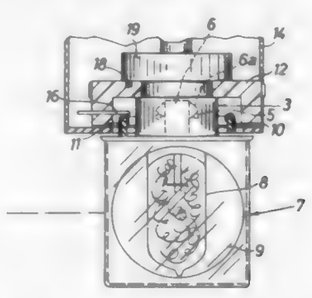
3,374,457
MISSILE SEPARATION CONNECTOR
Roger A. Herrick, Sunnyvale, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 26, 1966, Ser. No. 546,155
6 Claims. (Cl. 339—45)

1. A disconnect device for separating missile components in adjacent missile stages without imparting thrust or causing imbalance comprising:
aligning means partially disposed in each of two adjacent stages of a composite missile assembly;
the portion of the aligning means in the forward stage including surfaces tapering inwardly from an intermediate portion of the aligning means into said forward stage;
axially movable means releasably restraining said aligning means in position in relation to the aft stage when said components are connected and during initial movement apart of said adjacent stages;



means connected to said forward stage for axially displacing said movable means in response to further movement apart of the adjacent stages; and
means in said aft stage urging said aligning means into said forward stage upon said further movement apart of said adjacent stages
whereby said aligning means is urged out of the one stage at a rate controlled by the rate of separation of the stages thereby eliminating thrust during separation of the stages.

3,374,458
FLASH UNIT
Helmut Dürr, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Nov. 23, 1966, Ser. No. 596,553
Claims priority, application Germany, Dec. 2, 1965, A 24,810
18 Claims. (Cl. 339—147)

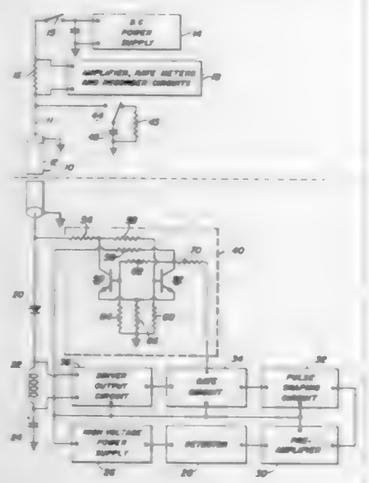


1. A flash unit for use with multiple flash bulb holders of the type having a plurality of electric contact means and a flash bulb electrically connected with each such contact means, comprising a support; a coupling member movably mounted in said support and having means for engaging and holding a multiple flash bulb holder so that the holder shares movements of said coupling member; and electric terminal means mounted on and movable with reference to said support into and from current-conducting engagement with selected contact means of a holder which is held by said coupling member.

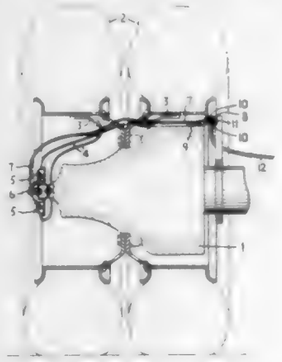
3,374,459
LOGGING CHANNEL DISABLING CIRCUIT
William R. Rabson, Homer M. Wilson, and Leroy C. De la Torre, Houston, Tex., assignors, by mesne assignments, to PGAC Development Company, Houston, Tex., a corporation of Delaware
Filed Apr. 16, 1965, Ser. No. 448,802
7 Claims. (Cl. 340—18)

1. In a well logging system, the combination of, a subsurface unit, a cable for moving said unit through a bore hole, a unidirectional power source at the earth's surface

and connected to the upper end of said cable, a measuring device in said unit and arranged to provide an electrical signal, proportional to a measured variable, means for connecting said electrical signal to the lower end of said cable for transmission to the earth's surface, means in said unit utilizing power transmitted over said cable from said source to energize said measuring device, means at the earth's surface for developing a control pulse, means for applying said control pulse to the upper end of said cable for transmission to said unit, means in said unit for receiving said control pulse and developing a blocking signal in response thereto, means responsive to said blocking signal for preventing said electrical signal from being impressed upon the lower end of said cable, means at the earth's surface for disconnecting said source from said cable, and means in said unit and responsive to said disconnection of said source by said last named means for disabling said blocking signal developing means, thereby to restore connection of said electrical signal to the lower end of said cable when said source is again connected to said cable.

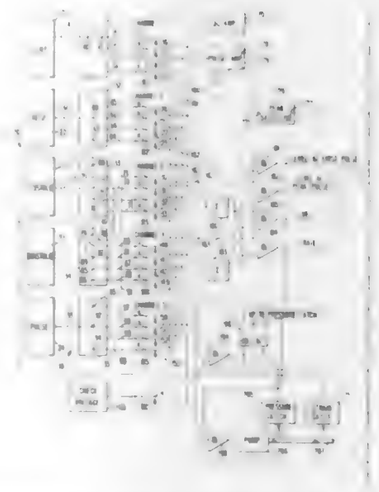


3,374,460
SYSTEM FOR SIGNALING CONDITIONS ON RELATIVELY MOVING MEMBERS OF A VEHICLE
Jean-Marie Massoubre, Clermont-Ferrand, France, assignor to Compagnie Generale des Establissments Michelin, raison sociale Michelin & Cie., Clermont-Ferrand, Puy-de-Dome, France
Filed Apr. 5, 1965, Ser. No. 445,402
14 Claims. (Cl. 340—58)



A system for signaling a condition on a first member rotatable with respect to a second member, including a pair of spaced apart, magnetically coupled stationary coils on the second member and a coil movable with the first member for passage between the pair of coils during each revolution of the rotating member. One of the coils of the pair is excited with an oscillator which produces a periodic electrical signal when the pair of coils is magnetically coupled. The oscillations of the signal are interrupted when the moving coil is short-circuited by a detector device responsive to the condition and passes between the coil pair to alter the magnetic coupling.

3,374,461
PHYSIOLOGICAL MONITORING SYSTEM
Ferd R. Anderholm, Donald J. Farris, and Lester J. Fiegel, Jr., Rochester, Minn., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 25, 1964, Ser. No. 347,212
20 Claims. (Cl. 340—147)



A data acquisition system is provided where the data inputs can be signals representing rates, levels, levels occurring at a first pulse, or levels occurring at a peak pulse. Data input modifiers identify the type of inputs to the system. The identification signals are used to develop control signals for gating the input data to proper data conversion and accumulating devices.

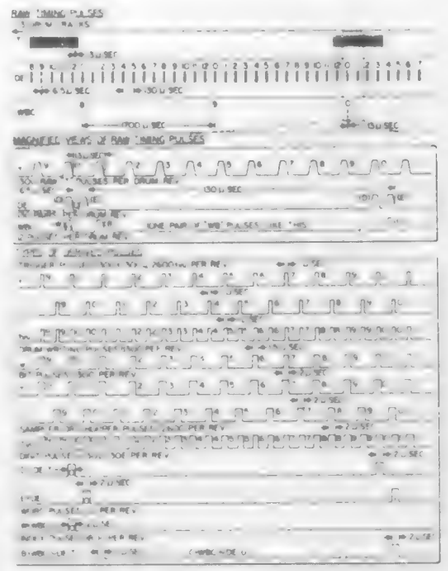
ERRATUM

For Class 340—172.5 see:
Patent No. 3,374,486

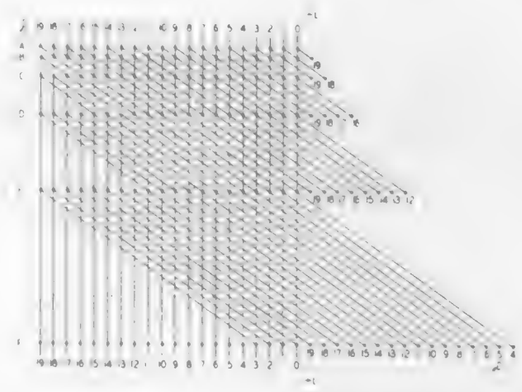
3,374,462
TIMING CIRCUITRY IN A DRUM STORAGE COMPUTER SYSTEM
Donald T. Best, Plymouth Meeting, Pa., and John R. Van Andel, Dearborn, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Original application Aug. 15, 1956, Ser. No. 604,153, now Patent No. 3,144,549, dated Aug. 11, 1964. Divided and this application July 24, 1963, Ser. No. 297,348
Claims priority, application Great Britain, Mar. 2, 1956, 6,693/56
18 Claims. (Cl. 340—172.5)

2. In an electronic digital computer system, a source of cyclically presented synchronizing signals having a plurality of channels, at least one means in the source for presenting at a single signal channel a plurality of intermixed sets of synchronizing signals for control of different computer circuits, at least one other means in the signal source for presenting a further set of synchronizing signals at another channel for use in the computer circuits and having a synchronously timed relationship with one of the intermixed sets of signals, a circuit coupled to said single channel for amplifying and shaping the

intermixed sets of signals, a circuit coupled to the other means for amplifying and shaping the further set of synchronizing signals, and coincidence gating means coupled to said circuits for comparing the two sets of amplified signals to produce output signals representative of of only said one of the intermixed sets of synchronizing signals, whereby said single channel of the signal source may be used for a plurality of sets of control signals.

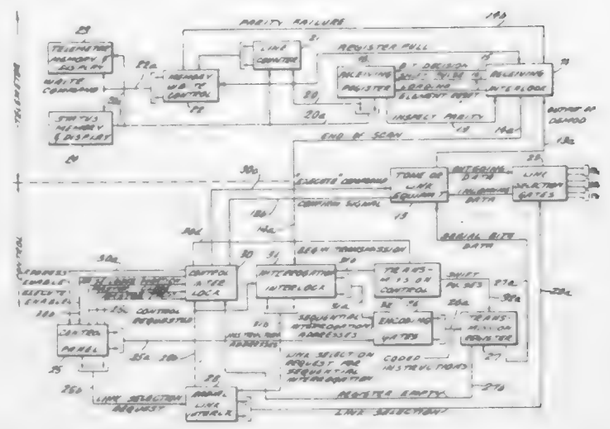


3,374,463
SHIFT AND ROTATE CIRCUIT FOR A DATA PROCESSOR
David Muir III, Minerva Park, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 23, 1964, Ser. No. 420,566
23 Claims. (Cl. 340—172.5)



A shift and rotate arrangement including a group of serially connected unidirectionally oriented rotate circuits connected between input and output terminals and a control circuit which simultaneously operates all the rotate circuits. Rotate and shift operations of any specified magnitude in either direction are performed by additive rotate operations during a single transmission of a data word from the input terminals through the series of rotate circuits to the output terminals by selective control of individual gating elements within the respective rotate circuits.

3,374,464
SUPERVISORY CONTROL SYSTEM
Abraham Brothman, Dumont, Lee Horowitz, Cedar Grove, Michael Gomery, Saddle River, and Conrad Yanis, Glen Rock, N.J., assignors, by mesne assignments, to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware
Filed Jan. 8, 1965, Ser. No. 424,348
23 Claims. (Cl. 340—172.5)



This invention teaches a supervisory control system for gathering a variety of different types of information at a central data gathering point from a plurality of remote points within a system. The system is comprised of a central data gathering point and at least one remote location. Each remote location has concentrated thereat a plurality of data points for which it is desired to transmit telemetry, On, Off, Open or Closed and other varieties of information to the central data gathering point.

Quiescent operation of the system is such that the central data gathering point selects a particular remote location and transmits a transmit request signal. The remote location, upon receipt and recognition of the transmit request signal, first transmits an acknowledge signal confirming the receipt and/or authentication of a transmit request signal, which is followed by the information desired as to the status of each data point in the data bank for that remote location. After all data points at that particular remote location have been scanned and their status reported to the central data gathering point, an off-line signal is transmitted indicating to the central processing center that all points have been scanned, enabling the central location to scan data points of the next remote location. Scanning in this nature continues until all remote locations have been scanned, at which time the cycle begins anew.

If it is desired to reach a particular data point at any given remote location, control of the system may be seized by manually operable means wherein the particular remote location and the particular point at the selected remote location is selected at the central location. Operation of these controls causes the quiescent state to be interrupted upon completion of the scan at the remote location transmitting at that time and the system is then placed under control of the manually operable controls which have been enabled.

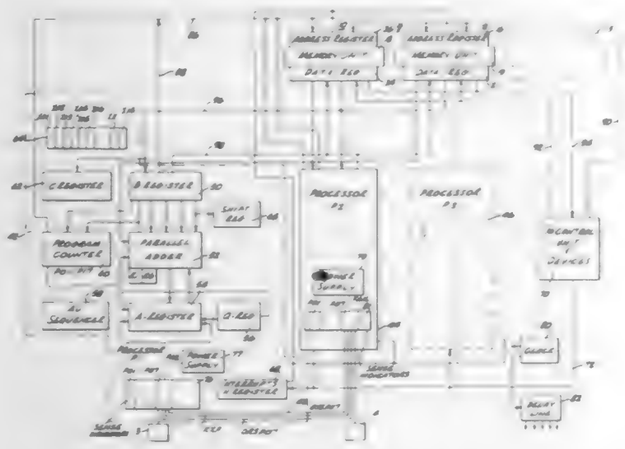
In order to reach a particular data point contained within a bank of points at the selected remote location, the central location transmits a binary word to the selected remote location. This binary word is fed into a shift register at the selected remote location. As soon as the word is loaded into this shift register, the shift register is divided into two parts each of which is then coupled to form a closed loop. Operation at the selected remote location to determine the data point whose status is desired begins by shifting the loaded data word received from the central location through the two shift registers

one bit position at a time. Gating means coupled to selected outputs of both the first and second shift registers are employed to sense the order of the data bits in the first and second shift registers. Recirculation of the code word within the two registers continues until the gating means acknowledges the fact that valid code word identifying one particular data point (i.e., the selected data point) is appropriately arranged in the first and second registers. At this point the gating means terminates the circulation of the code word in the registers.

Counting means are provided for counting the total number of shift operations performed. The total count is employed for the purpose of addressing the particular data point to be selected. The code word transmitted by the central location to the remote location sets up only one valid code word for the data point selected regardless of how many shifts may be performed and no other valid code words will be set up as a result of receipt and circulation of this code word.

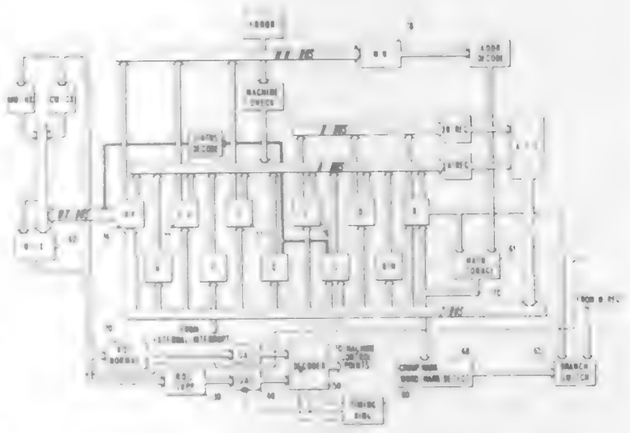
In the case where the status of the addressed data point is desired, as soon as the validity of the code word is established, this information will be transmitted to the central location. The transmitted code word may contain further information identified by the remote location requesting control over the particular data point addressed. For example, if the data point contains status as to the liquid level in a tank and upon receipt of that status, it is desired to raise or lower the level, the code word will further identify the fact that control over the data point is desired and manual control may be exerted at the central location to raise or lower the level to a desired value. Control may be relinquished by a suitable signal transmitted from the central location to the remote location. As soon as the status and/or control over the selected data point is completed the system returns to its quiescent state of operation.

3,374,465
MULTIPROCESSOR SYSTEM HAVING FLOATING EXECUTIVE CONTROL
Richard C. Richmond and Jack J. Pariser, Orange, and Thomas A. Connolly, Hacienda Heights, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 19, 1965, Ser. No. 441,189
20 Claims. (Cl. 340—172.5)



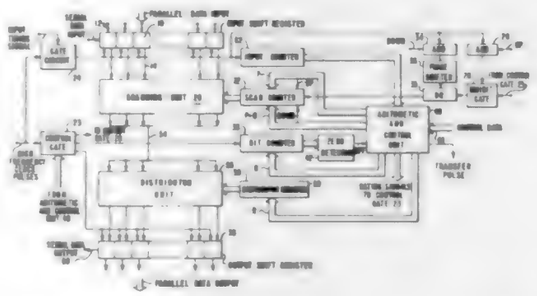
A multiprocessor computer system comprising an executive control logic circuit and an executive function logic circuit in each processor with the executive control logic circuits functioning as program indicators. Any of the executive control logic circuits may be set as a result of the processor's set instruction or of any processor's reset instruction. The executive function logic circuit is maintained in a set state during an executive routine or an interrupt routine. The system provides an executive "or" type of control circuit so that the computer's operation may be continued in event of a failure of a portion of the processors and to ensure that one and only one processor has executive control during any given time period.

3,374,466
DATA PROCESSING SYSTEM
William P. Hanf, Endicott, and Karl K. Womack, Endwell, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 10, 1965, Ser. No. 454,325
8 Claims. (Cl. 340—172.5)



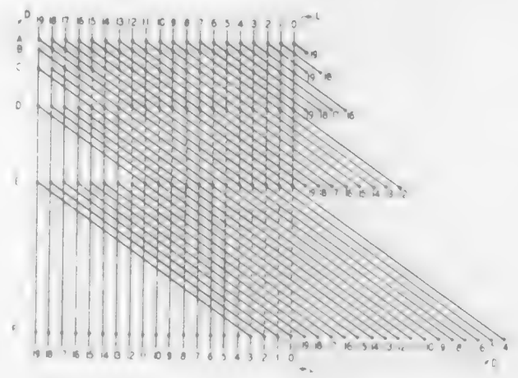
The present invention encompasses a data processing system universally designed so as to operate in response to first programs in a natural mode of operation and to second programs in a substituted mode of operation. Control word groups are stored in a first storage means to cause the data processing system to emulate an entirely different second processing system. An unnatural program designed for said second data processing system is executed by said universally designed data processing system by compatibility in character manipulation, hardware availability, address translation and operation code recognition.

3,374,467
DIGITAL DATA PROCESSOR
James N. Cast, Santa Ana, William H. Horning, Garden Grove, and Frank Twiss, Huntington Beach, Calif., assignors, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed May 27, 1965, Ser. No. 459,360
11 Claims. (Cl. 340—172.5)



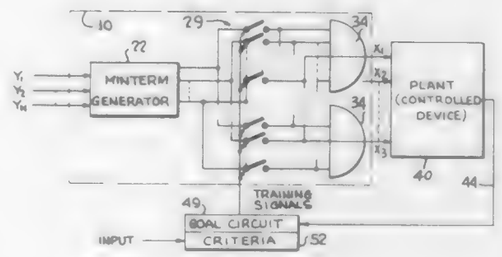
A processor for data words having a predetermined bit sequence is disclosed. Data is received in a storage device at the processor. A control signal generator emits a variable control signal which continually identifies the location of the bits making up data words delivered to the storage device. The bit sequence of the data words are extracted in accordance with the variable control signal in any predetermined sequence and at any predetermined output rate; and thus, the input and output bit sequences need not be the same.

3,374,468
SHIFT AND ROTATE CIRCUIT FOR A DATA PROCESSOR
David Muir III, Minerva Park, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 420,566, Dec. 23, 1964. This application Aug. 10, 1965, Ser. No. 478,536
16 Claims. (Cl. 340—172.5)



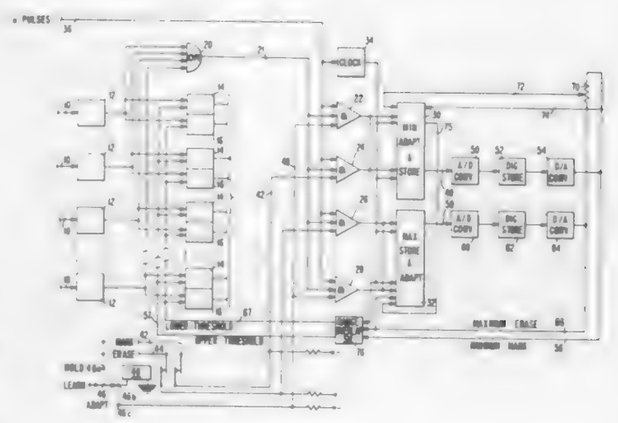
An arrangement which performs shift and rotate operations in either direction on data stored in a register. A plurality of multi-element rotate circuits are connected in parallel between the input and output terminals of the register. Each rotate circuit is oriented to rotate the bits contained in the register stages by a predetermined different number of stages in the same one direction. Specified shift and rotate operations are performed in accordance with specified magnitudes and directions by controlling selected elements of the rotate circuits during additive sequential energization thereof to inhibit transmission of bits through the selected rotate elements.

3,374,469
MULTI-OUTPUT STATISTICAL SWITCH
Edward M. Connelly, Springfield, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,608
16 Claims. (Cl. 340—172.5)



A statistical switch for variably controlling the probability that a completed circuit will be provided between a single input channel and any one of a plurality of output channels, in which input signal is fed to the single input channel for application in parallel to a plurality of gating circuits each connected to a distinct and different one of the output channels. Each of the gating circuits is energized in sequence to pass input signal therethrough, and the entire energizing sequence repeated during a substantially constant period of time. The probability of obtaining an output signal at a particular output channel at any given instant during this period is increased by increasing the time interval over which the gating circuit connected to that channel is energized, as compared with the time intervals over which the other gates are energized, such that the probability of obtaining an output signal from the switch remains at unity although the likelihood that it will appear at a specific output channel may be controllably varied.

3,374,470
ADAPTIVE THRESHOLD CIRCUITS
William S. Rohland, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 19, 1965, Ser. No. 497,660
15 Claims. (Cl. 340—172.5)

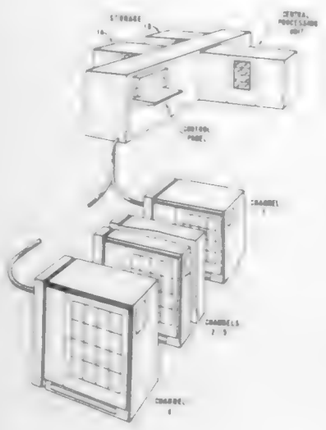


1. In an adaptive threshold circuit,
a multi-channel read head,
upper and lower threshold circuits connected to each channel,
circuit means common to all of said read head channels for producing a read signal,
additional circuit means connected to said circuit means for establishing minimum mark and maximum erasure signal levels,
and means connecting said additional circuit means to control the upper and lower threshold circuits.

3,374,471
INSTRUCTION FETCHING APPARATUS
Gordon L. Smith, 9F Dutchess Apts. Van Wagner Road, Poughkeepsie, N.Y. 12603
Continuation-in-part of application Ser. No. 455,323, Apr. 5, 1965. This application Jan. 13, 1967, Ser. No. 609,249
15 Claims. (Cl. 340—172.5)

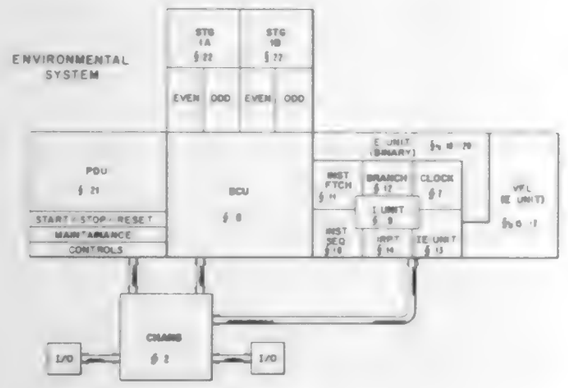
The specification discloses an illustrative embodiment for the invention comprising a large scale data processing system of the type which is composed of a plurality of quasi-independent units. The environmental data processing system includes a central processing unit or portion, which is herein referred to as a CPU, a plurality of storage units, a plurality of input/output control devices referred to herein as channels, as well as control and maintenance facilities which are found in a power distribution unit, herein referred to as a PDU. The CPU of the environmental system includes a control or instruction unit hereinafter referred to as an I unit, and an arithmetic and logic or execution unit, hereinafter referred to as an E unit. The I unit includes controls for instruction fetch-

ing, branching, interruption handling, communication with the input/output channels, and other related functions.



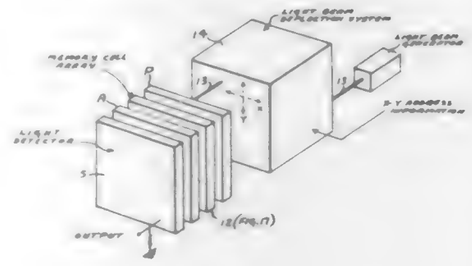
The E unit of the environmental system can perform algebraic and logical operations, moving, shifting, and other functions.

3,374,471
STORAGE CANCELLATION AND PANEL DATA KEY FETCHING IN A DATA PROCESSING SYSTEM
William P. Wissick, Sunnyvale, Calif., Leo J. Hasbrouck, Poughkeepsie, N.Y., Charles Richard Holleran, Saratoga, Calif., and Gordon L. Smith, Poughkeepsie, N.Y., assignors to International Business Machine Corporation, Armonk, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 445,311, Apr. 5, 1965. This application Jan. 13, 1967, Ser. No. 609,252
11 Claims. (Cl. 340—172.5)



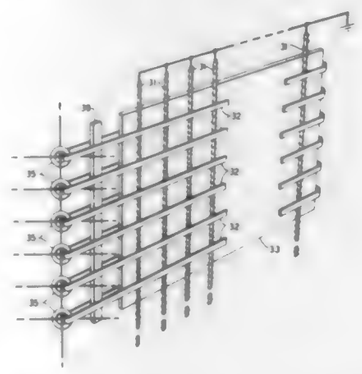
The specification discloses an illustrative embodiment for the invention comprising a large scale data processing system of the type which is composed of a plurality of quasi-independent units. The environmental data processing system includes a central processing unit or portion, which is herein referred to as a CPU, a plurality of storage units, a plurality of input/output control devices referred to herein as channels, as well as control and maintenance facilities which are found in a power distribution unit, herein referred to as a PDU. The CPU of the environmental system includes a control or instruction unit hereinafter referred to as an I unit, and an arithmetic and logic or execution unit, hereinafter referred to as an E unit. The I unit includes controls for instruction fetching, branching, interruption handling, communication with the input/output channels, and other related functions. The E unit of the environmental system can perform algebraic and logical operations, moving, shifting, and other functions.

3,374,473
BISTABLE OPTICALLY READ FERROELECTRIC MEMORY DEVICE
Stewart E. Cummins, 405 Funston Ave., New Carlisle, Ohio 45344
Filed Apr. 12, 1967, Ser. No. 630,469
12 Claims. (Cl. 340—173.2)



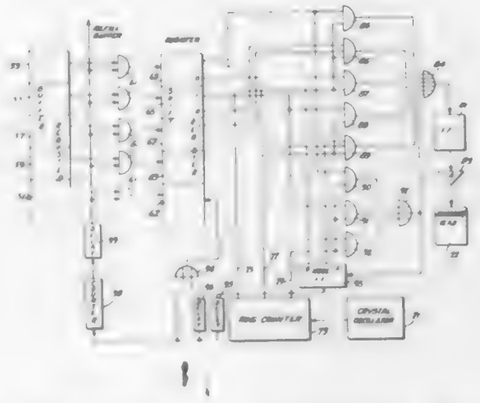
A bistable optically read memory device comprising a crystal of ferroelectric bismuth titanate ($Bi_4Ti_3O_{12}$) between crossed polarizers. The spontaneous polarization vector of this monoclinic crystal can be switched between two stable directions about 10° apart, with an accompanying switching of the optical indicatrix between two stable angular positions about the crystallographic *b* axis, by the momentary application of an electric field normal to the *a-b* plane. Nondestructive optical read-out is accomplished between crossed polarizers with the crystal oriented for extinction in one of the two stable positions of the indicatrix. Applications are shown to multicell memories with optical access and sensing for read-out and with either coincident pulse or optical access for write-in, to display panels, and to logic circuits.

3,374,474
NOISE SUPPRESSION CIRCUIT FOR MAGNETIC CORE MATRIX
Jules R. Cunrath, Salisbury Township, Lehigh County, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 24, 1963, Ser. No. 310,999
4 Claims. (Cl. 340—174)



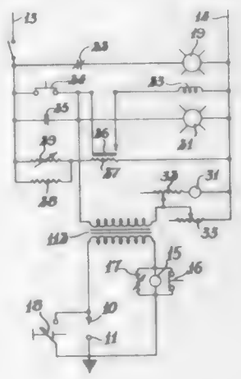
A biased core access matrix for a magnetic memory is provided with nonlinear inductive devices coupled to matrix output circuits to memory word addresses. Each device saturates at a drive signal level greater than matrix shuttle noise level but less than an access information signal level from the matrix so that device high impedance to shuttle noises suppresses such noises. Suppressor devices are shown as individual cores for each output circuit and as a flat strip common to a group of output circuits. A memory employing magnetic wire memory elements is illustrated.

3,374,475
HIGH DENSITY RECORDING SYSTEM
Andrew Gabor, Huntington, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed May 24, 1965, Ser. No. 458,110
15 Claims. (Cl. 340—174.1)



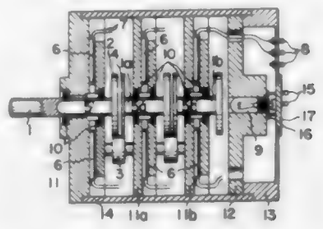
This specification discloses a high density recording and reproducing system in which binary information is divided into pairs of bits and different flux transition patterns are recorded to represent each pair of digits. Each pattern is made of three flux transition positions and the patterns are selected so that at least one transition is present in every adjacent pair of transition positions. The pattern selected to represent one particular pair of digits is made dependent upon an adjacent pattern recorded to represent another pair of digits.

3,374,476
METHOD OF AND APPARATUS FOR DETECTING MOISTURE IN NON-CONDUCTING LIQUIDS
Norbert K. Koebel, Maywood, and Kenneth A. Freutel, Franklin Park, Ill., assignors to Basic Products Corporation, a corporation of Wisconsin
Filed Jan. 18, 1965, Ser. No. 426,173
12 Claims. (Cl. 340—235)



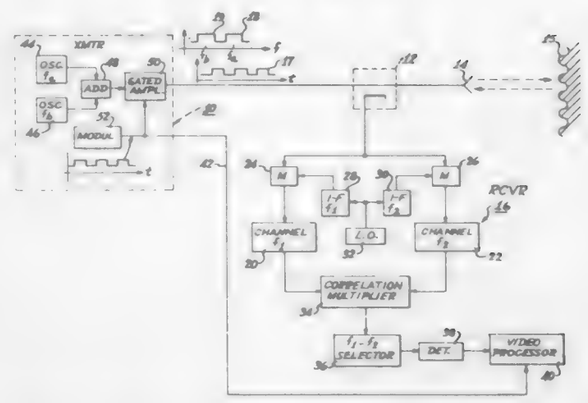
A detector for moisture in oil having spaced electrodes immersed in the oil and a time delay device started by current discharge between the electrodes and which actuates a signal when it times out. The electrode current controls a radiant energy emitter which when energized, initiates operation of the time delay device.

3,374,477
SHAFT POSITION DIGITIZER
Masakazu Ejiri, Hachioji-shi, and Akira Kamoi, Musashino-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed July 7, 1964, Ser. No. 380,863
Claims priority, application Japan, July 10, 1963, 38/35,358
8 Claims. (Cl. 340—347)



A shaft position digitizer wherein a plurality of hollow shafts is disposed along the same center line; each of these shafts is hollow and connected continuously or intermittently by reduction gears; light from a single stationary source is conducted through the interior of the shaft which is in correct position; and a number of photosensitive elements is disposed around the shaft at given distances; a rotational angle corresponding to a mechanical displacement to be digitized is imparted to one shaft. The device is suited for miniaturization.

3,374,478
RADAR SIGNALING SYSTEM WITH REDUCED CLUTTER EFFECT
William Blau, Haddonfield, N.J., assignor of one-half to Spectronics, Inc., a corporation of New Jersey
Filed Dec. 7, 1966, Ser. No. 599,754
17 Claims. (Cl. 343—5)

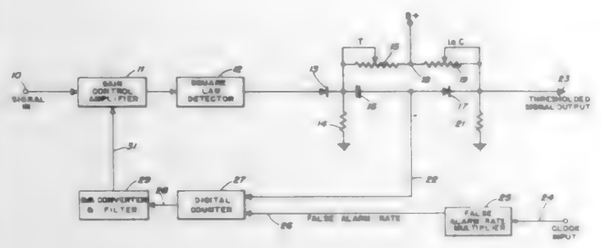


A radar system is provided having improved characteristics with respect to clutter effects. The radar transmitter supplies spaced frequency bands of substantially identical signals. The radar receiver spectrally correlates the returned signals to provide auto-correlation of true target signals and substantial cross-correlation of clutter signals. By means of spaced sub-bands a wide transmission bandwidth may be provided as well as a narrow correlated band that is suitable for processing.

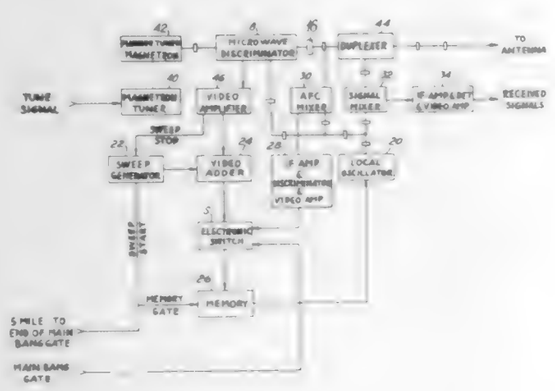
3,374,479
AUTOMATIC FALSE ALARM CONTROL
Thomas M. Moore, Severna Park, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 25, 1966, Ser. No. 538,484
6 Claims. (Cl. 343—7)

There is disclosed a system for preventing false alarm overloading of radar systems which are equipped with

automatic detection circuitry for processing false alarm signals, utilizing an arrangement whereby a double threshold is used in order to more closely approximate the probability of false alarms.



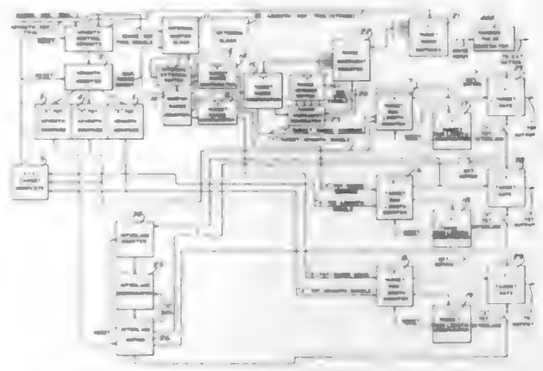
3,374,480
RECEIVER TUNING FOR RADAR AND THE LIKE
Charles W. Russell, Tonawanda, and Theodore Lerner, Buffalo, N.Y., assignors, by mesne assignments, to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware
Filed Aug. 20, 1958, Ser. No. 754,699
5 Claims. (Cl. 343—17.2)



1. A system of the character described comprising, a pulse generator of the cavity resonator type, a pulse echo receiver having a voltage tunable local oscillator, a first automatic frequency control circuit for said oscillator comprising the cavity of said generator and means including a microwave discriminator translating the resonant frequency of said cavity into a tuning control voltage for said local oscillator, a second automatic frequency control circuit for said local oscillator comprising means including a mixer receiving a sample of the transmitted pulse and the output of said local oscillator for developing a tuning control voltage for said local oscillator, and switch means for switching said local oscillator from said first automatic frequency control circuit to said second automatic frequency control circuit when a pulse is transmitted.

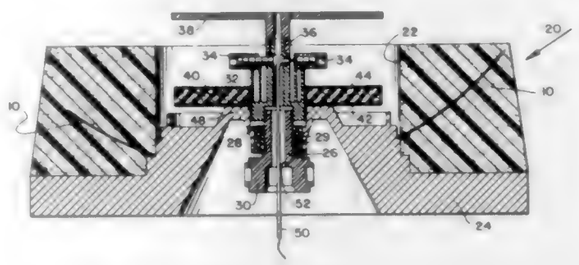
3,374,481
DIGITAL TARGET GENERATOR TEST SET
Albert A. Lupinetti, Northfield, N.J., assignor to the United States of America as represented by the Secretary of the Army and/or the Administrator of the Federal Aviation Agency
Filed Nov. 9, 1966, Ser. No. 593,608
10 Claims. (Cl. 343—17.7)

This invention relates to a device for the generation of signals which simulate radar returns initiated by radar or beacon interrogations. By simulating targets, process-



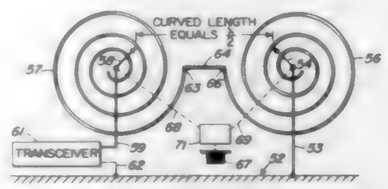
ing equipment designed to handle actual reply information, may be tested under precise calculated conditions.

3,374,482
RADAR DISH IN PLASTIC CASEMENT
Leo L. Kielman, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 30, 1958, Ser. No. 764,456
5 Claims. (Cl. 343—761)



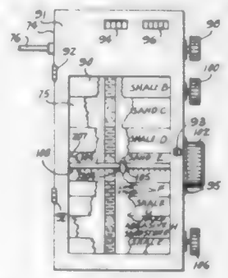
1. In a gyro mounted radar antenna, a gimbal-mounted support, a gyro rotor mounted on said support, said rotor operable to be rotated at high-speeds, an antenna-dish assembly having a large central aperture mounted on said gyro rotor, said antenna-dish assembly comprising a metallized spherical reflective surface imbedded at a cant within a concentric plastic casement, and operable to eliminate air pumping action due to cant of the spherical reflective surface and reduce mass unbalance, said antenna-dish assembly and rotor operable to rotate together about the gyro rotor spin axis, said gimbal-mounted support supporting a dipole type antenna and a flat radar energy reflector concentric with the aperture in said antenna-dish assembly.

3,374,483
TUNABLE ELECTRICALLY SMALL ANTENNA
Richard C. Fenwick, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed May 6, 1965, Ser. No. 453,801
6 Claims. (Cl. 343—895)



A space saving implementation of an electrically small antenna of the type comprising a conductor arranged parallel to a ground plane with one end of the conductor shorted to the ground plane through a vertical conductor and with a feed point connected between a selected point at or near the other end of the conductor and the ground point. The half wavelength conductor is formed into a spiral arrangement permitting a space saving arrangement with which a novel slidable feed point contact may be incorporated for tuning purposes.

3,374,484
APPARATUS FOR INDICATING AND RECORDING BOREHOLE DRILLING
Zbigniew S. Wyszynski, 501 Earnest St., New Iberia, La. 70560
Filed Oct. 26, 1964, Ser. No. 406,262
4 Claims. (Cl. 346—14)



1. An indicating and programming apparatus for operation of a drill rig for boreholed drilling comprising means for advancing a programmed log tape means at a speed relative to the travel of a drilling bit in a borehole; clock means, shiftable apparatus having a stylus and indicator pointer adapted to be driven by said clock means to contact and uniformly travel across and along the log tape registering the units of time consumed by selective drilling operations for a borehole on an indicating scale overlying said log tape means, indicator counter means driven by the log tape means and adapted to record the number of feet of earth strata drilled in a given period of time; and coupling means operatively connecting the counter means to said means for advancing said log tape with an instrument line operatively connected to a swivel of a drill string.

3,374,485
CALIBRATION APPARATUS FOR PHYSIOLOGICAL AND BIOLOGICAL MEASURING AND RECORDING DEVICES
Alfred Gemmer, Berlin-Frohnau, Germany, assignor to Fritz Hellige & Co. G.m.b.H., Freiburg im Breisgau, Germany
Filed Nov. 4, 1966, Ser. No. 592,037
Claims priority, application Germany, Nov. 5, 1965, H 57,599
10 Claims. (Cl. 346—23)

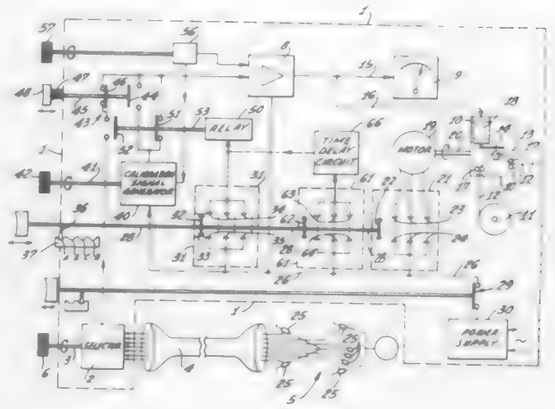
1. A system for monitoring and recording electrical signals comprising:

a selector receiving a first plurality of electrical signals for producing an output signal corresponding to preselected ones of said electrical signals;

a monitoring instrument for indicating the value of applied signals, said monitoring instrument including a recording medium and a drive mechanism for moving said recording medium at a second plurality of distinct speeds;

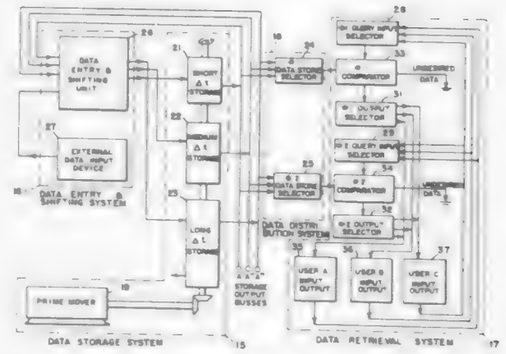
a signal generator for producing a calibration signal distinguishable from said output signal of said selector;

control means for energizing said monitoring instrument, said signal generator, and said drive mechanism and for changing the speed at which said drive mechanism moves said recording medium; and



shifting means having input terminals respectively coupled to said control means and to the output terminals of said selector and said signal generator for normally applying said output signal of said selector to said monitoring instrument and, in response to the energization of said drive mechanism or a change in the operating speed thereof, automatically interrupting the application of said output signal to said monitoring instrument and applying said calibration signal to said monitoring instrument for a predetermined interval of time.

3,374,486
INFORMATION RETRIEVAL SYSTEM
Vance R. Wanner, 1921 Tenley Drive, Collingwood, Alexandria, Va. 22308
Filed Jan. 15, 1965, Ser. No. 425,975
2 Claims. (Cl. 340—172.5)

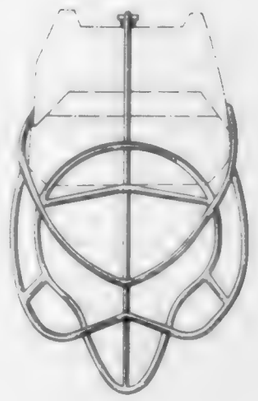


An information retrieval system wherein data is stored by both broad category and desired retrieval time. Stored data is continually read out and simultaneously made available to many users. Users identify and receive desired data by category and characteristic, combination of characteristics or permutations of characteristics.

DESIGNS

MARCH 19, 1968

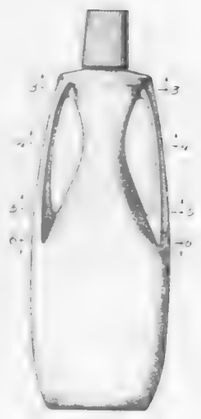
210,510
FACE GUARD FOR A HELMET
Dennis L. Burns, 4512 6th Ave. NW., Seattle, Wash. 98107
Filed Mar. 9, 1966, Ser. No. 1,365
Term of patent 14 years
(Cl. D2—213)



210,511
BOOT
William J. Dorsey, Newark, N.J., assignor to Kaysam Corporation of America, Paterson, N.J., a corporation of New Jersey
Filed Nov. 16, 1966, Ser. No. 4,700
Term of patent 14 years
(Cl. D2—272)

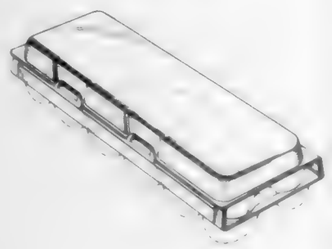
210,512
NECKTIE KNOT SUPPORT
Harry Kanter, 535 E. 86th St., New York, N.Y. 10028, and Robert Kallman, 612 Forest Hills Drive, Wilmington, N.C. 28401
Filed Jan. 6, 1967, Ser. No. 5,325
Term of patent 14 years
(Cl. D2—401)

210,513
JUG
Clayton A. Laughlin, Minneapolis, Minn., assignor to Minnesota Plastics Corporation, St. Paul, Minn., a corporation of Minnesota
Filed Oct. 10, 1966, Ser. No. 4,218
Term of patent 14 years
(Cl. D9—41)



210,514
BOTTLE
Herbert Brammer, London, England, assignor to Charles Mackinlay & Company Limited, Edinburgh, Scotland
Filed Apr. 26, 1966, Ser. No. 2,038
Claims priority, application Great Britain Dec. 22, 1965
Term of patent 14 years
(Cl. D9—72)

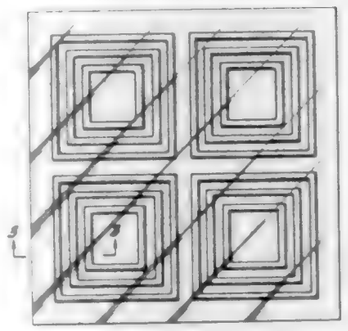
210,515
EGG CARTON
Richard T. Walter, Norristown, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Continuation-in-part of design application Ser. No. 903, Feb. 3, 1966. This application July 25, 1967, Ser. No. 8,266
Term of patent 14 years
(Cl. D9—190)



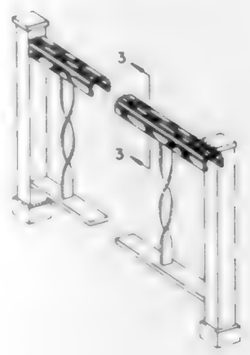
210,516
DISPENSER CAP FOR CONTAINERS
Carmen T. Mascia, Westchester, and Harry A. Peyser, Olympia Fields, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 16, 1967, Ser. No. 5,417
Term of patent 14 years
(Cl. D9—276)

210,517
HOLDER FOR A SQUEEZE TUBE
Paul Baratte, 18 Rue Volney, Paris, France
Filed Mar. 24, 1966, Ser. No. 1,616
Claims priority, application France Sept. 24, 1965
Term of patent 14 years
(Cl. D9—294)

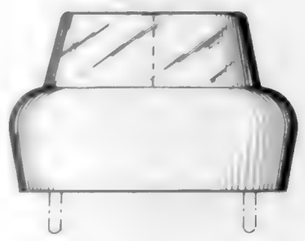
210,518
THREE-DIMENSIONAL PLASTIC PANEL
Gerald A. Woodman, 2216 Daxbury Circle, Los Angeles, Calif. 90034
Filed Aug. 22, 1966, Ser. No. 3,556
Term of patent 14 years
(Cl. D13—1)



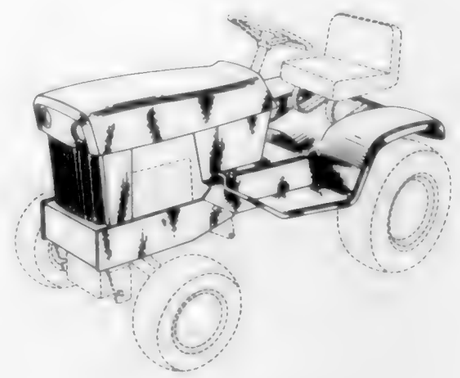
210,519
RAILING
Edward J. Kusel, 2343 Ridgewood Road, and Robert S. Mankin, 1954 Stockbridge Road, both of Akron, Ohio 44319
Continuation of design applications Ser. No. 849 and Ser. No. 858, Feb. 1, 1966. This application Feb. 13, 1967, Ser. No. 8,195
Term of patent 14 years
(Cl. D13—7)



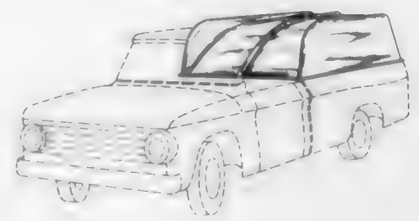
210,520
AUTOMOBILE
Robert R. Aronson, Ferndale, Mich., assignor to Electric Fuel Propulsion, Incorporated, Ferndale, Mich., a corporation of Delaware
Filed Mar. 3, 1967, Ser. No. 6,048
Term of patent 14 years
(Cl. D14—3)



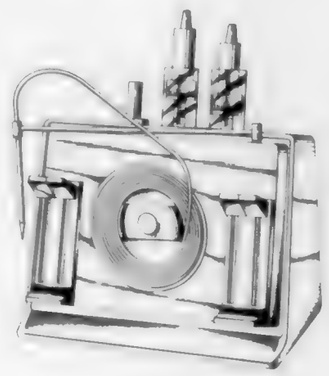
210,521
TRACTOR
Henry Dreyfuss, South Pasadena, and James Mervyn Conner, Glendale, Calif., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Sept. 1, 1967, Ser. No. 8,469
Term of patent 14 years
(Cl. D14—3)



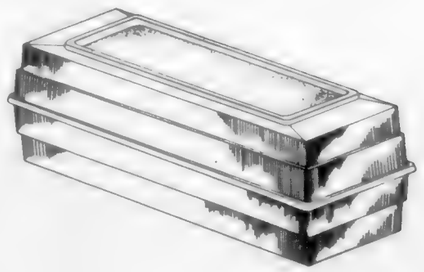
210,522
COMBINATION BOAT AND CANOPY FOR THE BED OF A PICK-UP VEHICLE AND THE LIKE
Elmer A. Ward, 3029 Aspen Drive, Casper, Wyo. 82601
Filed July 5, 1966, Ser. No. 2,913
Term of patent 14 years
(Cl. D14—27)



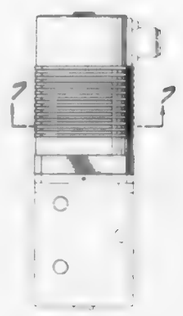
210,523
AUTOMATIC PIPETING UNIT
Leonard N. Albrecht, Mill Valley, Calif., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
Continuation-in-part of design application Ser. No. 2,952, July 6, 1966. This application Apr. 14, 1967, Ser. No. 7,137
Term of patent 14 years
(Cl. D16—2)



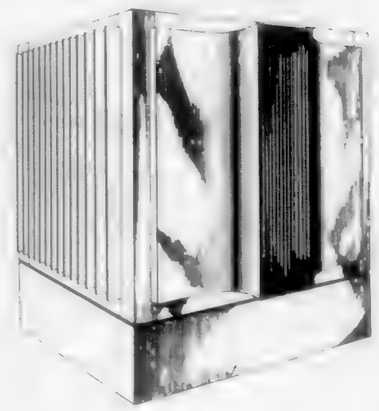
210,524
BURIAL VAULT
Guy Smith, 217 Patricia Drive, Forest Park, Ga. 30050
Filed May 4, 1966, Ser. No. 2,154
Term of patent 14 years
(Cl. D19—1)



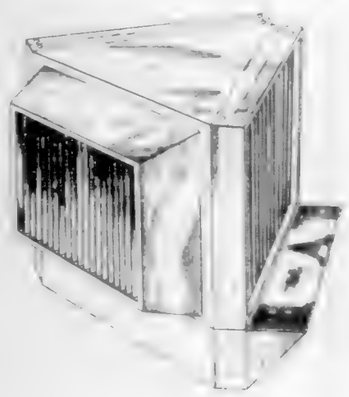
210,525
HIGH-PRESSURE, ELECTRICALLY ACTUATED, FLUID VALVE
Robert S. Keane, Placentia, Calif., assignor to International Research Corp., Anaheim, Calif., a corporation of California
Filed Mar. 25, 1966, Ser. No. 1,632
Term of patent 14 years
(Cl. D23—19)



210,526
FLUID HEAT EXCHANGER FOR AIR CONDITIONING AND REFRIGERATION SYSTEMS AND THE LIKE
Raymond A. Lo Turco, Wexford, Pa., assignor to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1967, Ser. No. 8,454
Term of patent 14 years
(Cl. D23—153)



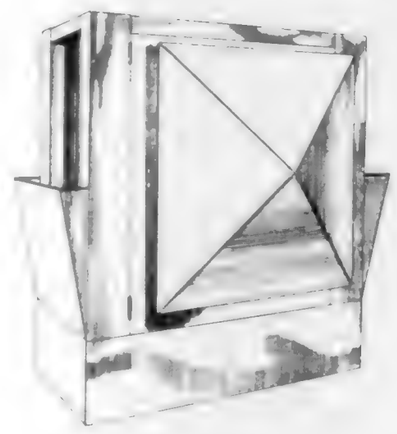
210,527
FLUID HEAT EXCHANGER FOR AIR CONDITIONING AND REFRIGERATION SYSTEMS AND THE LIKE
Raymond A. Lo Turco, Wexford, Pa., assignor to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1967, Ser. No. 8,455
Term of patent 14 years
(Cl. D23—153)



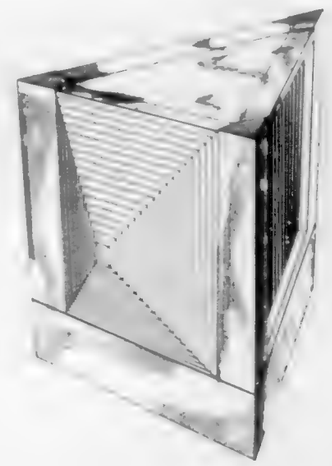
210,528
FLUID HEAT EXCHANGER FOR AIR CONDITIONING AND REFRIGERATION SYSTEMS AND THE LIKE
Raymond A. Lo Turco, Wexford, Pa., assignor to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1967, Ser. No. 8,456
Term of patent 14 years
(Cl. D23—153)

210,529
FLUID HEAT EXCHANGER FOR AIR CONDITIONING AND REFRIGERATION SYSTEMS AND THE LIKE
Raymond A. Lo Turco, Wexford, Pa., assignor to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1967, Ser. No. 8,458
Term of patent 14 years
(Cl. D23—153)

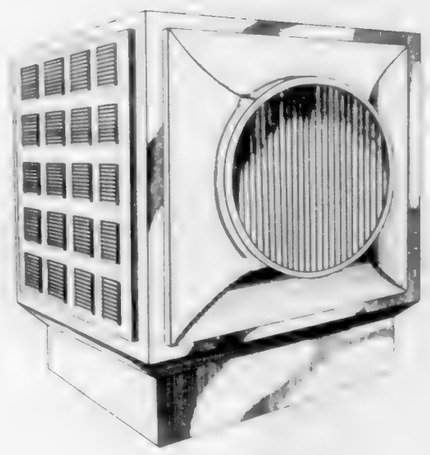
210,530
FLUID HEAT EXCHANGER FOR AIR CONDITIONING AND REFRIGERATION SYSTEMS AND THE LIKE
Raymond A. Lo Turco, Wexford, Pa., assignor to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1967, Ser. No. 8,457
Term of patent 14 years
(Cl. D23—153)



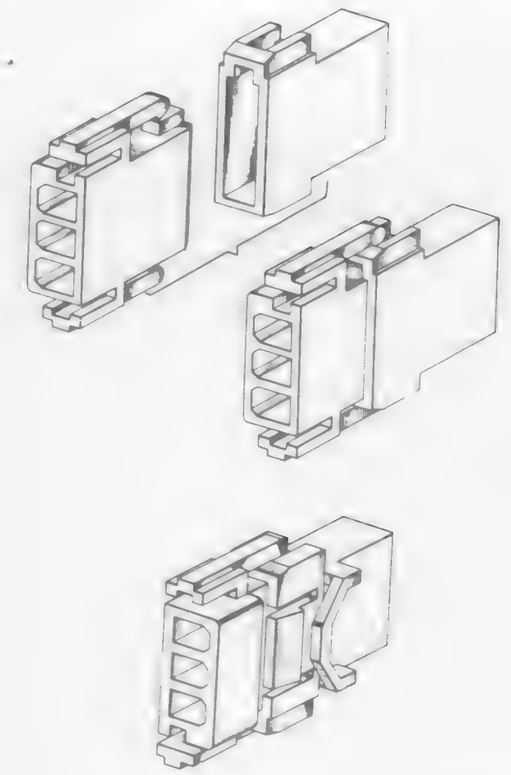
210,531
FLUID HEAT EXCHANGER FOR AIR CONDITIONING AND REFRIGERATION SYSTEMS AND THE LIKE
Raymond A. Lo Turco, Wexford, Pa., assignor to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1967, Ser. No. 8,460
Term of patent 14 years
(Cl. D23—153)



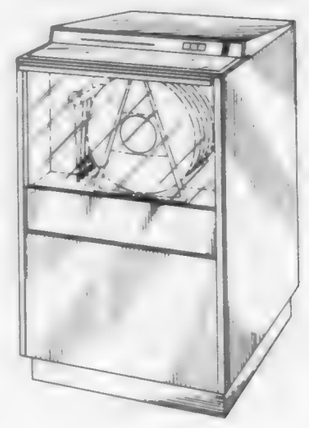
210,532
FLUID HEAT EXCHANGER FOR AIR CONDITIONING AND REFRIGERATION SYSTEMS AND THE LIKE
Raymond A. Lo Turco, Wexford, Pa., assignor to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1967, Ser. No. 8,461
Term of patent 14 years
(Cl. D23—153)



210,533
ELECTRICAL CONNECTOR HOUSING
William Vito Pauza, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 30, 1966, Ser. No. 4,113
Term of patent 14 years
(Cl. D26—1)

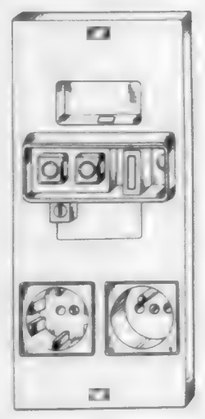


210,534
MAGNETIC DATA STORAGE UNIT
Harold L. Dean Wellesley, Mass., George H. Kress, East Orange, N.J., and Robert T. Pearson, Beverly, and David F. Sweeney, Wellesley, Mass., assignors, by mesne assignments, to Mohawk Data Science Corporation, Herkimer, N.Y., a corporation of New York
Filed Apr. 14, 1966, Ser. No. 1,900
Term of patent 14 years
(Cl. D26—5)

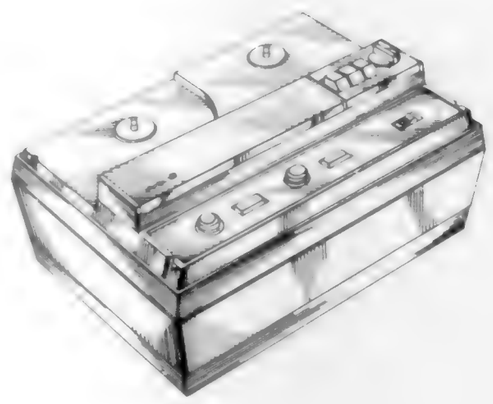


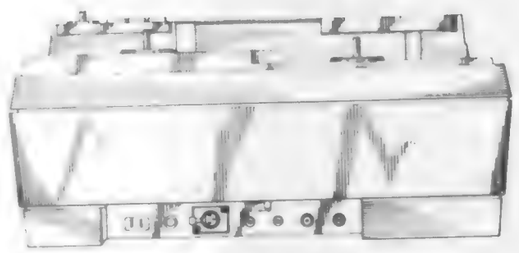
210,535
MAGNETIC TAPE TRANSPORT
Leon C. Sanderson, Los Angeles, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Feb. 24, 1967, Ser. No. 5,937
Term of patent 14 years
(Cl. D26—5)

210,536
COVER PLATE FOR ELECTRICAL RECEPTACLES
Mario Paganelli, Varese, Italy, assignor to Bassani S.p.A., Milan, Italy
Filed Dec. 20, 1966, Ser. No. 5,254
Claims priority, application Italy June 30, 1966
Term of patent 14 years
(Cl. D26—13)

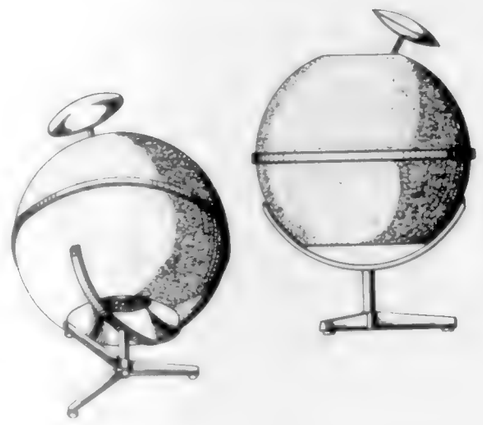


210,537
TAPE RECORDER
Richard S. Hart, Wheaton, Ill., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 22, 1966, Ser. No. 1,978
Term of patent 14 years
(Cl. D26—14)

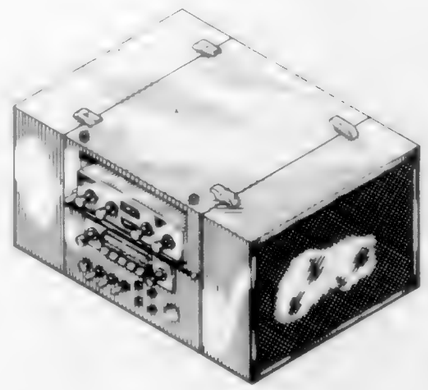




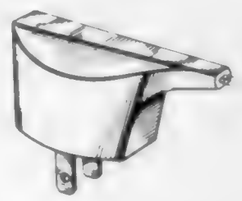
210,538
LOUDSPEAKER
Uolevi L. Lahti, 516 E. Liberty, Ann Arbor, Mich. 48108
Filed Dec. 22, 1966, Ser. No. 5,153
Term of patent 14 years
(Cl. D26—14)



210,539
PORTABLE STEREO TAPE RECORDER OR SIMILAR ARTICLE
Rex O. Wright, P.O. Box 16111, Salt Lake City, Utah 84116; Robert Haycraft, 1171 Hudson Ave., Salt Lake City, Utah 84106; and Raymond L. Gerard, 951 East 5650 South, Salt Lake City, Utah 84121
Filed July 24, 1967, Ser. No. 7,987
Term of patent 14 years
(Cl. D26—14)

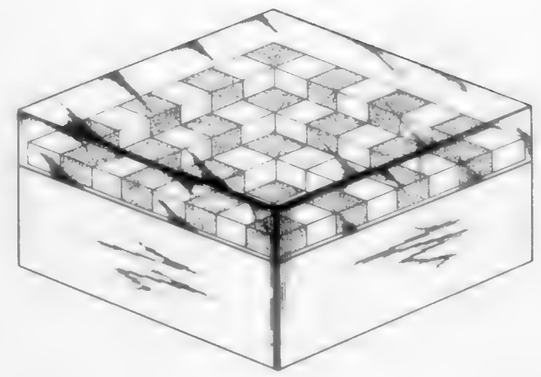


210,540
PLUG-IN POWER SUPPLY
Joseph A. Mas, 3 Maple Way Drive, Woodbury, N.Y. 11797
Filed Mar. 13, 1967, Ser. No. 6,191
Term of patent 14 years
(Cl. D26—15)

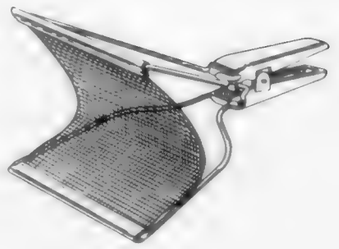


210,541
TOOTHPASTE TUBE DISPENSER
Donald E. McCombs, 3203 Chancer, St. Ann, Mo. 63074
Filed Jan. 30, 1967, Ser. No. 5,596
Term of patent 14 years
(Cl. D33—22)

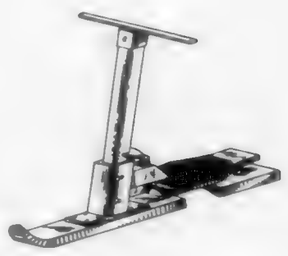
210,542
GAME BOARD
Noel Paul Stookey, 70 Bedford St., New York, N.Y. 10014
Filed Feb. 14, 1966, Ser. No. 1,022
Term of patent 14 years
(Cl. D34—5)



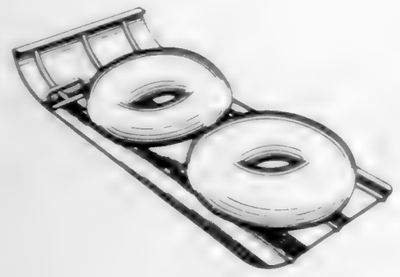
210,543
BALL PROJECTOR OR THE LIKE
Torao Nakayama, 38, 2-chome Hatsune-cho, Naka-ku, Yokohama, Japan
Filed Mar. 16, 1966, Ser. No. 1,495
Term of patent 14 years
(Cl. D34—5)



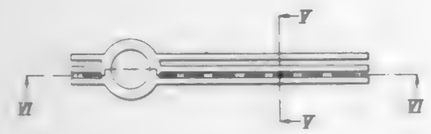
210,544
SKI SCOOTER
Samuel Fleisher, 2812 Ardmore, Royal Oak, Mich. 48073
Filed Nov. 21, 1966, Ser. No. 4,758
Term of patent 14 years
(Cl. D34—15)



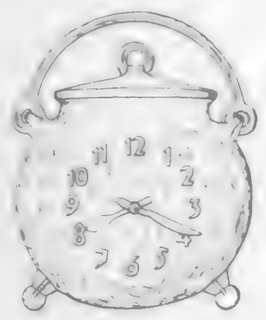
210,545
TOBOGGAN
Ray N. Thompson, 4096 West 5010 South, Kearns, Utah 84118
Filed Feb. 9, 1967, Ser. No. 5,750
Term of patent 14 years
(Cl. D34—15)



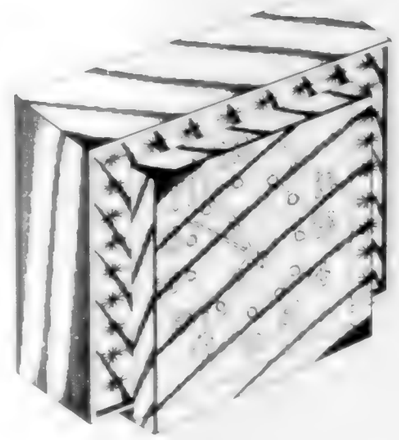
210,546
WATCH HAND OR SIMILAR ARTICLE
Hans-Ulrich Klingenberg, Merzligen, Switzerland, assignor to Vacuum Chronometer Corporation, Biel, Switzerland
Filed June 23, 1966, Ser. No. 2,793
Claims priority, application Switzerland Jan. 21, 1966
Term of patent 14 years
(Cl. D42—1)



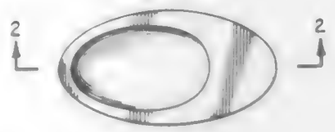
210,547
CLOCK
Harry L. Laylon, Syracuse, N.Y., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 27, 1966, Ser. No. 789
Term of patent 14 years
(Cl. D42—7)



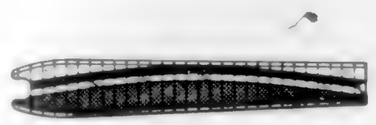
210,548
CLOCK CASING
Giacinto C. D'Ercoli, Park Forest, Roger L. Kelly, Arlington Heights, and Ellworth R. Danz and Roman J. Szalek, La Salle, Ill., assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed July 19, 1967, Ser. No. 7,885
Term of patent 14 years
(Cl. D42—7)



210,549
SPOON
Donald Q. O'Brien, Bedminster, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 5,521
Term of patent 14 years
(Cl. D44—29)



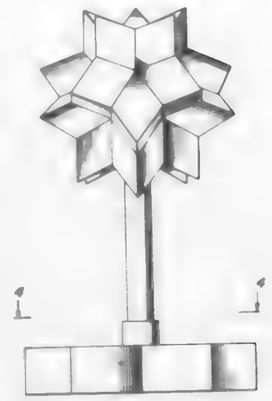
210,550
LINK CHAIN FOR A BRACELET OR THE LIKE
Morris D. Gandelman, Fort Lee, N.J., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed July 26, 1967, Ser. No. 7,995
Term of patent 7 years
(Cl. D45—4)



210,551
FINGER RING
George A. Flynn, Warwick, R.I., assignor to Drexel Institute of Technology, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 28, 1966, Ser. No. 4,831
Term of patent 14 years
(Cl. D45—10)

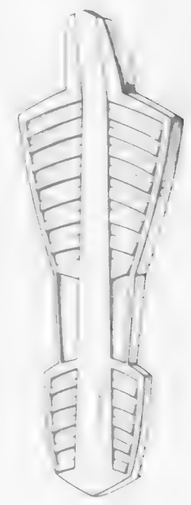
210,552
NECKLACE OR SIMILAR ARTICLE
Lee H. Pelzman, New York, N.Y., assignor to Pelton & Leru, Inc., New York, N.Y., a corporation of New York
Filed Oct. 23, 1967, Ser. No. 9,108
Term of patent 14 years
(Cl. D45—16)

210,553
LAMP
Henry J. Wilkerson, 211 S. McCrary St., Asheboro, N.C. 27203
Filed Dec. 28, 1966, Ser. No. 5,200
Term of patent 14 years
(Cl. D48—20)

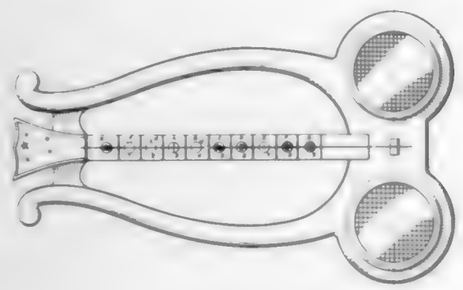


210,554
PITON OR THE LIKE
William A. Feuerer, 2009½ Oak St., Santa Monica, Calif. 90405
Filed Aug. 14, 1967, Ser. No. 8,261
Term of patent 14 years
(Cl. D54—11)

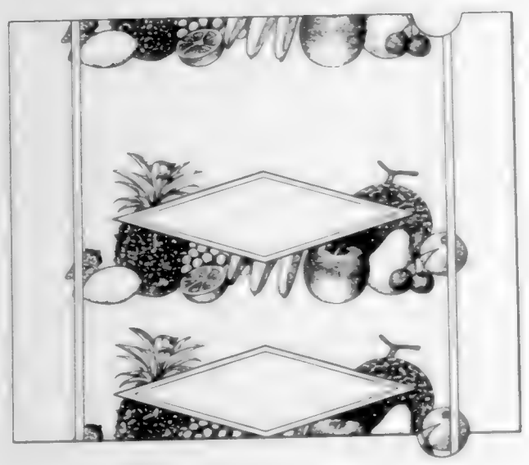
210,555
BASE DRUM BEATER FOOTPLATE COVER OR SIMILAR ARTICLE
Clifford A. Della-Porta, Evington, England, assignor to The Premier Drum Company Limited, London, England, a British company
Filed July 5, 1966, Ser. No. 2,914
Term of patent 14 years
(Cl. D56—1)



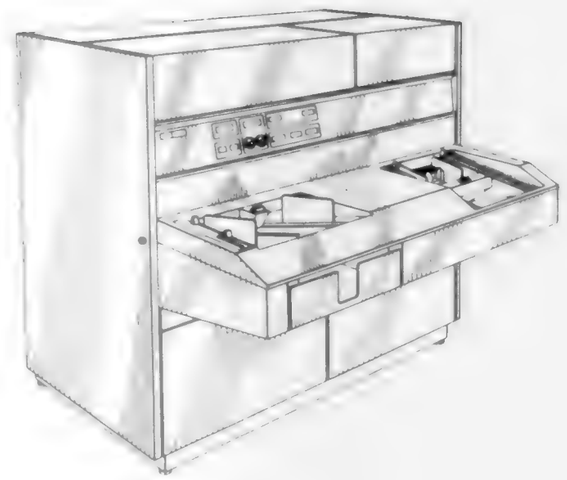
210,556
STRINGED MUSICAL INSTRUMENT
Clair Omar Musser, 12997 Blairwood Drive, Studio City, Calif. 91604
Filed Feb. 8, 1967, Ser. No. 5,724
Term of patent 14 years
(Cl. D56—1)



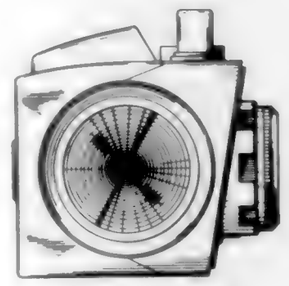
210,557
WRAPPING PAPER FOR CHEWING GUM
Akira Morita, Neyagawa-shi, Japan, assignor to Kanegafuchi Spinning Co., Ltd., Osaka, Japan
Filed Feb. 1, 1967, Ser. No. 5,648
Term of patent 14 years
(Cl. D59—2)



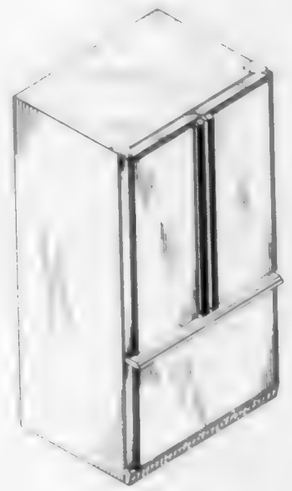
210,558
DOCUMENT REPRODUCING MACHINE
Robert G. Plantholt, Rochester, Mich., and Karl E. Kober, Rush, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 21, 1967, Ser. No. 6,780
Term of patent 14 years
(Cl. D61—1)



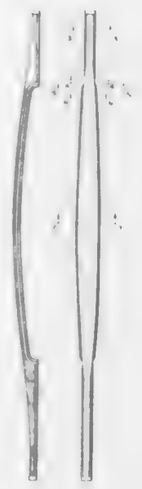
210,559
BOX CAMERA
Pasquale A. Mercorelli, 37 Halleck St., Newark, N.J. 07104
Filed May 24, 1967, Ser. No. 7,257
Term of patent 14 years
(Cl. D61—1)



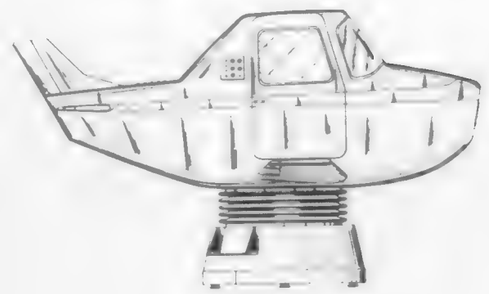
210,560
REFRIGERATOR-FREEZER CABINET
Robert W. Kennedy, Hilliard, and Wallace H. Appel, Columbus, Ohio, assignors to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed June 30, 1966, Ser. No. 2,873
Term of patent 14 years
(Cl. D67—3)



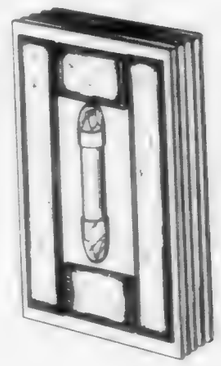
210,561
CABINET DOOR HANDLE
Edward H. Roberts, Jeffersontown, and Lawrence R. Collins, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed June 14, 1967, Ser. No. 7,478
Term of patent 14 years
(Cl. D67—3)



210,562
FIXED-BASE AVIATION TRAINER
Laimons E. Drupa and Richard L. Strong, Binghamton, N.Y., assignors to General Precision Systems Inc., a corporation of Delaware
Filed Mar. 3, 1967, Ser. No. 6,044
Term of patent 14 years
(Cl. D71—1)

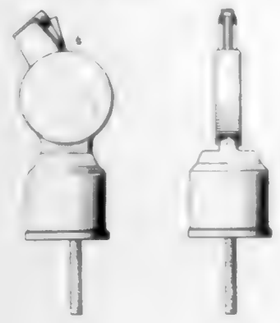


210,563
CONTAINER INSERT FOR A COSMETIC PACKAGE
Georges Kocens, 235 Camino Descanso, Palm Springs, Calif. 92262
Filed Apr. 6, 1967, Ser. No. 6,553
Term of patent 14 years
(Cl. D86—10)

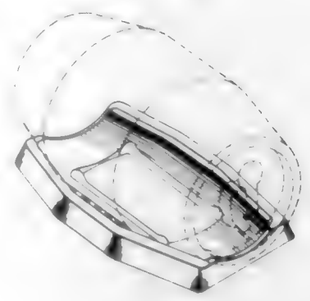


210,564
COMBINATION GUARD AND SPROCKET ASSEMBLY FOR BICYCLES EQUIPPED WITH DERAILLEUR MECHANISM
Frank P. Brilando, Niles, and Anton J. Panzica, Hinsdale, Ill., assignors to Schwinn Bicycle Company, a corporation of Illinois
Filed Nov. 7, 1966, Ser. No. 4,569
Term of patent 14 years
(Cl. D90—17)

210,565
LIQUOR POURER
Patrick Kearney, 38—11 217th St., Bayside, N.Y. 11360
Filed Nov. 15, 1965, Ser. No. 88,081
Term of patent 14 years
(Cl. D94—3)



210,566
KEG CRADLE
Frederic C. Jay, Richmond, Va., assignor to Richmond Cedar Works Manufacturing Corporation, Richmond, Va., a corporation of Virginia
Filed Apr. 17, 1967, Ser. No. 6,729
Term of patent 14 years
(Cl. D94—3)



LIST OF DESIGN PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 19TH DAY OF MARCH, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Pauza, William V. 210,533.
Albrecht, Leonard N., to Warner-Lambert Pharmaceutical Co. Automatic pipeting unit. 210,523, 3–19–68, Cl. D16—2.
Ampex Corp.: *See*—
Sanderson, Leon C. 210,535.
Appel, Wallace H.: *See*—
Kennedy, Robert W., and Appel. 210,560.
Aronson, Robert R., to Electric Fuel Propulsion, Inc. Automobile. 210,520, 3–19–68 Cl. D14—3.
Baratte, Paul. Holder for a squeeze tube. 210,517, 3–19–68, Cl. D9—294.
Bassani S.p.A.: *See*—
Paganelli, Mario. 210,536.
Brammer, Herbert, to Charles Mackinlay & Co. Ltd. Bottle. 210,514, 3–19–68, Cl. D9—72.
Briando, Frank P., and A. J. Panzica, to Schwinn Bicycle Co. Combination guard and sprocket assembly for bicycles equipped with derailleur mechanism. 210,564, 3–19–68, Cl. D90—17.
Burns, Dennis L. Face guard for a helmet. 210,510, 3–19–68, Cl. D2—233.
Collins, Lawrence R.: *See*—
Roberts, Edward H., and Collins. 210,561.
Conner, James M.: *See*—
Dreyfuss, Henry, and Conner. 210,521.
Container Corp. of America: *See*—
Walter, Richard T. 210,515.
Continental Can Co., Inc.: *See*—
Mascia, Carmen T., and Peyser. 210,516.
Danz, Ellworth R.: *See*—
D'Ercoli, Giacinto C., Kelly, Danz, and Szalek. 210,548.
Dean, Harold L., G. H. Kress, R. T. Pearson, and D. F. Sweeney, to Mohawk Data Science Corp. Magnetic data storage unit. 210,534, 3–19–68, Cl. D26—5.
Deere & Co.: *See*—
Dreyfuss, Henry, and Conner. 210,521.
Della-Porta, Clifford A., to The Premier Drum Co. Ltd. Base drum beater footplate cover or similar article. 210,555, 3–19–68, Cl. D56—1.
D'Ercoli, Giacinto C., R. L. Kelly, E. R. Danz, and R. J. Szalek, to General Time Corp. Clock casing design. 210,548, 3–19–68, Cl. D42—7.
Dorsey, William J., to Kaysam Corp. of America. Boot. 210,511, 3–19–68, Cl. D2—272.
Drexel Institute of Technology: *See*—
Flynn, George A. 210,551.
Dreyfuss, Henry, and J. M. Conner, to Deere & Co. Tractor. 210,521, 3–19–68, Cl. D14—3.
Drupa, Laimons E., and R. L. Strong, to General Precision Systems Inc. Fixed-base aviation trainers. 210,562, 3–19–68, Cl. D71—1.
Electric Fuel Propulsion, Inc.: *See*—
Aronson, Robert R. 210,520.
Feuerer, William A. Piton or the like. 210,554, 3–19–68. Cl. D54—11.
Fleisher, Samuel. Ski scooter. 210,544, 3–19–68, Cl. D34—15.
Flynn, George A., to Drexel Institute of Technology. Finger ring. 210,551, 3–19–68, Cl. D45—10.
Frick Co.: *See*—
Lo Turco, Raymond A. 210,526.
Lo Turco, Raymond A. 210,527.
Lo Turco, Raymond A. 210,528.
Lo Turco, Raymond A. 210,529.
Lo Turco, Raymond A. 210,530.
Lo Turco, Raymond A. 210,531.
Lo Turco, Raymond A. 210,532.
Gandelman, Morris D., to Jacoby-Bender, Inc. Link chain for a bracelet or the like. 210,550, 3–19–68, Cl. D45—4.
General Electric Co.: *See*—
Roberts, Edward H., and Collins. 210,561.
General Precision Systems Inc.: *See*—
Drupa, Laimons E., and Strong. 210,562.
General Time Corp.: *See*—
D'Ercoli, Giacinto C., Kelly, Danz, and Szalek. 210,548.
Gerard, Raymond L.: *See*—
Wright, Rex O., Haycraft, and Gerard. 210,539.
Hart, Richard S., to Minnesota Mining and Mfg. Co. Tape recorder. 210,537, 3–19–68, Cl. D26—14.
Haycraft, Robert: *See*—
Wright, Rex O., Haycraft, and Gerard. 210,539.
International Research Corp.: *See*—
Keane, Robert S. 210,525.
Jacoby-Bender, Inc.: *See*—
Gandelman, Morris D. 210,550.
Jay, Frederic C., to Richmond Cedar Works Mfg. Corp. Keg cradle. 210,566, 3–19–68, Cl. D94—3.
Kallman, Robert: *See*—
Kanter, Harry, and Kallman. 210,512.
Kanegafuchi Spinning Co., Ltd.: *See*—
Morita, Akira. 210,557.
Kanter, Harry, and R. Kallman. Necktie knot support. 210,512, 3–19–68, Cl. D2—401.
Kaysam Corp. of America: *See*—
Dorsey, William J. 210,511.
Keane, Robert S., to International Research Corp. High-pressure, electrically actuated, fluid valve. 210,525, 3–19–68, Cl. D23—19.
Kearney, Patrick. Liquor pourer. 210,565, 3–19–68, Cl. D94—3.
Kelly, Roger L.: *See*—
D'Ercoli, Giacinto C., Kelly, Danz, and Szalek. 210,548.
Kennedy, Robert W., and W. H. Appel, to Westinghouse Electric Corp. Refrigerator-freezer cabinet. 210,560, 3–19–68, Cl. D67—3.
Klingenberg, Hans-Ulrich, to Vacuum Chronometer Corp. Watch hand or similar article. 210,546, 3–19–68, Cl. D42—1.
Kober, Karl E.: *See*—
Plantholt, Robert G., and Kober. 210,558.
Kocens, Georges. Container insert for a cosmetic package. 210,563, 3–19–68, Cl. D86—10.
Kress, George H.: *See*—
Dean, Harold L., Kress, Pearson, and Sweeney. 210,534.
Kusel, Edward J., and R. S. Mankin. Railing. 210,519, 3–19–68, Cl. D13—7.
Lahti, Uolevi L. Loudspeaker. 210,538, 3–19–68, Cl. D26—14.
Laughlin, Clayton A., to Minnesota Plastics Corp. Jug. 210,513, 3–19–68, Cl. D9—41.
Laylon, Harry L., to Sunbeam Corp. Clock. 210,547, 3–19–68, Cl. D42—7.
Lo Turco, Raymond A., to Frick Co. Fluid heat exchanger for air conditioning and refrigeration systems and the like. 210,526, 3–19–68, Cl. D23—153.
Lo Turco, Raymond A., to Frick Co. Fluid heat exchanger for air conditioning and refrigeration systems and the like. 210,527, 3–19–68, Cl. D23—153.
Lo Turco, Raymond A., to Frick Co. Fluid heat exchanger for air conditioning and refrigeration systems and the like. 210,528, 3–19–68, Cl. D23—153.
Lo Turco, Raymond A., to Frick Co. Fluid heat exchanger for air conditioning and refrigeration systems and the like. 210,529, 3–19–68, Cl. D23—153.
Lo Turco, Raymond A., to Frick Co. Fluid heat exchanger for air conditioning and refrigeration systems and the like. 210,530, 3–19–68, Cl. D23—153.
Lo Turco, Raymond A., to Frick Co. Fluid heat exchanger for air conditioning and refrigeration systems and the like. 210,531, 3–19–68, Cl. D23—153.
Lo Turco, Raymond A., to Frick Co. Fluid heat exchanger for air conditioning and refrigeration systems and the like. 210,532, 3–19–68, Cl. D23—153.
Mackinlay, Charles, & Co. Ltd.: *See*—
Brammer, Herbert. 210,514.
Mankin, Robert S.: *See*—
Kusel, Edward J., and Mankin. 210,519.
Mas, Joseph A. Plug-in power supply. 210,540, 3–19–68, Cl. D26—15.
Mascia, Carmen T., and H. A. Peyser, to Continental Can Co., Inc. Dispenser cap for containers. 210,516, 3–19–68, Cl. D9—276.
McCombs, Donald E. Toothpaste tube dispenser. 210,541, 3–19–68, Cl. D33—22.
Mercorelli, Pasquale A. Box camera. 210,559, 3–19–68, Cl. D61—1.
Minnesota Mining and Mfg. Co.: *See*—
Hart, Richard S. 210,537.
Laughlin, Clayton A. 210,513.
Mohawk Data Science Corp.: *See*—
Dean, Harold L., Kress, Pearson, and Sweeney. 210,534.
Morita, Akira, to Kanegafuchi Spinning Co., Ltd. Wrapping paper for chewing gum. 210,557, 3–19–68, Cl. D59—2.
Musser, Clair O. Stringed musical instrument. 210,556, 3–19–68, Cl. D56—1.
Nakayama, Torao. Ball projector or the like. 210,543, 3–19–68. Cl. D34—5.
O'Brien, Donald Q., to Warner-Lambert Pharmaceutical Co. Spoon. 210,549, 3–19–68, Cl. D44—29.
Paganelli, Mario, to Bassani S.p.A. Cover plate for electrical receptacles. 210,536, 3–19–68, Cl. D26—13.
Panzica, Anton J.: *See*—
Brilando, Frank P., and Panzica. 210,564.
Pauza, William V., to AMP Inc. Electrical connector housing. 210,533, 3–19–68, Cl. D26—1.
Pearson, Robert T.: *See*—
Dean, Harold L., Kress, Pearson, and Sweeney. 210,534.
Pelton & Leru, Inc.: *See*—
Pelzman, Lee H. 210,552.
Pelzman, Lee H., to Pelton & Leru, Inc. Necklace or similar article. 210,552, 3–19–68, Cl. D45—16.
Peyser, Harry A.: *See*—
Mascia, Carmen T., and Peyser. 210,516.
Plantholt, Robert G., and K. E. Kober, to Xerox Corp. Document reproducing machine. 210,558, 3–19–68, Cl. D61—1.
Premier Drum Co. Ltd., The: *See*—
Della-Porta, Clifford A. 210,555.

Richmond Cedar Works Mfg. Corp. : *See*—
Jay, Frederic C. 210,566.
Roberts, Edward H., and L. R. Collins, to General Electric Co. Cabinet door handle. 210,561, 3–19–68, Cl. D67—3.
Sanderson, Leon C., to Ampex Corp. Magnetic tape transport. 210,535, 3–19–68, Cl. D26—5.
Schwinn Bicycle Co. : *See*—
Brilando, Frank P., and Panzica. 210,564.
Smith, Guy. Burial vault. 210,524, 3–19–68, Cl. D19—1.
Stookey, Noel P. Game board. 210,542, 3–19–68, Cl. D34—5.
Strong, Richard L. : *See*—
Drupa, Laimons E., and Strong. 210,562.
Sunbeam Corp. : *See*—
Laylon, Harry L. 210,547.
Sweeney, David F. : *See*—
Dean, Harold L., Kress, Pearson, and Sweeney. 210,534.
Szalek, Roman J. : *See*—
D'Ercoli, Giacinto C., Kelly, Danz, and Szalek. 210,548.
Thompson, Ray N. Toboggan. 210,545, 3–19–68, Cl. D34—15.
Vacuum Chronometer Corp. : *See*—
Klingenberg, Hans-Ulrich. 210,546.
Walter, Richard T., to Container Corp. of America. Egg carton. 210,515, 3–19–68, Cl. D9—190.
Ward, Elmer A. Combination boat and canopy for the bed of a pick-up vehicle and the like. 210,522, 3–19–68, Cl. D14—27.
Warner-Lambert Pharmaceutical Co. : *See*—
Albrecht, Leonard N. 210,523.
O'Brien, Donald Q. 210,549.
Westinghouse Electric Corp. : *See*—
Kennedy, Robert W., and Appel. 210,560.
Wilkerson, Henry J. Lamp. 210,553, 3–19–68, Cl. D48—20.
Woodman, Gerald A. Three-dimensional plastic panel. 210,518, 3–19–68, Cl. D13—1.
Wright, Rex O., R. Haycraft, and R. L. Gerard. Portable stereo tape recorder or similar article. 210,539, 3–19–68, Cl. D26—14.
Xerox Corp. : *See*—
Plantholt, Robert G., and Kober. 210,558.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 19TH DAY OF MARCH, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Abbott, Frank R. : *See*—
Burbank, Cecil J., and Abbott. 3,373,842.
Abbott Laboratories : *See*—
Kolsto, Orville L. 3,374,064.
ACF Industries : *See*—
Lane, Thomas. 3,373,594.
Adams, Richard C., to Friden, Inc. Control means in mail separating cancelling and stacking machines. 3,373,685, 3–19–68, Cl. 101—235.
Adams, Robert B., to Moore Products Co. Flow control apparatus. 3,373,759, 3–19–68, Cl. 137—81.5.
Adams, Robert B., and T. J. Huslin, to Moore Products, Co. Fluid control apparatus. 3,373,760, 3–19–68, Cl. 137—81.5.
Adamski, Joseph : *See*—
Tinder, David V., Ollman, and Adamski. 3,373,528.
Adamson, Arthur P. : *See*—
Erwin, John R., and Adamson. 3,373,928.
Admiral Corp. : *See*—
Bohman, Raymond H. 3,373,577.
Squire, Herbert D. 3,373,754.
Aerojet-General Corp. : *See*—
Lawson, Herbert E. 3,374,120.
Aerospace Systems Co. : *See*—
Kriesel, Marshall S. 3,373,656.
Afton, Leonard. Combined holder and utensil for a fever thermometer. 3,373,863, 3–19–68, Cl. 206—16.5.
AGFA Aktiengesellschaft : *See*—
Dieterich, Dieter, Bayer, Himmelmann, and Ulrich. 3,374,095.
Agfa-Gevaert Aktiengesellschaft : *See*—
Dürr, Helmut. 3,374,458.
Jakob, Franz. 3,373,671.
Air Products and Chemicals, Inc. : *See*—
Craig, Robert G., Friedman, and Schwartz. 3,374,167.
Jepsen, Robert E. 3,373,999.
McEvoy, James, and Shallit. 3,374,184.
Air Reduction Co., Inc. : *See*—
Edwards, Bernard, and Kimak. 3,374,133.
Air-Tech Industries, Inc. : *See*—
Meyer, Hans and K. 3,373,531.
Aishima, Itsuho, and Y. Takashi, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for polymerizing propylene using a solid ternary catalyst of titanium, antimony and aluminum. 3,374,214, 3–19–68, Cl. 260—93.7.
Ajem Laboratories, Inc. : *See*—
Stewart, James M., Pashaian, Romack, and Arnold. 3,373,877.
Akai Electric Co., Ltd. : *See*—
Atsumi, Katsuya. 3,373,913.
Aktiebolaget Bofors : *See*—
Simmons, Bjorn H. O. 3,373,687.
Aktiebolaget Tabougnar : *See*—
Borgkvist, Tage A. 3,373,980.
Aktiengesellschaft Brown, Boveri & Cie : *See*—
Bühler, Karl, and Trachsel. 3,374,320.
Alberto, Pietro : *See*—
Gillono, Matteo, and Alberto. 3,373,551.
Albinak, Marvin J., and W. H. Turner, to Owens-Illinois, Inc. Multi-color photoluminescent glass systems. 3,374,381, 3–19–68, Cl. 313—108.
Albrecht, Walter A. Fuel vaporizer for internal combustion engines. 3373,726, 3–19–68, Cl. 123—122.
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Cappuccio, Vittorio, and Algieri. 3,374,215.
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Barecki, Chester J., to American Seating Co. Teacher demonstration console. 3,373,703, 3–19–68, Cl. 108—50.

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Barker, Joseph K. Trailer construction. 3,374,029, 3–19–68, Cl. 296—28.

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Batch, Marvin L. Liquid ejector device. 3,373,492, 3–19–68, Cl. 32—33.

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Benson, Howard F., to General Dynamics Corp. Filtered wave-energy corner-reflector. 3,374,044, 3–19–68, Cl. 350—102.

Berg, Robert D. W. Latch mechanism. 3,374,020, 3–19–68, Cl. 292—175.

Bergen, George J., and A. H. Singer, to United States of America, Navy. Accumulation means for reduction of sputter in gas-filled, Lyman-Alpha source tube. 3,374,383, 3–19–68, Cl. 313—207.

Bernardi, Luigi, G. Bosisio, R. de Castiglione, and O. Goffredo, to Societa Farmaceutici Italia. Protected derivatives of physalaemin. 3,374,218, 3–19–68, Cl. 260—112.5.

Berndt, Walter, and H. Redlich, to Telefunken Aktiengesellschaft, Record. 3,373,997, 3–19–68, Cl. 274—42.

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Bick, David E., and C. R. Little, to Dowty Mining Equipment Ltd. Hydraulic devices for controlling the speed of wheeled vehicles. 3,373,699, 3–19–68, Cl. 104—162.

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Bien, Alfred A., and R. M. Gerweck, to Chrysler Corp. Releasable steering column clamp. 3,373,965, 3–19–68, Cl. 248—226.

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Bishop, Leonard J., to Mechanical Handling Systems, Inc. Signal setting mechanism for tow truck conveyor systems. 3,373,698, 3–19–68, Cl. 104—88.

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Bivans, Elbert L., to Bivans Corp. Cartoning machine for vertical carton flats. 3,373,665, 3–19–68, Cl. 93—53.

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Blaiklock, William M., and D. L. Allen, to General Steel Wares Ltd. Washing machine support structure. 3,373,962, 3–19–68, Cl. 248—18.

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Blayden, James H., to Aluminum Co. of America. Joint structures and elements thereof. 3,373,537, 3–19–68, Cl. 52—288.

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Blunden, Donald J., J. E. Black, Jr., L. K. De Shetler, and E. D. Gotcher, to Whitehead & Kales Co. Vehicle tie-down structure. 3,374,008, 3–19–68, Cl. 280—179.

Boberg, Thomas C., and R. C. Allen, Jr., to Esso Production Research Co. Steam lifting of heavy crudes. 3,373,805, 3–19–68, Cl. 166—2.

Bobrick, Mitchell. Post light. 3,374,343, 3–19–68, Cl. 240—3.

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Boggs, Le Roy A., to Koppers Co., Inc. Method and apparatus for making fiber reinforced articles of cross sectional shape other than cylindrical. 3,374,132, 3–19–68, Cl. 156—171.

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Bohme, Alexander, to Nassovia Werkzeugmaschinenfabrik G.m.b.H. Tracing mechanism for duplicating machine. 3,373,659, 3–19–68, Cl. 90—62.

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Hendry, James W. 3,373,502.
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Borgkvist, Tage A., to Aktiebolaget Tabougnar. Walking beam furnace for effecting different feed speeds of the charge. 3,373,980, 3–19–68, Cl. 263—6.

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Bossinger, Charles D.: *See*—
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Boutwell, Frederick K., A. B. Wenzel, and A. C. Charters, to General Motors Corp. High speed gate valve. 3,373,758, 3–19–68, Cl. 137—68.

Bowdish, Frank W. Process for refining sands. 3,374,062, 3–19–68, Cl. 23—182.

Bower, Richard R. Electric circuit. 3,374,305, 3–19–68, Cl. 174—68.5.

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Boyce, Donald A.: *See*—
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Wright, William B., Jr., and Brabander. 3,374,237.

Bradham, Allen C., to Texas Instruments Inc. Printed circuit board. 3,374,306, 3–19–68, Cl. 174—68.5.

Bramley, Jenny, to Melpar, Inc. Intense incoherent light source obtained by quenching the higher excited states and concentrating the energy on the lower states. 3,374,393, 3–19–68, Cl. 315—39.

Brass, William C. Handicapped children writing aid. 3,373,509, 3–19–68, Cl. 35—36.

Braun, Reinhold, and J. B. Porter, to General Dynamics Corp. Pulse generator for modulating a magnetron. 3,374,443, 3–19–68, Cl. 331—87.

Bremner, William C.: *See*—
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Brennemann, Andrew E., to International Business Machines Corp. Method for depositing thin dielectric polymer films. 3,374,111, 3–19–68, Cl. 117—212.

Brisebois, Romeo. Detachable connection of a vehicle body to a chassis. 3,374,030, 3–19–68, Cl. 296—35.

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Brixner, Lothar H., to E. I. du Pont de Nemours and Co. Vacancy compensated calcium neodymium vanadate phosphors. 3,374,444, 3–19–68, Cl. 331—94.5.

Brockhaus, Gerhard, G. Leonhardt, and H. Weber, to Calor-Emag Elektrizitats-Aktiengesellschaft. Electrical coupling in which making and breaking of conductors is within casing filled with an insulating medium. 3,374,331, 3–19–68, Cl. 200—144.

Brockman, Heinz, to Daimler-Benz Aktiengensellschaft. Gas turbine blade. 3,373,970, 3–19–68, Cl. 253—39.15.

Brockmuller, Friedrich F., to Windmoller & Holscher. Apparatus for producing cross-bottom valve bags. 3,373,664, 3–19–68, Cl. 93—8.

Bronikowski, Raymond J., to McGraw-Edison Co. Fuse cutout. 3,374,329, 3–19–68, Cl. 200—127.

Brooks, Charles G.: *See*—
Barditch, Irving F., and Brooks. 3,374,425.

Brooks, William J. Swimming instruction pool. 3,373,450, 3–19–68, Cl. 4—172.

Broom, Trevor, to Central Electricity Generating Board. Magnetohydrodynamic electrical generators. 3,374,369, 3–19–68, Cl. 310—11.

Brothman, Abraham, L. Horowitz, M. Gomery, and C. Yanis, to Sangamo Electric Co. Supervisory control system. 3,374,464, 3–19–68, Cl. 340—172.5.

Brouwer, Charles W., and R. V. Tata, to Leesona Corp. Constant pressure, solid wax-applicator. 3,373,718, 3–19–68, Cl. 118—78.

Broverman, Alvin Y., G. C. Wilburn, Q. T. Jones, and D. A. Regar, to Westinghouse Electric Corp. Electrical inductive apparatus. 3,374,453, 3–19–68, Cl. 336—197.

Brown, Cicero C.: *See*—
Cochran, Chudleigh B. 3,373,816.

Brown, Harold A.: *See*—
Moore, Robert E., and Brown. 3,374,449.

Brown International Corp.: *See*—
Holbrook, Franklin K. 3,373,784.

Brown Oil Tools, Inc.: *See*—
Rike, James L., Babb and Potts. 3,373,818.

Brummett, Earl R., to General Motors Corp. Regenerator matrix. 3,373,798, 3–19–68, Cl. 165—10.

Brunson, Virgil A., to Dover Corp. Positive displacement pump. 3,373,689. 3–19–68, Cl. 103—42.

Bry, Thomas F.: *See*—
Fried, John, and Bry. 3,374,226.

Bryan, John W.: *See*—
Sullivan, Dennis J., and Bryan. 3,374,455.

Buchanan, James B., to E. I. du Pont de Nemours and Co. Preparation of S-alkyl thiolhydroxamate esters. 3,374,260, 3–19–68, Cl. 260—453.

Buckbee-Mears Co.: *See*—
Toensing, James W. 3,373,912.

Budd Co., The: *See*—
Witzgall, Herbert J. 3,373,898.
Witzgall, Herbert J. 3,373,899.

Budde, Wolfgang. Remote vehicle control. 3,373,957, 3–19–68, Cl. 244—75.

Buechner, Werner W. Photographic wash vessel. 3,373,674, 3,19–68, Cl. 95—97.

Buehler, Ervin R., to General Motors Corp. Stop-on signal tuner for combined AM-FM receivers. 3,374,436, 3–19–68, Cl. 325—470.

Bühler, Karl, and H. Trachsel, to Aktiengesellschaft Brown, Boveri & Cie. Tap-changing device for transformers having load current diverter means and improved hydraulic follower mechanism therefor. 3,374,320, 3–19–68, Cl. 200—18.

Bunders, Gary A. Lamp construction. 3,373,964, 3–19–68, Cl. 248—158.

Burbank, Cecil J., and F. R. Abbott, to United States of America, Navy. Underwater anechoic chamber with screen of rubberlike tubes. 3,373,842, 3–19–68, Cl. 181—33.

Burch, Homer A., to The Norwich Pharmacal Co. 6-chloro-2-(5-nitro-2-furyl)cinchoninic acid. 3,374,239, 3–19–68, Cl. 260—287.

Burley, Billy, to Johnson Service Co. Thermal actuator and control therefor. 3,374,337, 3–19–68, Cl. 219—501.

Burlington Industries, Inc.: *See*—
Wilson, Thomas W., Fahringer, and Hiser.

Burnham, John W., to The French Oil Mill Machinery Co. Spacers for cage presses. 3,373,680, 3–19–68, Cl. 100—129.

Burroughs Corp.: *See*—
Best, Donald T., and Van Andel.

Burson, Bernard J., to Burson Electronics, Inc. Towel sorter having an infrared detector. 3,373,869, 3–19–68, Cl. 209—111.5.

Burson Electronics, Inc.: *See*—
Burson, Bernard, Jr.

Burtch, Fred W., to Gulf Research & Development Co. Process and apparatus for heating fluids in a well bore. 3,373,811, 3–19–68, Cl. 166—25.

Butler, Otto D. Shower-shaver. 3,373,448, 3–19–68, Cl. 4—1.

CSF-Compagnie Generale de Telegraphie Sans Fil: *See*
Cahour, Pierre, and Sobotka.
Hadni, Armand.

Cahour, Pierre, and W. Sobotka, to CSF-Compagnie Generale de Telegraphie Sans Fil. Sole electrode of the crossed-field type of electron discharge device having a coating of refractory material thereon. 3,374,389, 3–19–68, Cl. 315—3.5.

Caldwell, John P.: *See*—
Roberts, Russell R., and Caldwell.

Callis, Carl R., to United States of America, Navy. Zener coupled wide band logarithmic video amplifier. 3,374,361, 3–19–68, Cl. 307—229.

Calor-Emag Elektrizitats-Aktiengesellschaft: *See*—
Brockhaus, Gerhard, Leonhardt, and Weber.

Calvert, Frederick H., to Eaton Yale & Towne, Inc. Controlled-velocity drive. 3,374,373, 3–19–68, Cl. 310—94.

Cameron, Frank L., to Westinghouse Electric Corp. Cartridge-type fuse with explosion pots. 3,374,328, 3–19–68, Cl. 200—120.

Cameron, Frank L., to Westinghouse Electric Corp. Current limiting fuse. 3,374,330, 3–19–68, Cl. 200—132.

Camilleri, Charles F.: *See*—
Knapp, Robert S., and Camilleri.

Campagnolo, Tullio. High performance friction disc brake. 3,373,845, 3–19–68, Cl. 188—26.

Campbell, John R.: *See*—
Loprete, Joseph F., Flanzenbaum, and Campbell.

Canadian General Electric Co., Ltd.: *See*—
Williamson, Dennis F.

Canadian Patents and Development Ltd.: *See*—
Kusters, Norbert L., and MacMartin.

Cappuccio, Vittorio, and S. Algieri, to Montecatini Edison S.p.A. Synthetic polymer compositions having a particular receptivity to dyestuffs and a process for preparing them. 3,374,215, 3–19–68, Cl. 260—93.7.

Carney, Richard W. J.: *See*—
De Stevens, George, Blatter, and Carney.

Carney, Richard W. J., and W. L. Beneze, to Ciba Corp. Unsaturated oxacycles. 3,374,245, 3–19–68, Cl. 260—345.2.

Carolan, Ann J. and W. J. Display viewing apparatus. 3,373,654, 3–19–68, Cl. 88—24.

Carolan, William J.: *See*—
Carolan, Ann J. and W. J.

Carothers, Charles H.: *See*—
Lawrence, Robert J., and Carothers.

Carr, Norman L., and R. E. Peterson, to Gulf Research & Development Co. Thermal hydrodealkylation process. 3,374,280, 3–19–68, Cl. 260—672.

Carrier Corp.: *See*—
Miller, Kenneth H.

Caslow, Joseph H.: *See*—
Smilges, Robert, and Caslow.

Cast, James N., W. H. Horning, and F. Twiss, to Lear Siegler, Inc. Digital data processor. 3,374,467, 3–19–68, Cl. 340—172.5.

Catlin, Everett A., and A. Cort, Jr., to The Babcock & Wilcox Co. Thermal steam scrubber. 3,373,544, 3–19–68, Cl. 55—183.

Cavataio, Dolores B. Plant plastic cap. 3,373,525, 3–19–68, Cl. 47—27.

Celanese Coatings Co.: *See*—
Hicks, Darrell D.
Masters, John E., and Price.

Central Electricity Generating Board: *See*—
Broom, Trevor.
Swift-Hook, Donald T., Wright and Maycock.
Swift-Hook, Donald T.

Central Transformer Corp.: *See*—
Winter, David F.

Century Electric Co.: *See*—
Trower, David L.

Ceskoslovenska Akademie Ved: *See*—
Balej, Jan, Paseka, Vondrák, and Koudelka.
Hrdina, Jiff.

Chabal, Joseph: *See*—
Junge, Albert E., and Chabal.
Junge, Albert E., and Chabal.

Chabbert, Henri. Magnetic compass. 3,373,498, 3–19–68, Cl. 33—223.

Challis, Michael D.: *See*—
Ostberg, Werner, and Challis.

Chambers, Henry B., and C. W. Tellefson, to Hydranautics. Hydraulic gripper for derrick jack. 3,373,971, 3–19–68, Cl. 254—107.

Chan, John K.: *See*—
Marcus, Erich, and Chan.

Chang, James T. H., U. F. Gianola, and M. W. Sagal, to Bell Telephone Laboratories, Inc. Method for controlled aging of thin magnetic films by means of an easy axis annealing treatment. 3,374,113, 3–19–68, Cl. 117—227.

Chaplin, Daryl M., to Bell Telephone Laboratories, Inc. Telephone signalling system. 3,374,317, 3–19–68, Cl. 179—84.

Chaplin, John B., to Bell Aerospace Corp. Air cushion vehicle stabilizing means. 3,373,836, 3–19–68, Cl. 180—118.

Chapman, Roy A., to United Aircraft of Canada Ltd. Torquemeter with positive and negative reading. 3,373,603, 3–19–68, Cl. 73—136.

Charbonnier, Francis M., E. E. Martin, and L. W. Swanson, to Field Emission Corp. Field emission cathode having tungsten Miller indices 100 plane coated with zirconium, hafnium or magnesium on oxygen binder. 3,374,386, 3–19–68, Cl. 313—346.

Charters, Alexander C.: *See*—
Boutwell, Frederick K., Wenzel, and Charters.

Chaves, Aurellus, Jr., W. J. Thayer, and R. F. Bailey, to Moog, Inc. Valve for controlling simultaneously the flow of two separate fluids. 3,373,769, 3–19–68, Cl. 137—595.

Chemetron Corp.: *See*—
Hopkins, Boyd R.

Chemische Werke Huls Aktiengesellschaft: *See*—
Zur Hausen, Manfred, and Knepper.

Cherbuliez, Emile, and J. Rabinowitz, to Hooker Chemical Corp. Monoesters of phosphonic acids. 3,374,294, 3–19–68, Cl. 260—958.

Chevron Research Co.: *See*—
Csicsery, Sigmund M.
Fischer, William, and Postlewaite.

Childs, Warren L.: *See*—
Lyles, Marvin E., and Childs.

Christianson, Lynn M. Dust collecting system. 3,373,545, 3–19–68, Cl. 55—273.

Chrysler Corp.: *See*—
Bien, Alfred A., and Gerweck.
Wells, John R.

Ciba Corp.: *See*—
Carney, Richard W. J., and Bencze.
De Stevens, George, Blatter, and Carney.
Mizzoni, Renat H., and De Stevens.
Schmidt, Paul, Schweizer, Eichenberger, and Wilhelm.

Ciba Ltd.: *See*—
Arya, Vishwa P.
Greenlee, Sylvan O.
Meier, Edwin, and Schweizer.
Wick, Arnold, and Frey.
Zahir, Sheik A.-C.

Cities Service Oil Co.: *See*—
Glass, Eugene D., and Russell.

Clark, Oran: *See*—
McIntire, Daryl C., and Clark.

Claxton, Gerald L.: *See*—
Johnson, Wallace J. S., and Claxton.

Clay, Albert L., and A. W. Fidrych, to The Kellems Co., Inc. Hose containment device.

Cleary, James M., to Atlantic Richfield Co. Method and apparatus for drilling.

Coates, Harold, and P. A. T. Hoye, to Albright & Wilson (Mfg.) Ltd. Preparation of alkyl iodides from alkyl alcohols and organotin iodides.

Cochran, Chudleigh B., to C. C. Brown. Method for injector tubing gas lift.

Cole, Douglas I., to General Electric Co. Expendable immersion thermocouple including weight.

Cole, Howard I.: *See*—
Horn, Richard A., and Cole.

Coleman, Charles E.: *See*—
Black, James H., Coleman, and Stant.

Coleman, Lawrence J. Meat tongs.

Collins, Dennis I. Method and apparatus for heating stalled engines.

Collins, Joseph L.: *See*—
Larkam, Charles W., English, Hammer, Block, and Collins.

Collins Machinery Corp.: *See*—
Behnke, Howard N.

Collins Radio Co.: *See*—
Fenwick, Richard C.

Columbian Carbon Co.: *See*—
Lloyd, Bonnie C., and McAlister.

Columbus McKinnon Corp.: *See*—
Manney, Charles J., Robinson, and Molnar.

Colville, Francis J., and G. S. Kitson, to Rolls-Royce Ltd. Gas turbine jet engine power plant having a jet nozzle with a plurality of nozzle members.

Commissariat a l'Energie Atomique: *See*—
Costes, Didier.
Ponthus, Louis, and Lacour.

Compagnie des Gelatines Francaises: *See*—
Villalon, Ernest M.

Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie: *See*—
Massoubre, Jean-Marie.

Concelman, Carl W., to Amphenol Corp. Diode transfer switch.

Congdon, George L., to Scovill Mfg. Co. Blender and built-in spatula.

Connelly, Edward M., to Melpar, Inc. Multi-output statistical switch.

Conner, Guy O., to Rolls-Royce of Canada, Ltd. Adjustable apparatus for pulverizing solid materials. 3,374,034, 3–19–68, Cl. 299—86.

Connolly, Thomas A.: *See*—
Richmond, Richard C., Pariser, and Connolly.

Connors, John D.: *See*—
Moore, William C., and Connors.

Conrath, Jules R., to Bell Telephone Laboratories, Inc. Noise suppression circuit for magnetic core matrix. 3,374,474, 3–19–68, Cl. 340—174.

Continental Can Co., Inc.: *See*—
Voigtman, Walter S., Sr., and Long.

Continental Transport Appliances Ltd.: *See*—
Dorey, George B.

Controls Co. of America: *See*—
McCarty, Lourdes V.

Cook, Clarence G., to General Electric Co. Metal vapor lamp coating.

Cook, Jerome M., to Grumman Aircraft Engineering Corp. Acceleration sensitive coupling.

Cooke, Arthur B.: *See*—
Rauen, Theodore J., Myers, and Cooke.

Cooke, Claude E., Jr., to Esso Production Research Co. Microemulsion oil recovery process.

Cooper, Douglas E., to Ethyl Corp. Copper oxide-alumina catalyst composition.

Cooper, Ralph F.: *See*—
Porter, Donald K., Eckenwiler, Barns, Cooper, and Head.

Cooprider, Clyde E. Sharpening fixture for twist drills.

Copeland, John W. Time, speed and distance computer.

Cornell Aeronautical Laboratory, Inc.: *See*—
Bellman, John L.

Corning Glass Works: *See*—
Smith, Terry P.
Wisner, William R.

Cornish, Judson E. Mnemonic teaching system.

Corriher, Henry A., Jr., and L. M. Mason. Fire kindling devices.

Cort, Ambrose, Jr.: *See*—
Catlin, Everett A., and Cort.

Cory Corp.: *See*—
Eisendrath, David C.
Eisendrath, David C.

Costes, Didier, to Commissariat a l'Energie Atomique. Safety system for pressure tube reactors.

Cotton, James F., to West Point-Pepperell, Inc. Process for the treatment of textiles with aminoplasts.

Courant, Ernsest D., to United States of America, Atomic Energy Commission. Acceleration of heavy particles.

Covey, William C.: *See*—
Harrington, Robert W., Covey, and McArthur.

Cowan, John V. Electroacoustic transducers.

Cowdery, James R.: *See*—
Lindgren, George C., and Cowdery.

Cox, Robert C. Foldable container.

Cox, Shaun M., to National Research Development Corp. Method of making film resistors.

Cox, Thomas L.: *See*—
Balentine, George H., Jr., Johnson, and Cox.

Crago, Richard A., to Union Carbide Corp. Ferroalloy casting process.

Craig, Carroll C. Film holder.

Craig, Robert G., L. Friedman, and W. A. Schwartz, to Air Products and Chemicals, Inc. Preparation of motor fuels having an octane number above 100.

Crampton, Charles P., to The Hamilton Tool Co. Batch delivery mechanism.

Crane, Walton B., to Allied Plastics Co. Shipping container.

Creed, Sherman H.: *See*—
Anderson, Gerald R., Creed, and Parker.

Critchley, Stuart W., and F. Lamb, to Geigy Chemical Corp. Lubricant compositions containing 2,4,6-tri-amino-substituted pyrimidines.

Crockett, Joseph G., and R. C. Belcer, ½ to XTRA, Inc., and ½ to Dorsey Trailers, Inc. Coupleable chassis.

Cronquist, Donald H., and J. E. Shepard, to International Business Machines Corp. Stepping motor positioning system including acceleration and deceleration control.

Cross, Alexander D., to Syntex Corp. 17-(aliphatic hydrocarbonoxy) and 17-(substituted aliphatic hydrocarbonoxy) estrane derivatives.

Crow, Lawrence J.: *See*—
White, Courtney W., and Crow.

Crowell, Philip L., to S. C. Johnson & Son, Inc. Actuator cap with frangible guard.

Crown Zellerbach Corp.: *See*—
Metz, Peter J., Jr.

Cruz, Calvin J., to E. I. du Pont de Nemours and Co. Crepe fabric of polyester yarns.

Csicsery, Sigmund M., to Chevron Research Co. Production of alkylated benzenes from paraffins.

Cubberly, Walter E., Jr., and D. F. Saurenman, to Schlumberger Technology Corp. Apparatus for selectively releasing cable-suspended well tools.

Cummins, Stewart E. Bistable optically read ferroelectric memory device.

Cunningham, William J., and C. Woolf, to Allied Chemical Corp. Fluoro compounds and synthesis thereof.

Curtis, David T. Device for moving injured persons.

Curtiss-Wright Corp.: *See*—
Loprete, Joseph F., Flanzenbaum, and Campbell.

Cusic, John W., and P. Yonan, to G. D. Searle & Co. Hydrazones of 1-amino-4-(xanthenyl and thioxanthenyl)piperazines.

Cuykendall, Trevor R.: *See*—
Parratt, Lyman G., Cuykendall, Greisen, Finlayson, and Reines.

Cypher, James H., to Pittsburgh Plate Glass Co. Method of press bending glass sheets between cold opposed shaping molds.

DBA: *See*—
Dugay, Pierre H.

Dadian, Lazarus H.: *See*—
Klessig, Ernst F., and Dadian.

Dahl, Walter L., and J. S. Martin, to Remington Arms Co., Inc. Carrier latch retainer for autoloading firearms.

Dahlberg Electronics, Inc.: *See*—
Martin, Richard T.

Daimler-Benz Aktiengesellschaft: *See*—
Brockmann, Heinz.
Helmer, Josef A.
Holland, Gerhard, and Kienle.

Daitch, Maurice L. Coat hanger coupler and assembly.

Dalto-Electronics Corp.: *See*—
Davidoff, Dorsey.

Dalton, Gerald, 50% to R. F. Wilson. Paint roller cleaning apparatus.

Daly, Donald H., to Maul Bros., Inc. Apparatus for molding glass.

Damon Engineering, Inc.: *See*—
Hurtig, Carl R.

Danon, David, to Yeda Research and Development Co. Ltd. Method and apparatus for controlled deposition of a thin conductive layer.

Davidoff, Dorsey, to Dalto-Electronics Corp. Aircraft landing lights simulator.

Davis, Claude E., 10% to C. Mason, and 10% to W. R. Graham. Method of producing a prepared quick-igniting charcoal fuel.

Davis, Golden C. Carrier for disk records.

Davis, Mitchell, and M. L. Sowers, to Philco Ford Corp. Semiconductive device and method of fabricating the same.

Davis, Orvis A., Sr., to Gulf Research & Development Co. Nozzle.

Davis, Paul, to Sweetheart Plastics, Inc. Container lid.

Davis, Robert H., to Mobil Oil Corp. Aqueous lubricant compositions containing an alkanolamine, a saturated organic acid and a polyoxyalkylene glycol.

Dayco Corp.: *See*—
Henderson, Dewey D.

De Castiglione, Roberto: *See*—
Bernardi, Luigi, Bosisio, de Castiglione, and Goffredo.

Deere & Co.: *See*—
Hansen, Harold V., and McCumber.
Hubbard, Arthur L.
Myers, Glenn L., and Lawrence.

Deffner, John F., to Gulf Research & Development Co. Gasoline composition.

De Haart, Inc.: *See*—
De Hart, Edward G., and Allen.

De Hart, Edward G., and M. D. Allen, to De Haart, Inc. Syringe with stirrer.

Deichert, William G., to American Cyanamid Co. Flame retardant polyacrylate resins.

De La Torre, Leroy C.: *See*—
Rabson, William R., Wilson, and De La Torre.

Del Giudice, Frank J., to Hardman Tool and Engineering Co. Aircraft seat.

Dentists' Supply Co., The: *See*—
Saffir, Jacob A.
Saffir, Jacob A.

Derc, Roman, to English Electro-Leo-Marconi Computers Ltd. Data printing apparatus.

De Ridder, Ernst J., to Reynolds Metals Co. Railway car door operating mechanism.

De Shetler, Louis K.: *See*—
Blunden, Donald J., Black, De Shetler, and Gotcher.

Design, Inc.: *See*—
Mack, Julian E., McNutt, and Roesler.

Desmond, Charles F., and R. D. Rumsey, to Houdaille Industries, Inc. Viscous torsional vibration dampers.

De Stevens, George: *See*—
Mizzoni, Renat H., and De Stevens.

De Stevens, George, H. M. Blatter, and R. W. J. Carney, to Ciba Corp. N-aryl pyrimidinium compounds. 3,374,232, 3–18–68, Cl. 260—240.7.

De Wald, Carl : *See*—
Taylor, Craig V. 3,374,049.

Dewey, Clyde G., to General Electric Co. Distance protective relaying. 3,374,399, 3–19–68, Cl. 317—36.

Diamond Crystal Salt Co. : *See*—
Heiss, John F., and Binsley. 3,374,098.

Dickey, Charles R., to Union Carbide Corp. Stabilization of polyoxyalkylene compounds. 3,374,275, 3–19–68, Cl. 260—611.5.

Didier-Werke A.G. : *See*—
Taubmann, Harro, and Boderke. 3,373,981.

Dieterich, Dieter, O. Bayer, W. Himmelmann, and H. Ulrich, to AGFA Aktiengesellschaft. Gelatin-containing photographic layers plasticized with polyurethane. 3,374,095, 3–19–68, Cl. 96—111.

Dietert, Harry W., Co. : *See*—
Dietert, Harry W. 3,373,977.

Dietert, Harry W., to Harry W. Dietert Co. Granular material conditioning apparatus. 3,373,977, 3–19–68, Cl. 259—154.

Dinges, Karl : *See*—
Ott, Karl-Heinz, Schlesmann, Dinges, Glenz, Weber, and Kassack. 3,374,289.

Distillers Co. Ltd., The : *See*—
Barclay, John L., Hadley, and Bethell. 3,374,284.

Dodge, Gerald F., III, and H. D. F. True, Jr., to General Electric Co. Single evaporator, single fan refrigerator including control means. 3,373,576, 3–19–68, Cl. 62—180.

Doerer, Richard P., to Van Dresser Corp. Swaging machine. 3,373,474, 3–19–68, Cl. 29—200.

Doerfler, Roger E., to Hydrasearch Co., Inc. Brake proportioning valves. 3,373,766, 3–19–68, Cl. 137—494.

Dollinger, Robert E. : *See*—
Joy, David S., and Dollinger. 3,374,181.

Domino Sugar Co. : *See*—
Shaw, Hugh H. 3,374,036.

Donges, Ernst : *See*—
Krettler, Albert, and Donges. 3,374,053.

Donkers, Mathias, and E. B. G. Nijhof, to North American Philips Co., Inc. Circuit arrangement for luminous advertising in which the light sources flash up consecutively and are simultaneously extinguished. 3,374,395, 3–19–68, Cl. 315—151.

Donlon, Richard H., and H. Sinko, to General Motors Corp. Independent wheel suspension. 3,374,005, 3–19–68, Cl. 280—124.

Donnally, Bailey L., to Lake Forest College. Process for producing negative helium ions. 3,374,384, 3–19–68, Cl. 313—230.

Dorey, George B., to Continental Transport Appliances Ltd. Selective pneumatic and gravity unloading hopper car. 3,373,884, 3–19–68, Cl. 214—83.18.

Dornberger, Georg, and W. M. Smith, to Western Electric Co. Inc. System for maintaining a motor at a predetermined speed. 3,374,413, 3–19–68, Cl. 318—341.

Dorsey Trailers, Inc. : *See*—
Crockett, Joseph G., and Belcer. 3,374,010.

Douglas, David : *See*—
Rudolph, Ralph H., and Douglas. 3,374,344.

Douglas Plymouth Corp. : *See*—
Rudolph, Ralph H., and Douglas. 3,374,344.

Dover Corp. : *See*—
Brunson, Virgil A. 3,373,689.

Dow Chemical Co., The : *See*—
Eilers, Louis H., Smith, and Lyons. 3,373,814.
Engles, Earl F., Park, and Shmidt. 3,374,301.
Marinak, Michael J., and Fujioka. 3,374,212.
Ross, Hardy E., and Finster. 3,374,199.
Soderquist, Frederick J., Boyce, and Duris. 3,374,282.
Stewart, Richard D. 3,373,876.

Dowd, Leo J. Self-propelled irrigation system of the reciprocable cable type with mobile supports actuated by propelling shoes. 3,373,939, 3–19–68, Cl. 239—177.

Dowty Mining Equipment Ltd. : *See*—
Bick, David E., and Little. 3,373,699.

Driam A.G. : *See*—
Sengel, Kurt. 3,373,586.

Driscoll, John S., and C. N. Matthews, to Monsanto Research Corp. Complex phosphorus salts. 3,374,256, 3–19–68, Cl. 260—429.9.

Dubesset, Michel, to Societe Anonyme dite ; Ateliers de Construction de Compagne. Automatic transfer mechanism for bottles. 3,373,880, 3–19–68, Cl. 214—1.

Dudman, Roy L., to Schlumberger Well Surveying Corp. Formation pressure-testing apparatus. 3,373,604, 3–19–68, Cl. 73—152.

Dugay, Pierre H., to DBA. Gyroscopic instrument with means for introducing its angular data into a digital computer. 3,373,616, 3–19–68, Cl. 74—5.6.

Dully, Floyd I., to General Motors Corp. Sunshade support assembly. 3,374,031, 3–19–68, Cl. 296—97.

Duncan, Lloyd P., to Zero Mfg. Co. Milking unit and process. 3,373,720, 3–19–68, Cl. 119—14.02.

Dundee Cement Co. : *See*—
Ostberg, Werner, and Challis. 3,373,883.

Dunkelis, Evalds, to GPE Controls, Inc. Floating hinged cover. 3,373,893, 3–19–68, Cl. 220—38.

Dunlop Rubber Co. Ltd. : *See*—
Gough, Vernon E. 3,374,131.

Dunnam, Thomas R. Pipe tongs. 3,373,638, 3–19–68, Cl. 81—57.

Dunnington, Jon B., and D. K. Babbit, to Weyerhaeuser Co. Eave venting system utilizing a ventilated fascia member. 3,373,676, 3–19–68, Cl. 98—37.

Dunsmore, James M., and H. C. Reimschussel, to Libbey-Owens-Ford Glass Co. Locator device. 3,374,140, 3–19–68, Cl. 156—580.

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Elsendrath, David C., to Cory Corp. Control responsive to variations in liquid levels. 3,374,326, 3–19–68, Cl. 200—84.

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Prasil, Vladimir. 3,373,947.

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Erlandson, Otto D., and B. F. Judson, to General Electric Co. Irradiated fuel reprocessing. 3,374,068, 3–19–68, Cl. 23—326.

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Giberson, John W., to E. I. du Pont de Nemours and Co. Diphenylcarbamyl derivatives of certain azoles. 3,374,241, 3–19–68, Cl. 260—308.
Gies, Paul E., to Houdaille Industries, Inc. Method of coupling shaft to arm to transmit torque and moment which are not coplanar. 3,374,015, 3–19–68, Cl. 287—53.
Giles, Alonzo R., to G. & M. Power Plant Co. Ltd. Power driven pruning saws. 3,373,489, 3–19–68, Cl. 30—167.
Giles, John S., to Phoenix Metal Cap Co., Inc. Pressure sealing jar lid. 3,373,889, 3–19–68, Cl. 215—40.
Gillette Co., The: *See*—
Laden, Karl. 3,374,097.
Lowry, Alan B. 3,373,904.
Gillis, John A., and R. W. Hayes, to Hunt Mfg. Co. Slow-drying latex paints comprising urea-polyol solutions. 3,374,-196, 3–19–68, Cl. 260—29.6.
Gillono, Matteo, and P. Alberto. Automatic apparatus for binding broken yarns on spinning machines. 3,373,551, 3–19–68, Cl. 57—34.
Girling Ltd.: *See*—
Farr, Glyn P. R. 3,373,849.
Gladwin, Harold S., Jr. Sound reproduction system. 3,374,-315, 3–19–68, Cl. 179—1.
Glass, Eugene D., and C. J. Russell, Jr., to Cities Service Oil Co. Heavy oil recovery. 3,373,804, 3–19–68, Cl. 166—2.
Glasson, William J.: *See*—
Thompson, William H., and Glasson. 3,373,612.
Glenz, Oskar: *See*—
Ott, Karl-Heinz, Schlesmann, Dinges, Glenz, Weber, and Kassack. 3,374,289.
Gleve, Frank J.: *See*—
O'Brien, Jeremiah W., Gleve, and Lamport. 3,373,591.
Goehring, Henry G., Jr., to Union Carbide Corp. Process for making strontium-bearing ferrosilicon. 3,374,086, 3–19–68, Cl. 75—10.
Goffredo, Onofrio: *See*—
Bernardi, Luigi, Bosisio, de Castiglione, and Goffredo. 3,374,-18.
Goldcraft Inc.: *See*—
Thompson, William H., and Glasson. 3,373,612.
Goldsmith, Norman, to Radio Corp. of America. Method of forming a PN junction by vaporization. 3,374,125, 3–19–68, Cl. 148—189.
Goldstein, Herman B., R. V. Kusiak, R. J. Peltier, and G. Sprenger, to Sun Chemical Corp. Water repellent compositions. 3,374,100, 3–19–68, Cl. 106—2.
Gomery, Michael: *See*—
Brothman, Abraham, Horowitz, Gomery, and Yanis. 3,374,464.
Goodman, Robert. Vertically adjustable bed. 3,373,453, 3–19–68, Cl. 5—63.
Goodrich, B. F., Co., The: *See*—
Bialkowski, Ludwik S. 3 373 998
Porter, Donald K., Eckenwiler, Barns, Cooper, and Head. 3,374,138.

Goodrich, George W., to The Bendix Corp. Apparatus for suppression of ion feedback in electron multipliers. 3,374,380, 3–19–68, Cl. 313—104.
Goodyear Tire & Rubber Co., The: *See*—
Wiener, Maria V. 3,374,114.
Wiener, Maria V. 3,374,137.
Wiener, Maria V. 3,374,201.
Gorenflo, Raymond J.: *See*—
Feeney, Francis, and Gorenflo. 3,373,578.
Gorka, Andrew J., to United States of America, Atomic Energy Commission. Fast vertical stroke moving coil transducer. 3,374,409, 3–19–68, Cl. 318—122.
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Larsen, Charles A. 3,373,658.
Gotcher, Eugene D.: *See*—
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Gough, Vernon E., to Dunlop Rubber Co. Ltd. Method of building a pneumatic tire. 3,374,131, 3–19–68, Cl. 156—133.
Goulart, Harold S.: *See*—
Rabin, Herbert, and Goulart. 3,374,050.
Gourdon, Bernard, to Societe Nationale des Petroles d'Aquitaine. Polycondensing a diene with polythioformaldehyde. 3,374,206, 3–19–68, Cl. 260—73.
Grace, W. R., & Co.: *See*—
Maher, Philip K., and McDaniel. 3,374,056.
McDaniel, Carl V., and Maher. 3,374,056.
McDaniel, Carl V., Maher, and Waxter. 3,374,058.
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Davis, Claude E. 3,374,070.
Grange, Howard L. Layout device. 3,373,495, 3–19–68, Cl. 33—76.
Green, J. W., Co.: *See*—
Lindgren, George C., and Cowdery. 3,373,860.
Green, Walter F.: *See*—
Rundt, John W., and Green. 3,373,584.
Greenberg, Yale J., to Keystone Camera Co., Inc. Reel drive arrangements. 3,373,950, 3–19–68, Cl. 242—55.13.
Greenlee, Sylvan O., to Ciba Ltd. Polyepoxide products of reduced odor cured with sulfur containing polyacid compounds after treated with formaldehyde. 3,374,287, 3–19–68, Cl. 260—836.
Grefco, Inc.: *See*—
Muller, N. William, and Tarbell. 3,374,210.
Grey, C. F., to Esso Research and Engineering Co. Production of iron. 3,374,087, 3–19–68, Cl. 75—26.
Griffin, Noel J., to Avco Corp. Bias control circuit. 3,374,442, 3–19–68, Cl. 330—40.
Gross, Paul M.: *See*—
Pitzer, Kenneth H. 3,373,648.
Grosswald, Sidney. Guide for portable saws. 3,373,781, 3–19–68, Cl. 143—167.
Grove, Aaron M. Fishing reel construction. 3,373,953, 3–19–68, Cl. 242—104.
Groves, James A. Hitch construction. 3,374,268, 3–19–68, Cl. 280—512.
Grumman Aircraft Engineering Corp.: *See*—
Cook, Jerome M. 3,374,375.
Gubbay, Jacob D., R. H. Stricker, and H. Wittler, to The Singer Co. Sewing machine throat plate locating and securing means. 3,373,709, 3–19–68, Cl. 112—260.
Guidi, Guido N. G. Multipurpose wind instrument. 3,373,606, 3–19–68, Cl. 73—189.
Guienne, Paul, to Bertin & Cie. Feed system for multiple air cushion type platforms. 3,373,837, 3–19–68, Cl. 180—118.
Guin, Joel B. Open water missile and cargo launching systems. 3,373,657, 3–19–68, Cl. 89—1.81.
Guin, Joel B. Air vibration drill. 3,373,825, 3–19–68, Cl. 173—59.
Gulette, Ronald S., to General Motors Corp. Latch operating assembly. 3,374,021, 3–19–68, Cl. 242—336.3.
Gulf General Atomic Inc.: *See*—
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Stone, Virgil D. 3,373,806.
Gulf Research & Development Co.: *See*—
Burtch, Fred W. 3,373,811.
Carr, Norman L., and Peterson. 3,374,280.
Davis, Orvis A., Sr. 3,373,941.
Deffner, John F. 3,374,072.
Franke, Norman W., and Martini. 3,374,290.
Hay, Russell G., Hazen, and Heilman. 3,374,209.
Hedenburg, John F., and Tempalski. 3,374,170.
Henke, Alfred M., and Sebulsky. 3,374,285.
Jennings, James W., and Mulrhead. 3,373,813.
Smith, Francis M. 3,373,812.
Gutting, Robert D., to The Home-O-Nize Co. Remote control device. 3,373,623, 3–19–68, Cl. 74—388.
Gutting, Robert D., to The Home-O-Nize Co. Remote control apparatus. 3,373,624, 3–19–68, Cl. 74—388.
HC Electronics, Inc.: *See*—
Holden, Ruth J. and S. D. 3,373,508.
HRC Development, Inc.: *See*—
Reddington, George A. 3,373,775.
Haas, Carroll J., to Research Moulding, Inc. Conduit insulating spacer. 3,374,308, 3–19–68, Cl. 174—138.
Haas, Ronald H., to Borg-Warner Corp. Fluid drive mechanism. 3,373,660, 3–19–68, Cl. 91—278.
Habhab, Albert: *See*—
Eatinger, Cloyde B., and Habhab. 3,373,835.
Hacha, Thomas H.: *See*—
Lord, Albert M., and Hacha. 3,374,158.
Hadley, David J.: *See*—
Barclay, John L., Hadley, and Bethell. 3,374,284.
Hadni, Armand, to CSF-Compagnie Generale de Telegraphie Sans Fil. Camera tube for infrared television having ferroelectric strip for receiving radiation. 3,374,392, 3–19–68, Cl. 315—21.
Haeussler, Alfred H. K.: *See*—
Moeller, Gerd M., and Haeussler. 3,373,596.
Hague, Robert L., H. H. Laucks, and Treff, to Moog, Inc. Positioner. 3,373,768, 3–19–68, Cl. 137—556.
Haines, Clifford L. Carton holder and container. 3,373,897, 3–19–68, Cl. 220—85.
Haivala, William S. Step tool. 3,373,458, 3–19–68, Cl. 15—235.7.
Hajma, Louis G.: *See*—
Schmiel, Herbert H., and Hajma. 3,373,843.
Halcon International Inc.: *See*—
Nagtieri, Anthony N. 3,374,153.
Hall, Robert D., and S. M. Krakauer, to Hewlett-Packard Co. Impulse circuit including a step-recovery diode. 3,374,-416, 3–19–68, Cl. 321—69.
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Bell, Gordon M., and Hallay. 3,374,396.
Halperin, Jack S. Changeable billboard sign. 3,373,517, 3–19–68, Cl. 40—65.
Hamilton, Robert W., to G. D. Searle & Co. N-amino-17α-aza-D-homoandrost-5-en-3β-ol and hydrazones thereof. 3,374,-233, 3–19–68, Cl. 260—240.
Hamilton Tool Co., The: *See*—
Crampton, Charles P. 3,373,666.
Hammer, Bert R.: *See*—
Larkam, Charles W., English, Hammer, Block, and Collins. 3,374,403.
Hammond, Russell B. Continuous forge furnace. 3,373,979, 3–19–68, Cl. 263—6.
Hanf, William P., and K. K. Womack, to International Business Machines Corp. Data processing system. 3,374,466, 3–19–68, Cl. 340—172.5.
Hanlein, Walter, W. Rieger, and M. Maier, to Siemens Aktiengesellschaft. Method and heat exchanger for preheating the combustion air of magnetohydrodynamic generators. 3,374,-371, 3–19–68, Cl. 310—11.
Hansen, Harold V., and V. R. McCumber, to Deere & Co. Planter. 3,373,705, 3–19–68, Cl. 111—73.
Hardman Inc.: *See*—
Hardman, Kenneth V., and Anderson. 3,373,903.
Hardman, Kenneth V., and A. J. Anderson, to Hardman Inc. Self-purging mixing and dispensing apparatus. 3,373,903, 3–19–68, Cl. 222—142.
Hardman Tool and Engineering Co.: *See*—
Del Giudice, Frank J. 3,374,032.
Hardy, Derek J., and L. A. H. Riddle, to Westland Aircraft Ltd. Ground effect vehicles with extensible base area. 3,373,-839, 3–19–68, Cl. 180—128.
Hare, David G., and R. J. Stephenson, to Monsanto Chemicals Ltd. Flame retardant compositions prepared from halogenated 1,2-monoepoxycyclododeca-5,9-diene and adducts thereof. 3,374,187, 3–19–68, Cl. 260—2.5.
Harner, Kermit I., to United Aircraft Corp. Viscosity independent hydraulic flow regulator. 3,373,848, 3–19–68, Cl. 188—97.
Harrington, Robert W., W. C. Covey, and G. McArthur, Jr., to Sunray Stove Co. Oven door hinge. 3,373,733, 3–19–68, Cl. 126—191.
Harris, Foster E. Combined spike and anchor member and manufacture thereof. 3,373,595, 3–19–68, Cl. 72—403.
Harrison, Richard I., and J. Zucker, to General Telephone and Electronics Lab., Inc. Microwave power detector utilizing diffusion of hot carriers in a semiconductor. 3,374,433, 3–19–68, Cl. 324—106.
Harrop Precision Furnace Co. a division of Harrop Ceramic Service Co.: *See*—
Schoenlaub, Robert A. 3,373,607.
Harsco Corp.: *See*—
Nesslinger, Fritz J., and Borgman. 3,373,887.
Hart, Sterling L. Small boat restrainers. 3,373,714, 3–19–68, Cl. 114—230.
Hartje, Robert A. Transportation system. 3,373,697, 3–19–68, Cl. 104—23.
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Hawkins, Cyril M., to General Motors Corp. Safety coupling. 3,373,852, 3–19–68, Cl. 192—48.5.
Hawley, Richard A., to Meat Packers Equipment Co. Food mold loader. 3,373,777, 3–19–68, Cl. 141—263.
Hay, Russell G., S. M. Hazen, and W. J. Heilman, to Gulf Research & Development Co. Thermosettable compositions containing polyanhydride and mono-oxirane compounds and process of making. 3,374,209, 3–19–68, Cl. 260—78.4.
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Maybin, Joseph F. 3,373,564.
Hayes, Ronald W.: *See*—
Gillis, John A., and Hayes. 3,374,196.
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Trelfa, Gerald J., and Haynie. 3,373,533.
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Hay, Russell G., Hazen, and Heilman. 3,374,209.
Head, Earl L., to United States of America, Atomic Energy Commission. Preparation of metal carbonates by CO₂-pressurizing anhydrous metal acetates. 3,374,069, 3–19–68, Cl. 23—345.
Head, Walter E.: *See*—
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Heald, Carl F., to Heath Co. Squelch system for radio receivers. 3,374,437, 3–19–68, Cl. 325—478.
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Heald, Carl F. 3,374,437.
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Raschle, Josef. 3,373,554.

Heckles, John, and C. D. Mitchell, to Armstrong Cork Co. Phenylacetonitrile oximes. 3,374,250, 3–19–68, Cl. 260—396.

Hedenburg, John F., and C. S. Tempalski, to Gulf Reasearch & Development Co. Grease composition. 3,374,170, 3–19–68, Cl. 252—28.

Hedrick, Glen W.: *See*—
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Hehl, Karl, to Arburg Maschinenfabrik Hel & Sohne. Injection molding machine. 3,373,459, 3–19–68, Cl. 18—30.

Heilman, William J.: *See*—
Hay, Russell G., Hazen, and Heilman. 3,374,209.

Heim, Hans, to Schweizerische Industries- Gesellschaft. Apparatus for manufacturing packing containers. 3,373,663, 3–19–68, Cl. 93—44.1.

Hein, Frank J., to TRW, Inc. Gating of unshrouded airfoils to permit directional solidification. 3,373,795, 3–19–68, Cl. 164—359.

Heiss, John F., and G. E. Binsley, to Diamond Crystal Salt Co. Flake salt made free flowing by applying propylene glycol to the salt particle surfaces. 3,374,098, 3–19–68, Cl. 99—143.

Heiss, Rudolf, K. Mannes, H. Pelster, G. Unterstenhofer, and W. Behrens, to Farbenfabriken Bayer Aktiengesellschaft. Phosphoric, phosphonic, phosphinic, thionophosphoric-phosphonic, phosphinic acid esters. 3,374,293, 3–19–67, Cl. 260—949.

Heil, Dr.-Ing. Rudolf, Kommanditgesellschaft: *See*—
Heil, Rudolf. 3,374,311.

Heil, Rudolf, to Dr. Ing. Rudolf Heil, Kommanditgesellschaft. Producing printing blocks, preferably intaglio printing blocks. 3,374,311, 3–19–68, Cl. 178—6.6.

Hellige, Fritz & Co. G.m.b.H.: *See*—
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Helmer, Josef A., to Daimler-Benz Aktiengesellschaft. Parking lock mechanism for vehicles, especially motor vehicles. 3,373,850, 3–19–68, Cl. 192—4.

Helmerich & Payne, Inc.: *See*—
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Hemmenway, Stuart F., to General Electric Co. SCR power supply regulator triggered by magnetic amplifiers. 3,374,423, 3–19–68, Cl. 323—22.

Henderson, Dewey D., to Dacyo Corp. Method for measuring belt sections. 3,374,297, 3–19–68, Cl. 264—40.

Henderson, Robert M., and R. Zechlin, to Fairbanks Morse Inc. Alternating current voltage regulator including system no-load to full-load compensating means. 3,374,418, 3–19–68, Cl. 322—28.

Hendry, James W., to Borg-Warner Corp. Pre-heater with vertically flowing air stream. 3,373,502, 3–19–68, Cl. 34—10.

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Henke, Alfred M., and R. T. Sebulsky, to Gulf Research & Development Co. Process for the polymerization of propylene. 3,374,285, 3–19–68, Cl. 260—683.15.

Henry-Biabaud, Edmond, to Societe Anonyme Andre Citroen. Servo-steering systems for automobile vehicles. 3,373,631, 3–19–68, Cl. 74—495.

Henschel, Leonard: *See*—
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Hercules Inc.: *See*—
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Hermann, Otto, to The R. K. Le Blond Machine Tool Co. Chuck construction. 3,373,641, 3–19–68, Cl. 82—40.

Herrick, Roger A., to United States of America, Navy. Missile separation connector. 3,374,457, 3–19–68, Cl. 339—45.

Herrington, Sanford W. Pipe vise. 3,373,987, 3–19–68, Cl. 269—273.

Herubel, Jean F., to N. Schlumberger & Cie Combing machine for long textile fibers. 3,373,462, 3–19–68, Cl. 19—230.

Herweh, John E., and A. C. Poshkus, to Armstrong Cork Co. 2,4,6-trisubstituted sulfonylhydrazido-s-triazines as blowing agents for high molecular weight organic polymers. 3,374,189, 3–19–68, Cl. 260—2.5.

Herweh, John E., and A. C. Poshkus, to Armstrong Cork Co. 2,4,6 - triaryl sulfonylhydrazido - s - triazines as blowing agents for high molecular weight organic polymers. 3,374,190, 3–19–68, Cl. 260—2.5.

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Heurtebise, Byron T., to General Motors Corp. Steering column assembly. 3,373,630, 3–19–68, Cl. 74—492.

Hewitt, Woodrow W.: *See*—
Seress, George, and Hewitt. 3,374,118.

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Heykoop, Adolf, and F. A. Van Dijk, to Shell Oil Co. Hydrogenation of mesityl oxide. 3,374,272, 3–19–68, Cl. 260—593.

Hickey, John J., to TRW Inc. Positive ramp voltage generator. 3,374,439, 3–19–68, Cl. 328—183.

Hicks, Darrell D., to Celanese Coatings Co. Polymeric polyhydroxy-polyether resins and method of making same. 3,374,286, 3–19–68, Cl. 260—834.

Hidding, Walter E.: *See*—
Lombardo, Vincent A., and Kopis. 3,373,476.

Higginbottom, George S., to United States of America, Navy. Heat test apparatus. 3,373,599, 3–19–68, Cl. 73—15.

Hilgert, Adolph J., to Johnson Service Co. Fluid system and a restrictor therefor. 3,373,772, 3–19–68, Cl. 138—43.

Hill, Harvey J., and N. Giandomenico, to Roberts Consolidated Industries, Inc. Knee-actuable carpet stretcher with adjustable-length shank. 3,374,023, 3–19–68, Cl. 294—8.6.

Hill, James T., D. R. Ingenito, F. Leonard, and P. M. Margetis, to United States of America, Army. Plastic splint. 3,373,741, 3–19–68, Cl. 128—90.

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Hindman, Robert G., to Esso Production Research Co. Method and apparatus for installing underwater pipeline. 3,373,570, 3–19–68, Cl. 61—72.3.

Hindman, Robert G., and J. J. Bardgette, to Esso Production Research Co. Apparatus for use with offshore marine structures. 3,373,713, 3–19–68, Cl. 114—220.

Hirose, Masahiro: *See*—
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Hirose, You. Electric lamp stand. 3,374,347, 3–19–68, Cl. 240—52.

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Kawai, Yoshinori, Kiwaki, and Sato. 3,374,440.
Majima, Hideyasu. 3,374,358.
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Reeder, Earl, Stempel, and Sternbach. 3,374,225.
Uskokovic, Milan R., and Wenner. 3,374,264.

Hogsett, John N., to Union Carbide Corp. Process of supplying hydrogen to a fuel cell with borohydride adduct. 3,374,121. 3–19–68, Cl. 136—86.

Holbrook, Franklin K., to Brown International Corp. Fruit cutting and feeding apparatus. 3,373,784, 3–19–68, Cl. 146—3.

Holden, Kenneth G., and J. F. Kerwin, to Smith Kline & French Laboratories. B-norsteroidal pyrazoles. 3,374,243, 3–19–68, Cl. 260—310.

Holden, Ruth J. and S. D., to HC Electronics, Inc. Teaching apparatus. 3,373,508, 3–19–68, Cl. 35—35.

Holden, Scott D.: *See*—
Holden, Ruth J., and S. D. 3,373,508.

Holland, Gerhard, and G. Kienle, to Daimler-Benz Aktiengesellschaft. Measuring tape for strain gauge. 3,374,454, 3–19–68, Cl. 338—2.

Holleran, Charles R.: *See*—
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Hollins, Jesse R. Dispenser for pressure sensitive tape. 3,373,865. 3–19–68, Cl. 206—52.

Holton, Robert J., to Tinnerman Products, Inc. Reversible self-threading nut. 3,373,645, 3–19–68, Cl. 85—32.

Holtschmidt, Hans: *See*—
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Home-O-Nize Co., The: *See*—
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Gutting, Robert D. 3,373,624.

Honeywell, Inc.: *See*—
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Petersen, John F. 3,373,959.

Hood, Robert L., to Barnes Engineering Co. Infrared radiometer scanning device with predetermined scan path means. 3,374,354, 3–19–68, Cl. 250—83.3.

Hooker Chemical Corp.: *See*—
Cherbuliez, Emile, and Rabinowitz. 3,374,294.

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Ottmann, Gerhard F., and Hooks. 3,374,240.

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Horn, Richard A., and H. I. Cole to Sanders Associates, Inc. Magnetic circuit protective device. 3,374,398, 3–19–68, Cl. 317—9.

Hornbostel, Lloyd, Jr. System for reclamation of land. 3,373,568, 3–19–68, Cl. 61—5.

Horning, William H.: *See*—
Cast, James N., Horning, and Twiss. 3,374,467.

Hornung, Michael C. Agricultural earth working implement. 3,373,822. 3–19–68, Cl. 172—311.

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Hosoda, Hiroshi: *See*—
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Houdaille Industries, Inc.: *See*—
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Howard, Charles L., to General Electric Co. Pumps. 3,373,688, 3–19–68, Cl. 103—3.

Howard, James Y., to General Signal Corp. Brake control systems for multiple unit trains. 3,374,035, 3–19–68, Cl. 303—20.

Hoye, Peter A. T.: *See*—
Coates, Harold, and Hoye. 3,374,278.

Hrdina, Jiří, to Ceskoslovenska akademie ved. Apparatus for carrying out a rapid chromatography of amino acid and similar mixtures. 3,373,872, 3–19–68, Cl. 210—198.

Hubbard, Arthur L., to Deere & Co. Cotton picker. 3,373,547, 3–19–68, Cl. 56—44.

Huber, Raymond E., to United States of America, Navy. Traveling wave tube having tapered grooves and shims for improved thermal contact between metal envelope, support rods and slow wave helix. 3,374,388, 3–19–68, Cl. 315—3.5.

Huether, Calvin J. Separating sieves for combines. 3,373,871, 3–19–68, Cl. 209—284.

Huffman, Jerry P.: *See*—
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Hughes Aircraft Co.: *See*—
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Richmond, Richard C., Pariser, and Connolly. 3,374,405.

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Hurtig, Carl R., to Damon Engineering, Inc. High efficiency contiguous comb filter. 3,374,448, 3–19–68, Cl. 333—72.

Huska, Paul. Pitch and yaw actuator assembly for vehicle guidance surfaces. 3,373,955, 3–19–68, Cl. 244—3.21.

Huslin, Theodore J.: *See*—
Adams, Robert B., and Huslin. 3,373,760.

Hutchins, Ross E. Photographic illuminating device. 3,374,342, 3–19–68, Cl. 240—1.3.

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Jakob, Franz to Agfa-Gevaert Aktiengesellschaft. Camera for daylight and flash photography. 3,373,671, 3–19–68, Cl. 95—11.

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Junge, Albert E., and J. Chabal, to Pittsburgh Plate Glass Co. Etching process for producing a non-reflective surface on float glass. 3,374,141, 3–19–68, Cl. 161—1.

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Krikorian, Garo, to Rice Barton Corp. Apparatus for screening pulp. 3,373,875, 3–19–68, Cl. 210—305.

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Langer, Franz, to Sandoz Ltd. (also known as Sandoz A.G.). Process of producing 3,5-diiodothyronines. 3,374,269, 3–19–68, Cl. 260—519.

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Lattimer, Charles T., to Radio Corp. of America. Electron tube cathode with nickel-tungsten alloy base and thin nickel coating. 3,374,385, 3–19–68, Cl. 313—337.

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Le Febvre, Bernard J. : *See*—
Wendt, John A., and Le Febvre. 3,373,602.

Legler, Ernst, to Fernseh G.m.b.H. Circuit arrangement for mixing signals. 3,374,119, 3–19–68, Cl. 178—7.1.

Leiter, Leigh D. : *See*—
Linda, Frank R., and Leiter. 3,373,924.

Lemen, William T., to General Motors Corp. Electronic ignition system. 3,373,729, 3–19–68, Cl. 123—148.

Lemin, Alan J., to The Upjohn Co. Herbicidal methods and compositions comprising 2-amino and lower alkanoamido-5-halothiazoles. 3,374,082, 3–19–68, Cl. 71—90.

Lendaro, Ernesto. Pneumatically actuated shears with two controls. 3,373,490, 3–19–68, Cl. 30—228.

Leonard, Fred : *See*—
Hill, James T., Ingenito, Leonard, and Margetis. 3,373,-741.

Leonhardt, Günter : *See*—
Brockhaus, Gerhard, Leonhardt, and Weber. 3,374,331.

Leopold Co., The : *See*—
Lewin, Otto. 3,374,043.

Lerner, Theodore : *See*—
Russell, Charles W., and Lerner. 3,374,480.

Lessard, Alcide. Automobile rain visor. 3,373,792, 3–19–68, Cl. 160—368.

Le Suer, William M., to The Lubrizol Corp. Composition. 3,374,174, 3–19–68, Cl. 252—51.5.

Lewin, Otto, to The Leopo d Co. Lever controlled component locking and moving arrangement for cabinets. 3,374,043, 3–19–68, Cl. 312—219.

Lewis, Gerald F. Height gages. 3,373,497, 3–19–68, Cl. 33—170.

Lewis, Samuel. One-wheeled roller skate. 3,374,002, 3–19–68, Cl. 280—11.24.

Libbey-Owens-Ford Glass Co. : *See*—
Dunsmore, James M., and Reimschussel. 3,374,140.
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Liebmann, Jack S : *See*—
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Possinger, Wilmer R., and Myers. 3,374,006.

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Linda, Frank R., and L. D. Leiter, to International Paper Co. Container handle. 3,373,924, 3–19–68, Cl. 229—52.

Lindgren, George C., and J. R. Cowdery, to J. W. Greer Co. Conveyor system. 3,373,860, 3–19–68, Cl. 198—34.

Lingenfelter, Allen C., to The International Nickel Co., Inc. Bright annealing of tubular metal articles. 3,374,126, 3–19–68, Cl. 148—20.3.

Linguenheld, Louis, and P. Perras, to Rhone-Poulenc S.A. Preparation of nitrosyl acid sulfate. 3,374,059, 3–19–68, Cl. 23—139.

Link-Belt Co. : *See*—
Suman, Robert W., and Thomsen. 3,373,829.

Lins, Stanley J., and R. D. Morrison, to Sperry Rand Corp. Method of electrically interconnecting conductors. 3,373,-481, 3–19–68, Cl. 29—471.3.

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Steden, Franz, Beer, and Lissner. 3,374,186.

Little, Colin R. : *See*—
Bick, David E., and Little. 3,373,699.

Litton Business Systems, Inc. : *See*—
Lapointe, Lloyd J. 3,373,857.

Litton Precision Products, Inc. : *See*—
Stewart, Robert F. 3,374,450.

Livezey, William G., R. M. Tuck, and M. D. Smith, to General Motors Corp. Vehicle transmission including steering by driving. 3,373,636, 3–19–68, Cl. 74—720.5.

Lloyd, Bonnie C., and C. G. McAlister, to Columbian Carbon Co. Preparation of cyclododecyl hydrogen sulphate and salts of cyclododecyl hydrogen sulphate. 3,374,261, 3–19–68, Cl. 260—457.

Lloyd, Winston D. : *See*—
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Lode, Tenny D., to Rosemount Engineering Co. Electrical resistance standard having an output voltage representative of applied frequency, and of resistivity and permeability of a conducting medium. 3,374,430, 3–19–68, Cl. 324—64.

Lombardo, Vincent A., and F. B. Kopis, to W. E. Hidding. Carton handle assembling machine. 3,373,476, 3–19–68, Cl. 29—208.

Long, Florren E. : *See*—
Voigtman, Walter S., Sr., and Long. 3,373,926.

Long, George B., to General Motors Corp. Suspension system. 3,373,961, 3–19–68, Cl. 248—18.

Lonza Ltd. : *See*—
Volker, Theodor. 3,374,266.

Lopata, Karl-Peter, to John-Kleinewefers Sohne. Safety device, especially for use in connection with the wet squeezing of textiles. 3,373,582, 3–19–68, Cl. 68—264.

Loprete, Joseph F., S. Flanzenbaum, and J. R. Campbell, to Curtiss-Wright Corp. Variable area exhaust nozzle. 3,373,-940, 3–19–68, Cl. 239—265.15.

Lord, Albert M., and T. H. Hacha, to TRW Inc. High pressure electrolysis system and process for hydrogen-oxygen generation. 3,374,158, 3–19–68, Cl. 204—129.

Loughead, Aaron G. : *See*—
Rothe, Wilhelm E., and Loughead. 3,373,499.

Loughrey, Joseph. Furnace wall repairing device. 3,373,467. 3–19–68, Cl. 25—118.

Loux, Harvey M., to E. I. du Pont de Nemours and Co. Method for the control of undesirable vegetation with 3,5,6-substituted uracils. 3,374,083, 3–19–68, Cl. 71—92.

Loveland, Chester L., to U.S. Textile Machine Co. Yarn twisting apparatus. 3,373,557, 3–19–68, Cl. 57—119.

Lowry, Alan B., to The Gillette Co. Heater for material dispensed from a container. 3,373,904, 3–19–68, Cl. 222—146.

Lowther, Herbert A. Sawmill feed device. 3,373,780, 3–19–68, Cl. 143—105.

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Le Suer, William M. 3,374,174.

Ludeman, Gilbert K. Bicycle exerciser. 3,373,992, 3–19–68, Cl. 272—73.

Luecke, Gerald, to Texas Instruments Inc. Surface-oriented semiconductor diode. 3,374,404, 3–19–68, Cl. 317—234.

Lupintti, Albert A., to United States of America, Army and/or Federal Aviation Agency, Digital target generator test set. 3,374,481, 3–19–68, Cl. 343—17.7.

Lust, Ernst A. Snap-action catch. 3,374,018, 3–19–68, Cl. 292—45.

Lyles, Marvin E., and W. L. Childs, to Beckman Instruments, Inc. Transistorized monostable multivibrator with improved timing and noise rejection. 3,374,365, 3–19–68, Cl. 307—273.

Lyons, Orlin W. : *See*—
Eilers, Louis H., Smith, and Lyons. 3,373,814.

M-C-M Machine Works Inc. : *See*—
Frogge, Ottis W. 3,373,881.

M-O Valve Co., Ltd., The : *See*—
Young, Rodney W. 3,374,382.

MacCormack, Ronald J. Expandable ring binder. 3,373,748, 3–19–68, Cl. 129—1.

Machu, Willibald : *See*—
Schleffman, Louis, and Machu. 3,374,156.

Mack, Julian E., D. P. McNutt, and F. L. Roesler, to Design, Inc. Interferrometric spectrometer utilizing three fabry-perot etalons in series. 3,373,651, 3–19–68, Cl. 88—14.

MacMartin, Malcolm P. : *See*—
Kusters, Norbert L., and MacMartin. 3,373,856.

Macres, Victor G. Electron probe having a specific short-focal length magnetic lens and light microscope. 3,374,-349, 3–19–68, Cl. 250—49.5.

Maddox, Robert E., R. E. Hengstler, and S. G. Benner, to Johns-Manville Corp. Method and apparatus for producing fibrous material. 3,374,075, 3–19–68, Cl. 65—6.

Magnaflux Corp.: *See*—
Wendt, John A., and Le Febvre. 3,373,602.

Maher, Philip K., and C. V. McDaniel, to W. R. Grace & Co. Process for increasing the thermal stability of synthetic faujasite. 3,374,036, 3–19–68, Cl. 23—112.

Maher, Philip K.: *See*—
McDaniel, Carl V., and Maher. 3,374,057.
McDaniel, Carl V., Maher, and Waxter. 3,374,058.

Mahoney, Clarence L.: *See*—
Sax, Karl J., Saari, and Mahoney. 3,374,175.

Maier, Max: *See*—
Hanlein, Walter, Rieger, and Maier. 3,374,371.

Mainil, Jean L. P., to Societe Anonyme Oletta. Pharmaceutical product obtained from plants of the genus holarrhena (apocynaceal). 3,374,252, 3–19–68, Cl. 260—397.3.

Majima, Hideyasu, to Hitachi, Ltd. Light display device employing angularly selective polarizer. 3,374,358, 3–19–68, Cl. 250—213.

Makiri, Uria. Calendar clock or watch. 3,373,538, 3–19–68, Cl. 58—4.

Maltman, Walter W.: *See*—
Wight, Robert D., Maltman, Powell, and Olds. 3,373,629.

Mance, John J., and R. M. Stallard, to General Motors Corp. Dielectric heat and pressure embossed reflector assembly. 3,374,045, 3–19–68, Cl. 350—105.

Mannes, Karl: *See*—
Heiss, Rudolf, Mannes, Pelster, Unterstenhofer, and Behrenz. 3,374,293.

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Manney, Charles J., R. M. Robinson, and D. Molnar, to Columbus McKinnon Corp. Joiner link. 3,373,560, 3–19–68, Cl. 59—85.

Mansson, Magne L.: *See*—
Wiklund, Johan E., and Mansson. 3,373,802.

Mantelet, Jean, to Moulinex, Societe Anonyme. Grippers for handling objects. 3,374,025, 3–19–68, Cl. 294—16.

Mao, Tzu J., to General Motors Corp. Photopolymerization with o-bromoacetophenone as a photoinitiator. 3,374,160, 3–19–68, Cl. 204—159.23.

Marcus, Erich, and J. K. Chan, to Union Carbide Corp. Preparation of 2,4,6-heptanetrione and 2,6-dimethyl-4-pyranone. 3,374,246, 3–19–68, Cl. 260—345.9.

Margetis, Peter M.: *See*—
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Marietta, Michael T. Combination helmet and face mask. 3,373,443, 3–19–68, Cl. 2—9.

Marinak, Michael J., and G. S. Fujioka, to The Dow Chemical Co. Purification of polymerized olefins prepared with catalysts containing vanadium compounds. 3,374,212, 3–19–68, Cl. 260—88.2.

Markgraf, Tony C. Pipe tool. 3,373,477, 3–19–68, Cl. 29—237.

Marotta, Ralph, to Monsanto Co. Process for preparing silica aquasols. 3,374,180, 3–19–68, Cl. 252—313.

Marriott Corp.: *See*—
Spangler, Eugene C. 3,373,783.

Marsh, Frank D., and D. N. Thatcher, to E. I. du Pont de Nemours and Co. Preparation of expanded cellular products. 3,374,188, 3–19–68, Cl. 260—2.5.

Marshall, James C., to United States of America, Atomic Energy Commission. High temperature brazing alloys for tungsten and tantalum and alloys thereof. 3,374,092, 3–19–68, Cl. 75—134.

Martelli, Homer A., to Union Camp Corp. Expandable tray carton. 3,373,923, 3–19–68, Cl. 229—34.

Martin, Eugene E.: *See*—
Charbonnier, Francis M., Martin, and Swanson. 3,374,386.

Martin, James S.: *See*—
Dahl, Walter L., and Martin. 3,373,519.

Martin, Richard T., to Dahlberg Electronics, Inc. Wax guard for hearing aids. 3,374,318, 3–19–68, Cl. 179—184.

Martini, Joseph C.: *See*—
Franke, Norman W., and Martini. 3,374,290.

Maruyama, Takaharu, H. Suzuki, and M. Yamauchi, to Nippon Columbia Kabushikaisha (Nippon Columbia Co., Ltd.). Low second grid voltage electron gun. 3,374,379, 3–19–68, Cl. 313—85.

Marwil, Stanley J., and R. G. Wallace, to Phillips Petroleum Co. Solids recovery from a flowing stream. 3,374,211, 3–19–68, Cl. 260—88.2.

Masalskis, Etienne F., to Ford Motor Co. Friction clutch operator having a linkage system with a variable mechanical advantage. 3,373,854, 3–19–68, Cl. 192—99.

Mason, Collins: *See*—
Davis, Claude E., and Mason. 3,374,070.

Mason, Lawrence M.: *See*—
Corriher, Henry A., Jr., and Mason. 3,374,071.

Massoubre, Jean-Marie, to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie. System for signaling conditions on relatively moving members of a vehicle. 3,374,460, 3–19–68, Cl. 340—58.

Masters, John E., and H. P. Price, to Celanese Coatings Co. Process for preparing high molecular weight polyhydroxypolyether resins. 3,374,204, 3–19–68, Cl. 260—47.

Masumoto, Hakaru, and T. Kobayashi, to The Research Institute of Electric and Magnetic Alloys Foundation. Method of manufacturing non-magnetic, elastic articles having a small change of vibration and deflection for temperature change. 3,374,123, 3–19–68, Cl. 148—11.5.

Mathes, Robert H., and L. C. Ricalzone, to United States of America, Navy. Cathode ray tube overlay including a rotatable disc with a plurality of range scale. 3,374,313, 3–19–68, Cl. 178—7.83.

Matsushita Electric Industrial Co., Ltd.: *See*—
Nitta, Tsuneharu, H. Taki, and K. Nagase. 3,374,185.

Matsuzak, Hiroyuki: *See*—
Tabuchi, Seiichi, Matsuzak, and Tsuboi. 3,374,400.

Matthews, Clifford N.: *See*—
Driscoll, John S., and Matthews. 3,374,256.

Maul Brothers, Inc.: *See*—
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Maurer, George P., and A. E. Phillips, to The Falk Corp. Mounting assembly for shaft mounted gear drive unit. 3,373,626, 3–19–68, Cl. 74—421.

May, John E., and R. L. Stoute, to Atomic Energy of Canada Ltd. Doped hypostoichiometric dioxide nuclear fuel composition and method of preparation. 3,374,178, 3–19–68, Cl. 252—301.1.

Maybin, Joseph F., to Hayes International Corp. Process and apparatus for controlling rocket engines and the like. 3,373,504, 3–19–68, Cl. 60—204.

Maycock, John: *See*—
Swift-Hook, Donald T., Wright, and Maycock. 3,374,368.

Mazoyer, Jean. Drive means for miniature tape recorders. 3,373,951, 3–19–68, Cl. 242—55.13.

McAlister, Charles G.: *See*—
Lloyd, Bonnie C., and McAlister. 3,374,261.

McArthur, George, Jr.: *See*—
Harrington, Robert W., Covey, and McArthur. 3,373,783.

McCabe, James A., to General Dynamics Corp. Radioisotope subliming solid propulsion system. 3,373,563, 3–19–68, Cl. 60—203.

McCarty, Lourdes V., to Controls Co. of America. Electric reset for pneumatic sensor control. 3,373,765, 3–19–68, Cl. 137—489.

McCumber, Virgil R.: *See*—
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McCutchen, Hugh L., to The International Nickel Co. Electroforming and electrodeposition of stress free nickel from the sulfamate bath. 3,374,154, 3–19–68, Cl. 204—3.

McDaniel, Carl V.: *See*—
Maher, Philip K., and McDaniel. 3,374,056.

McDaniel, Carl V., and P. K. Maher, to W. R. Grace & Co. Process for ion exchanging crystalline zeolites with nitrogenous bases. 3,374,057, 3–19–68, Cl. 23—112.

McDaniel, Carl V., P. K. Maher, and W. E. Waxter, to W. R. Grace & Co. Process for preparing a crystalline zeolite. 3,374,058, 3–19–68, Cl. 23—113.

McDonald, Hugh C., to Melvin E. Lind. Navigational device. 3,373,493, 3–19–68, Cl. 33—1.

McDowell-Wellman Engineering Co.: *See*—
Ban, Thomas E., and Nelson. 3,374,101.

McElroy, James, and H. Shalit, to Air Products and Chemicals, Inc. Copper chromite-alkali metal oxide high surface area hydrogenation catalyst. 3,374,184, 3–19–68, Cl. 252—467.

McGrann, James G. Moisture control apparatus. 3,374,324, 3–19–68, Cl. 200—84.

McGraw-Edison Co.: *See*—
Bronikowski, Raymond J. 3,374,329.

McIntire, Daryl C., and O. Clark. Air driven grain circulating means. 3,373,504, 3–19–68, Cl. 34—57.

McKelvey, Michael J. Removable beam seat. 3,373,988, 3–19–68, Cl. 269—309.

McKittrick, Gordon D., to Tractor Supply Co. Pumps. 3,373,693, 3–19–68, Cl. 103—136.

McManama, Charles E. Sawmill capable of high production and lumber quality control operable by one man. 3,373,778, 3–19–68, Cl. 143—19.

McNutt, Douglas P.: *See*—
Mack, Julian E., McNutt, and Roesler. 3,373,651.

Mead Corp., The: *See*—
Wood, Prentice J. 3,373,867.

Mead Johnson & Co.: *See*—
Barton, Raymond W., and Neely. 3,373,864.

Mearl Corp., The: *See*—
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Meat Packers Equipment Co.: *See*—
Hawley, Richard A. 3,373,777.

Mechanical Handling Systems, Inc.: *See*—
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Meier, Edwin, and E. Schweizer, to Ciba Ltd. Cell for electrolysis with molten salt electrolyte. 3,374,163, 3–19–68, Cl. 204—246.

Meigs, Frederick M.: *See*—
Garber, John D., Ide and Meigs. 3,374,051.

Meipar, Inc.: *See*—
Bramley, Jenny. 3,374,393.
Connelly, Edward M. 3,374,469.
Thiess, George H. 3,374,436.

Melton, James O., T. B. Wilkinson, and J. H. Jackson, to Jamco, Inc. Ball joint. 3,374,016. 3–19–68, Cl. 287—87.

Memole, Ralph, J. S. Liebmann, H. Barkowitz, and D. Meszaros. Decorative shoe cover. 3,373,510, 3–19–68, Cl. 36—2.5.

Menow Machine Co., The: *See*—
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Merck & Co.: *See*—
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Garber, John D., Ide and Meigs. 3,374,051.
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Windholz, Thomas B., Patchett, and Fried. 3,374,255.

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Metcalfe, Paul V., and J. D. Ford. Tie lug. 3,374,012, 3–19–68, Cl. 285—114.

Metrailer, William J., to Esso Research and Engineering Co. Coking process and apparatus. 3,374,168, 3–19–68, Cl. 208—127.

Metz, Peter J., Jr., to Crown Zellerbach Corp. Method for manufacturing imprinted plastic film. 3,374,303, 3–19–68, Cl. 264—216.

Meurer, Hans., to Mannesmann-Meer Aktiengesellschaft. Drive mechanism for two rolling frames of a tube reducing rolling mill. 3,373,635, 3–19–68, Cl. 74—665.

Meyer, Engelbert A., to Warren Fastener Corp. Trim fastener. 3,373,530, 3–19–68, Cl. 52—718.

Meyer, Engelbert A., to Warren Fastener Corp. Retainer assembly. 3,374,017, 3–19–68, Cl. 287—189.36.

Meyer, Hans, and K. Meyer., to Air-Tech Industries, Inc. Wide span inflated structure. 3,373,531, 3–19–68, Cl. 52—2.

Meyer, Kurt: *See*—
Meyer, Hans and Kurt. 3,373,531.

Milani, Franco, to Milani Resine S.p.A. Flexible curtain for movable partitions or walls and process and device relative thereto. 3,373,791, 3–19–68, Cl. 160—181.

Milani Resine S.p.A.: *See*—
Milani, Franco. 3,373,791.

Miles Laboratories, Inc.: *See*—
Stolar, Morris E. 3,374,144.

Milgo Electronic Corp.: *See*—
Miller, Monroe A. 3,374,362.

Militello, James V., to American Allsafe Co. Safety attachment for hard headgear. 3,373,444, 3–19–68, Cl. 2—10.

Mill Equipment, Inc.: *See*—
Pease, Lionel. 3,373,782.

Miller, Charles W., to General Motors Corp. Time delay control for lighting circuit. 3,374,394, 3–19–68, Cl. 315—82.

Miller, Clarence J., to General Electric Co. Fluxless aluminum brazing. 3,373,482, 3–19–68, Cl. 29—501.

Miller, Clarence J., to General Electric Co. Fluxless aluminum brazing. 3,373,483, 3–19–68, Cl. 29—501.

Miller, Earle C., R. C. Rivers, and M. J. Ivanisin, to Riley Stoker Corp. Drive for stoker. 3,373,618, 3–19–68, Cl. 74—87.

Miller, John J., to Ocean Minerals, Inc. Precipitation of minerals from brines. 3,374,081, 3–19–68, Cl. 71—11.

Miller, Kenneth H., to Carrier Corp. Fluid compressor. 3,373,927, 3–19–68, Cl. 230—116.

Miller, Lewis F., to International Business Machines Corp. Conductive element composition and method. 3,374,110, 3–19–68, Cl. 117—212.

Miller, Monroe A., to Milgo Electronic Corp. Operational amplifier with mode control switches. 3,374,362, 3–19–68, Cl. 307—230.

Miller, Park H., Jr., to Gulf General Atomic Inc. Method and apparatus for regenerating sound waves. 3,373,841, 3–19–68, Cl. 181—5.

Miller, Paul J., to The Weatherhead Co. Dual brake system safety device. 3,374,322, 3–19–68, Cl. 200—82.

Miller, Paul W. Vertical broiler. 3,373,678, 3–19–68, Cl. 99—389.

Mills, William W., Jr., to Thiokol Chemical Corp. Alignment checking device for penetrating radiation photography apparatus. 3,374,350, 3–19–68, Cl. 250—65.

Minchin, Marjorie D. Razor blade dispenser. 3,373,862, 3–19–68, Cl. 206—16.

Missioux, Jean, P. Soubrier, and J. Vennat, to Botalam. Apparatus for selecting rodlike members. 3,373,868, 3–19–68, Cl. 209—97.

Mitchell, Charles D.: *See*—
Heckles, John, and Mitchell. 3,374,250.

Mitchell, Charles D., to Armstrong Cork Co. Phenylacetonitrile oximes. 3,374,248, 3–19–68, Cl. 260—396.

Mitchell, Charles D., to Armstrong Cork Co. Phenylacetonitrile oximes. 3,374,249, 3–19–68, Cl. 260—396.

Mitchell, John R., to G. Q. Parachute Co., Ltd. Parachutes. 3,373,960, 3–19–68, Cl. 244—148.

Mitsubishi Rayon Co., Ltd.: *See*—
Senda, Kazuo, Ichikawa, Ohzeki, Nakajima, Sasaki, Yasui, and Hirose. 3,374,216.

Mizzoni, Renat H., and G. de Stevens, to Ciba Corp. Quaternary 5-ammoniummethyl-4-amino-2-alkylmercaptoalkylene pyrimidine salts. 3,374,236, 3–19–68, Cl. 260—256.5.

Mobil Oil Corp.: *See*—
Baum, Lester A. H., and Henschel. 3,374,104.
Davis, Robert H. 3,374,171.
Myers, Herbert. 3,374,291.
Williams, Sherrod A. 3,373,810.

Modern Faucet Mfg. Co.: *See*—
Ward, Irving A., and Rauh. 3,373,770.

Moeller, Gerd M., and A. H. K. Haeussler. Hydraulic press. 3,373,596. 3–19–68, Cl. 72—446.

Mogler, Emil, to Kassenfabrik Emil Mogler. Locking and alarm device. 3,373,931, 3–19–68, Cl. 235—22.

Moldovan, George L.: *See*—
Terry, Thomas H., and Moldovan. 3,373,831.

Molnar, Dennis: *See*—
Manney, Charles J., Robinson, and Molnar. 3,373,560.

Monn, Stanislaus. Device for the analysis of the sinking speed of blood corpuscles in a calibrated tube. 3,373,601, 3–19–68, Cl. 73—61.4.

Mono-Sol Division: *See*—
Bianco, Thomas S., and Kratz. 3,374,195.

Monsanto Chemicals Ltd.: *See*—
Hare, David G., and Stephenson. 3,374,187.

Monsanto Co.: *See*—
Kasten, Nelson H., and Teicher. 3,374,169.
Marotta, Ralph. 3,374,180.
Tschirner, Henry J., and Williams. 3,374,091.

Monsanto Research Corp.: *See*—
Driscoll, John S., and Matthews. 3,374,256.

Montagano, Anthony. Container dispenser and closure. 3,373,916 3–19–68, Cl. 229—7.

Montecatini Edison S.p.A.: *See*—
Cappuccio, Vittorio, and Algieri. 3,374,215.
Falcone, Luigi, and Galletti. 3,374,198.

Montelius, George A. Surgical knife and blade expelling tool. 3,373,491, 3–19–68, Cl. 30—339.

Montgomery Machine Service Inc.: *See*—
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Moog, Inc.: *See*—
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Hague, Robert Z., Laucks, and Treff. 3,373,768.

Moog Industries, Inc.: *See*—
Wehner, William C. 3,374,038.

Moore, Chester C., to Stephens-Adamson Mfg. Co. Method of making a ball bearing assembly and locking collar therefor. 3,373,472, 3–19–68, Cl. 29—148.4.

Moore, Francis L. Foot measuring device. 3,373,494, 3–19–68, Cl. 33—3.2.

Moore Products Co.: *See*—
Adams, Robert B. 3,373,759.
Adams, Robert B., and Huslin. 3,373,760.

Moore, Robert E., and H. A. Brown, to General Dynamics Corp. Coaxial switch. 3,374,449, 3–19–68, Cl. 333—97.

Moore, Robert R., and E. Steffan. Interlocking structures for edging, paving, or the like. 3,373,668, 3–19–68, Cl. 94—31.

Moore, Thomas M., to United States of America, Navy. Automatic false alarm control. 3,374,479, 3–19–68, Cl. 343—7.

Moore, William C., and J. D. Connors, to Welch Allyn, Inc. Light control for diagnostic instruments. 3,373,737, 3–19–68, Cl. 128—9.

Morales, Richard. Splash painting decorating device. 3,373,717, 3–19–68, Cl. 118—6.

Morey, Glen H., to Templeton Coal Co. Grounded heating mantle. 3,374,338, 3–19–68, Cl. 219—529.

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Muir, David, III, to Bell Telephone Laboratories, Inc. Shift and rotate circuit for a data processor. 3,374,468, 3–19–68, Cl. 340—172.5.

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Muller, N. William, and H. E. Tarbell, to Grefco, Inc. Sulfonated aromatic resins. 3,374,210, 3–19–68, Cl. 260—79.3.

Mullers, Karl A., to Franz Muller, Maschinenfabrik. Method of raising textile fabrics. 3,373,468, 3–19–68, Cl. 26—29.

Mundschenk, Glenn R., to General Electric Co. Actuator knob and switch arrangement for a radio receiver. 3,373,621, 3–19–68, Cl. 74—104.

Munn, Alfred J., to Specialties Development Corp. High flow relief valves. 3,373,764, 3–19–68, Cl. 137—469.

Murton, Crawford B. Stopper rod with temperature responsive cooling means. 3,373,910, 3–19–68, Cl. 222—559.

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Myers, Herbert, to Mobil Oil Corp. Trithiophosphites of mercapto acid esters. 3,374,291, 3–19–68, Cl. 260—942.

Myers, Homer S., to Solvex Corp. Method for removing temporarily emplaced threads from fabric material. 3,373,471, 3–19–68, Cl. 28—76.

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Nederlandse Organisatie Voor Toegepast-Natuurvetenschappelijk Onderjoek ten Behoeve van Nijverheid: *See*—
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Nelsen, Ronald N., to General Electric Co. Method of producing a rotor and shaft assembly. 3,373,485, 3–19–68, Cl. 29—598.

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Nelson, James K., to Borg-Warner Corp. System for defrost control of refrigerators and the like. 3,373,575, 3–19–68, Cl. 62—80.

Nelson, Sidney N. Variable pitch rafter template. 3,373,496, 3–19–68, Cl. 33—93.

Nesslinger, Fritz J., and A. C. Borgman, to Harsco Corp. Material handling apparatus with a two section bucket assembly. 3,373,887, 3–19–68, Cl. 214—703.

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Neyer, Robert D., to Yarway Corp. Differential pressure gauge. 3,373,614, 3–19–68, Cl. 73—407.

Nicholas, Donald T. Slide projector. 3,373,655, 3–19–68, Cl. 88—26.

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Tate, Kenneth L., Jaquith, Hopkins, and Nichols. 3,373,-619.

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Nickel, Walter J. 3,373,573.

Nickel, Walter J., to L. M. Nickel. Fuel evaporation refrigeration system. 3,373,573, 3–19–68, Cl. 62—7.

Nigrelli, Biagio J., and W. E. Standley, to Johns-Nigrelli-Johns, Inc. Flap slitter and positioner. 3,373,543, 3–19–68, Cl. 53—381.

Nijhof, Engbert B. G.: *See*—
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Nippon Columbia Kabushikaisha (Nippon Columbia Co., Ltd.): *See*—
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Nitta, Tsuneharu, H. Taki, and K. Nagase, to Matsushita Electric Industrial Co., Ltd. Electroconductive composition containing $BaPbO_3$. 3,374,185, 3–19–68, Cl. 252—521.

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Nöller, Hans G. Method of determining hemoglobin in blood. 3,374,063, 3–19–68, Cl. 23—230.

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Nutzel, Karl, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of elastomeric diene polymers with improved properties. 3,374,191, 3–19–68, Cl. 260—5.

Nyberg, Åke L., to Svenska Rotor Masiner Aktiebolag. Regenerative heat exchanger. 3,373,797, 3–19–68, Cl. 165—9.

O'Brien, Jeremiah W., to United Engineering and Foundry Co. Roll bending device for rolling mill. 3,373,589, 3–19–68, Cl. 72—238.

O'Brien, Jeremiah W., F. J. Gleve, and B. J. Lamport, to United Engineering and Foundry Co. Fluid control system for a rolling mill. 3,373,591, 3–19–68, Cl. 72—245.

O'Brien, John W., and A. R. Stahlberg, to Electro Coatings, Inc. Conductor roll. 3,374,165, 3–19–68, Cl. 204—279.

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Oja, Carl W., and R. L. Scheuerman, to C. W. Oja. Resistance exerciser and brakeable mobile carriage. 3,373,993, 3–19–68, Cl. 272—81.

Olafsun, Theodure T. Crab traps or pots. 3,373,523, 3–19–68, Cl. 43—100.

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Into, Henry A. 3,373,521.
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Papetti, Stelvio. 3,374,259.

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Olmstead, John A., to Radio Corp. of America. Field-effect transistor with gate-insulator variations to achieve remote cutoff characteristic. 3,374,407, 3–19–68, Cl. 317—235.

Olsson, Johan B., to Associated Cargo Gear A.B. Essentially vertical doors adapted to be opened by a sideward movement. 3,373,527, 3–19–68, Cl. 49—212.

O'Neill, Dermut M. Protective wrist band. 3,373,445, 3–19–68, Cl. 2—170.

Ostberg, Werner, and M. D. Challis, to Dundee Cement Co. Barge unloading system. 3,373,883, 3–19–68, Cl. 214—14.

Ostensen, Ralph G., to SCM Corp. Corona unit with a tapered passageway of electrically nonconductive material between conductive housings that are electrically interconnected. 3,374,348, 3–19–68, Cl. 250—49.5.

Ott, Karl-Heinz, H. Schlesmann, K. Dinges, O. Glenz, K. A. Weber, and F. Kassack, to Farbenfabriken Bayer Aktiengesellschaft. Graft polymers for coatings, impregnations and adhesive films for fibre substrata. 3,374,289, 3–19–68, Cl. 260—885.

Ottmann, Gerhard F., and H. Hooks, Jr., to Olin Mathieson Chemical Corp. Substituted 1,2,4-thiadiazolidin 3,5-diones and process therefor. 3,374,240, 3–19–68, Cl. 260—306.7.

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Palfreyman, Jack, and H. F. Smith, to Rolls-Royce Ltd. Jet propulsion powerplant with afterburning combustion equipment. 3,373,567, 3–19–68, Cl. 60—264.

Papetti, Stelvio, to Olin Mathieson Chemical Corp. Silylamine carboranes. 3,374,258, 3–19–68, Cl. 260—448.2.

Papetti, Stelvio, to Olin Mathison Chemical Corp. Cyclic organosilylamine carboranes and process therefor. 3,374,259, 3–19–68, Cl. 260—448.2.

Papst, Hermann. Fuel injection and ignition device for internal combustion engines. 3,373,724, 3–19–68, Cl. 123—32.

Papst, Hermann. Spray nozzle. 3,373,727, 3–19–68, Cl. 123—139.

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Parker, John T.: *See*—
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Parker, Sidney G.: *See*—
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Parkin, Leslie, and S. A. Andrews, to United-Carr Inc. Sheet metal nut with resilient cage. 3,373,789, 3–19–68, Cl. 151—41.75.

Parkin, Peter H., to National Research Development Corp. Acoustically controlled closure apparatus. 3,373,526, 3–19–68, Cl. 49—25.

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Parmentier, Alfred H. Multiple element, horizontally rotating filter pans having pivoting bottoms. 3,373,873, 3–19–68, Cl. 210—236.

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Parris, Harold C., to North American Aviation, Inc. Nuclear reactor heat transfer system. 3,374,149, 3–19–68, Cl. 176—65.

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Pease, Lionel, to Mill Equipment, Inc. Side, top and bottom chippers. 3,373,782, 3–19–68, Cl. 144—326.

Peek, Cecil H. and K. R. Pressure responsive device for actuating an alarm. 3,374,323, 3–19–68, Cl. 200—83.

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Pepe, Enrico J., and B. Kanner, to Union Carbide Corp. Process for the catalyzed redistribution of silicon-fluorine and silicon-hydrocarbyloxy bonds. 3,374,247, 3–19–68, Cl. 260—348.

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Perry, Kenneth E., to Geodyne Corp. Inductive coupling apparatus for use in coupling to underwater electric systems and the like. 3,374,434, 3–19–68, Cl. 324—127.

Petersen, John F., to Honeywell, Inc. Control apparatus. 3,373,959, 3–19–68, Cl. 244—77.

Peterson, Warren E., to Western Electric Co., Inc. Apparatus for folding tape about a strand. 3,373,475, 3–19–68, Cl. 29—202.5.

Peterson, Earl A. Slip clutch constant tension winch. 3,373,-972, 3–19–68, Cl. 254—187.

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Petrozzo, Anne P. Filter bags for ground coffee. 3,373,077. 3–19–68, Cl. 99—295.

Pfeuffer, Anton. Dispenser, mixer and feeder. 3,373,901, 3–19–68, Cl. 222—57.

Pfleger, Frederick W. Multiple-column setup system. 3,373,-933, 3–19–68, Cl. 235—61.

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Pick, Louis. Method of manufacturing a solid-type door. 3,374,135, 3–19–68, Cl. 156—265.

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Ponthus, Louis and J. Lacour, to Commissariat a l'Energie Atomique. Non-resettable counter with means for cyclically changing polarity of input pulses to provide continuous scaling. 3,374,360, 3–19–68, Cl. 307—225.

Poole, William D., to Bethlehem Steel Corp. Making of steel strip electrolytically using electrolyte adhering to the strip. 3,374,159, 3–19–68, Cl. 204—143.

Porter, Donald K. J. W. Eckenwiler, F. K. Barns, R. F. Cooper, and W. E. Head, to The B. F. Goodrich Co. Tire building machine. 3,374,138, 3–19–68, Cl. 156—400.

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Herweh John E., and Poshkus. 3,374,190.

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Potter, Ralph M., to General Electric Co. Process for making N-typezinc cadmium sulfide electroluminescent material. 3,374,176, 3–19–68, Cl. 252—62.3.

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Prasil, Vladimir, to Elitex, Zavody Textilniho Strojirenstvi. Cop exchanging apparatus. 3,373,946, 3–19–68, Cl. 242—35.6.

Prasil, Vladimir, to Elitex, Zavody Textilniho Strojirenstvi. Yarn positioning and tying device. 3,373,947, 3–19–68, Cl. 242—35.6.

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Masters, John E. and Price. 3,374,204.

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Quilici, Gino R. and C. V. Machine for making ravioli. 3,373,-702, 3–19–68, Cl. 107—1.

Quintilian, Bartholomew F., to Koppers Co., Inc. Electrostatic precipitator electrode handling system. 3,373,487, 3–19–68, Cl. 29—624.

Raasch, Hans, to W. Reiners. Method and device for pneumatically removing the tip or foot bunch from supply coils. 3,373,948, 3–19–68, Cl. 242—35.6.

Rabin, Herbert, and H. S. Goulart. Paint dispensing pen. 3,374,050, 3–19–68, Cl. 401—208.

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Wallmark, John T. 3,374,406.

Rankin, John C. Apparatus for massaging the scalp with rotating brushes. 3,373,739, 3–19–68, Cl. 128—56.

Räntsch, Kurt, and A. Weyrauch, to Carl Zeiss Stiftung. Reading microscope with interpolation prism. 3,374,046, 3–19–68, Cl. 350—112.

Raschle, Josef, to Heberlein Patent Corp. Yarn twisting apparatus. 3,373,554, 3–19–68, Cl. 57—77.4.

Rauen, Theodore J., E. C. Myers, Jr., and A. B. Cooke, to United States of America, Navy. Electrical connector. 3,374,307, 3–19–68, Cl. 174—89.

Rauh, Jack K.: *See*—
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Raymond, Samuel. Vertical gel electrophoresis apparatus. 3,374,166, 3–19–68, Cl. 204—299.

Re, Luciano, to Merck & Co., Inc. 6-keto-estrone and process for the production thereof. 3,374,254, 3–19–68, Cl. 260—397.4.

Records, William M., to Ewing-Records & Associates, Inc. Apparatus for handling steel forms in tunnels. 3,373,571, 3–19–68, Cl. 61—54.

Reddington, George A., to HRC Development, Inc. Apparatus for producing loops on coil springs. 3,373,775, 3–19–68, Cl. 140—103.

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Reesor, James W., and G. W. Frehafer, to Reynolds Metals Co. Method of arc welding a circular joint. 3,374,335, 3–19–68, Cl. 219—60.

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Sano, Shouichi, to Kabushiki Kaisha Honda Gijutsu Kenkyusho. Compact motor car construction. 3,373,833, 3–19–68, Cl. 180—54.
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Scaramucci, Domer. Between flange ball valve slidable seats. 3,373,968, 3–19–68, Cl. 251—148.

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Shubin, Vladimir N., A. F. Barsov, R. L. Novobratsky, V. A. Poshchishchailo, and S. M. Poljak. Automatic tube bending machines. 3,373,587, 3–19–68, Cl. 72—158.
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Simmonds, Harold F., Jr., to Westinghouse Electric Corp. Method of making refrigeration apparatus. 3,373,478, 3–19–68, Cl. 29—407.
Simmons, Bjorn H. O., to Aktiebolaget Bofors. Wire mounting for an electric fuze of a shaped-charge projectile. 3,373,687. 3–19–68, Cl. 102—56.
Simons, John C., Jr. Vacuum calibration apparatus. 3,373,597. 3–19–68, Cl. 73—4.
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CLASSIFICATION OF PATENTS

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NOTE.—First number, class; second number, subclass; third number, patent number

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10	3,373,444	50	3,373,515	243	3,373,590		3,373,671	56	3,373,739	74	3,373,802
170	3,373,445	38— 78	3,373,516	245	3,373,591	63	3,373,672	66	3,373,740	1[illegible]	3,373,803
173	3,373,446	40— 65	3,373,517	255	3,373,592	66	3,373,673	90	3,373,741	166— .5	3,373,806
196	3,373,447	79	3,373,518	399	3,373,593	97	3,373,674	171	3,373,742		3,373,807
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192	3,373,452	100	3,373,523	15	3,373,598	99— 1	3,374,096	422	3,373,747		3,373,810
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81	3,373,454	38	3,374,071	32	3,373,600	143	3,374,098	38	3,373,749		3,373,812
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235.7	3,373,458	49— 25	3,373,526	182	3,373,605	129	3,373,680		3,374,117	65	3,373,817
18— 30	3,373,459	212	3,373,527	189	3,373,606	163	3,373,681	18	3,373,753	77	3,373,818
42	3,373,460	349	3,373,528	190	3,373,607	101— 45	3,373,682	21	3,374,118	88	3,373,819
19— 98	3,373,461	381	3,373,529	194	3,373,608	129	3,373,683	58	3,373,754	187	3,373,820
230	3,373,462	51—238	3,373,530	299	3,373,609	228	3,373,684	134	3,373,755	167— 59	3,374,144
23— 1	3,374,052	52— 2	3,373,531	334	3,373,610	235	3,373,685	136— 86	3,374,120	65	3,374,145
21	3,374,053	24	3,373,532	352	3,373,611	102— 22	3,373,686		3,374,121	83	3,374,146
88	3,374,054	82	3,373,533	379	3,373,612	56	3,373,687	234	3,374,122	170— 10	3,373,821
107	3,374,055	90	3,373,534	398	3,373,613	103— 3	3,373,688	137— 1	3,373,756	172—311	3,373,822
112	3,374,056	105	3,373,535	407	3,373,614	42	3,373,689	34	3,373,757	173— 6	3,373,823
	3,374,057	234	3,373,536	424	3,373,615	87	3,373,690	68	3,373,758	12	3,373,824
113	3,374,058	288	3,373,537	74— 5.46	3,373,617	118	3,373,691	81.5	3,373,759	59	3,373,825
139	3,374,059	403	3,373,538	.6	3,373,616	120	3,373,692		3,373,760	174— 68.5	3,374,305
151	3,374,060	718	3,373,539	87	3,373,618	136	3,373,693	205	3,373,761		3,374,306
167	3,374,061	53— 3	3,373,540	89.2	3,373,619	150	3,373,694	240	3,373,762	89	3,374,307
182	3,374,062	24	3,373,541	96	3,373,620	153	3,373,695	269	3,373,763	138	3,374,308
230	3,374,063	159	3,373,542	104	3,373,621	162	3,373,696	469	3,373,764	175— 5	3,373,826
253	3,374,064	381	3,373,543	143	3,373,622	104— 23	3,373,697	489	3,373,765	6	3,373,827
	3,374,065	55—269	3,373,544	388	3,373,623	88	3,373,698	494	3,373,766	65	3,373,828
258.5	3,374,066	273	3,373,545		3,373,624	162	3,373,699	503	3,373,767	176— 37	3,374,147
305	3,374,067	501	3,373,546	409	3,373,625	105—240	3,373,700	556	3,373,768	58	3,374,148
326	3,374,068	56— 44	3,373,547	421	3,373,626	376	3,373,701	595	3,373,769	65	3,374,149
345	3,374,069	294	3,373,548	440	3,373,627	106— 2	3,374,100	615	3,373,770	177—132	3,373,829
24— 73	3,373,463	57— 34	3,373,549	484	3,373,628	40	3,374,101	625.46	3,373,771	168	3,373,830
201	3,373,464		3,373,550	492	3,373,629	43	3,374,102	138— 43	3,373,772	178— 2	3,374,309
241	3,373,465		3,373,551		3,373,630	161	3,374,103	139— 1	3,373,773	5.4	3,374,310
25— 36	3,373,466	56	3,373,552	495	3,373,631	273	3,374,104	420	3,373,774	6.6	3,374,311
118	3,373,467	77.3	3,373,553	502	3,373,632	291	3,374,105	140—103	3,373,775	7.1	3,374,119
26— 29	3,373,468	.4	3,373,554	574	3,373,633	107— 1	3,373,702	141— 4	3,373,776	.3	3,374,312
28— 1	3,373,469	.45	3,373,555	661	3,373,634	108— 50	3,373,703	263	3,373,777	.83	3,374,313
72	3,373,470	88	3,373,556	665	3,373,635	110— 7	3,373,704	143— 19	3,373,778	34	3,374,314
76	3,373,471	119	3,373,557	720.5	3,373,636	111— 73	3,373,705	68	3,373,779	179— 1	3,374,315
29—148.4	3,373,472	58— 4	3,373,558	75— 3	3,374,085	112—162	3,373,706	105	3,373,780		3,374,316
155	3,373,473	115	3,373,559	10	3,374,086	184	3,373,707	167	3,373,781	84	3,374,317
200	3,373,474	59— 85	3,373,560	26	3,374,087	220	3,373,708	144—326	3,373,782	184	3,374,318
202.5	3,373,475	60— 39.15	3,373,561	60	3,374,088	260	3,373,709	146— 1	3,373,783	190— 22	3,373,831
208	3,373,476	.72	3,373,562	68	3,374,089	114— 39	3,373,710	3	3,373,784	30	3,373,832
237	3,373,477	203	3,373,563	97	3,374,090	43.5	3,373,711	43	3,373,785	54	3,373,833
407	3,373,478	204	3,373,564	120	3,374,091	208	3,373,712	52	3,373,786	73	3,373,834
421	3,373,479	222	3,373,565	134	3,374,092	220	3,373,713	81	3,373,787	113	3,373,835
	3,373,480	232	3,373,566	135	3,374,093	230	3,373,714	241	3,373,788	118	3,373,836
471.3	3,373,481	264	3,373,567	81— 57	3,373,637	115— 70	3,373,715	148— 11.5	3,374,123		3,373,837
501	3,373,482	61— 5	3,373,568		3,373,638	116—114	3,373,716	20.3	3,374,126	174	3,373,838
	3,373,483	53.68	3,373,569	112	3,373,639	117—105.3	3,374,106	186	3,374,124	178	3,373,839
529	3,373,484	72.3	3,373,570	82— 14	3,373,640	139.4	3,374,107	189	3,374,125	181— .5	3,373,840
598	3,373,485	84	3,373,571	40	3,373,641	200	3,374,108	149— 39	3,374,127		3,373,841
610	3,373,486	85	3,373,572	83— 76	3,373,642	201	3,374,109	56	3,374,128	33	3,373,842
624	3,373,487	62— 7	3,373,573	620	3,373,643	212	3,374,110	151— 41.75	3,373,789	182—141	3,373,843
30—164.95	3,373,488	20	3,373,574	650	3,373,644		3,374,111	152—209	3,373,790		3,373,844
167	3,373,489	80	3,373,575	85— 32	3,373,645	226	3,374,112	156— 3	3,374,129	188— 26	3,373,845
228	3,373,490	180	3,373,576	49	3,373,646	227	3,374,113	24	3,374,130	64	3,373,846
339	3,373,491		3,373,577	64	3,373,647	232	3,374,114	133	3,374,131	90	3,373,847
32— 33	3,373,492	189	3,373,578	67	3,373,648	118— 6	3,373,717	171	3,374,132	97	3,373,848
33— 1	3,373,493	293	3,373,579	79	3,373,649	78	3,373,718	220	3,374,133	152	3,373,849
3	3,373,494		3,373,580	88— 14	3,373,650	202	3,373,719	239	3,374,134	191— 12.4	3,374,319
76	3,373,495	294	3,373,581		3,373,651	119— 14.[illegible]	3,373,720	265	3,374,135	192— 4	3,373,850
93	3,373,496	65— 2	3,374,074		3,373,652	122— 6	3,373,721	293	3,374,136	12	3,373,851
170	3,373,497	6	3,374,075	24	3,373,653	123— 8	3,373,722	332	3,374,137	48	3,373,852
223	3,373,498	18	3,374,076		3,373,654	17	3,373,723	400	3,374,138	85	3,373,853
226	3,373,499	104	3,374,077	26	3,373,655	32	3,373,724	523	3,374,139	99	3,373,854
34— 1	3,373,500	182	3,374,078	89— 1	3,373,656	119	3,373,725	580	3,374,140	107	3,373,855
8	3,373,501	232	3,374,079	.81	3,373,657	122	3,373,726	160—181	3,373,791	194—100	3,373,856
10	3,373,502	273	3,374,080	90— 14	3,373,658	139	3,373,727	368	3,373,792	195— 47	3,374,150
33	3,373,503	68—264	3,373,582	62	3,373,659	142.5	3,373,728	161— 1	3,374,141	197— 14	3,373,857
57	3,373,504	70—303	3,373,583	91—278	3,373,660	148	3,373,729	50	3,374,142	17	3,373,858
35— 12	3,373,505	71— 11	3,374,081	391	3,373,661	124— 5	3,373,730	162—190	3,374,143		3,373,859
	3,373,506	90	3,374,082	434	3,373,662	126— 30	3,373,731	164—127	3,373,794	198— 34	3,373,860
14	3,373,507	92	3,374,083	93— 8	3,373,664	116	3,373,732	341	3,373,793	131	3,373,861
35	3,373,508	94	3,374,084	44.1	3,373,663	191	3,373,733	359	3,373,795	200— 18	3,374,320
36	3,373,509	78— 10	3,373,584	53	3,373,665	343.5	3,373,734	165— 1	3,373,796	61.27	3,374,321
36— 2.5	3,373,510	57	3,373,585	93	3,373,666	127— 29	3,374,115	9	3,373,797	82	3,374,322
	3,373,511	135	3,373,586	94— 1.5	3,373,667	128— 2	3,373,735	10	3,373,798	83	3,374,323
7.1	3,373,512	158	3,373,587	31	3,373,668	6	3,373,736	12	3,373,799	84	3,374,324
[illegible]	3,373,513	237	3,373,588	44	3,373,669	9	3,373,737	29	3,373,800		3,374,325

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

March 19, 1968 Volume 848 Number 3

TRADEMARKS

NOTICES

DEPARTMENT OF THE TREASURY

Bureau of Customs

[T.D. 68-55]

HARMAL CORPORATION

Notice of Recordation of Trade Name

On December 15, 1967, there was published in the Federal Register (32 F.R. 17985) a notice of application for the recordation under section 42 of the Act of July 5, 1946, as amended (15 U.S.C. 1124) of the trade name HARMAL CORPORATION used by Harmal Corporation, an Illinois corporation, and Ball Machinery Company, an Illinois corporation. The notice advised that prior to final action on the application, filed pursuant to section 11.16, Customs Regulations (19 CFR 11.16), consideration would be given to relevant data, views, or arguments submitted in opposition to the recordation and received not later than 30 days from the date of publication of the notice. No responses were received in opposition to the application.

The name "HARMAL CORPORATION" is hereby recorded as the trade name of Harmal Corporation, a corporation organized under the laws of the State of Illinois, located at 939 West Lake Street, Chicago, Illinois, and Ball Machinery Company, an Illinois corporation, located at 939 West Lake Street, Chicago, Illinois, when applied to metal working machine tools, manufactured in Italy.

EDWIN F. RAINS,

Feb. 9, 1968. *Acting Commissioner of Customs.*

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	17,851
Date of oldest new application	Mar. 1, 1967
Date of oldest amended application (filing date)	Aug. 4, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	4-6-67	4-28-65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	4-19-67	8-4-64
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	3-1-67	10-28-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	3-17-67	9-10-65
Renewals (All Classes)	12-28-67	.....
Sec. 12(c) Publications (All Classes)	1-8-63	.....

Applications filed during the month of January 1968—2,350

Registrations Issued ..... 416—No. 846,079 to No. 846,494
Renewals Issued 80

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MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 245,732. The Mercoid Corporation, Chicago, Ill. Filed May 16, 1966.

MERCOID CONTROL

Applicant disclaims exclusive rights to the word "Control," except in combination with the mark as shown. Owner of Reg. No. 156,669.

Class 21—Electrical Apparatus, Machines, and Supplies

For Vacuum Operated Electric Switches, Pressure Operated Electric Switches, Float Operated Electric Switches, Mechanically Operated Electric Switches, Mercury Switches, and Magnetically Operated Electric Switches (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Mercury Contact Devices, Temperature Devices, Timing Devices, Differential Pressure Devices, Pressure Actuated Mechanical Devices, Vacuum Controlling and Indicating Devices, and Float Controlling and Indicating Devices (Int. Cl. 9).

First use on or before Aug. 1, 1933.

SN 257,461. Consolidated Merchandising Corp., New York, N.Y. Filed Oct. 28, 1966.

SOUNDMASTER

Class 21—Electrical Apparatus, Machines, and Supplies

For Walkie Talkies and AM and FM Radio Receivers (Int. Cl. 9).
First use August 1966.

Class 36—Musical Instruments and Supplies

For Tape Recorders (Int. Cl. 9).
First use June 28, 1966.

SN 257,705. General Fire Extinguisher Corp., Northbrook, Ill. Filed Nov. 1, 1966.

QUICK AID

Class 6—Chemicals and Chemical Compositions

For Dry Chemical and Liquid Fire Extinguishing Agents (Int. Cl. 1).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Portable Fire Extinguishers (Int. Cl. 7).

First use on or before Dec. 2, 1946.

SN 261,364. Develco, Incorporated, Norwalk, Conn. Filed Dec. 23, 1966.

DEVELCO

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Food Pumps (Int. Cl. 7).
First use at least as early as Feb. 15, 1961.

Class 26—Measuring and Scientific Appliances

For Environmental Test Chambers (Int. Cl. 9).
First use at least as early as Feb. 25, 1960.

SN 263,739. Borske Sklo, Narodni Podnik, Novy Bor, Czechoslovakia. Filed Feb. 1, 1967.

The word "Czechoslovakia" is disclaimed apart from the mark as shown. Owner of Czechoslovakian Reg. No. 156,676, dated Mar. 1, 1966.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Smokers' Articles and Smokers' Kits—Namely, Ashtrays; Cigarette and Cigar Holders; Cigar, Cigarette and Tobacco Boxes and Cases (Int. Cl. 34).

Class 33—Glassware

For Utilitarian Household Glassware—Namely, Vases, Bowls, Jardinieres, Baskets, Cups, Tableware, Compote Sets, Tumblers, and Stemware (Int. Cl. 21).

SN 267,336. Joseph Chevrolet Co., Groesbeck, Ohio. Filed Mar. 22, 1967.

PONDEROSA

Class 101—Advertising and Business

For New and Used Automobile Dealership Services (Int. Cl. 35).

Class 103—Construction and Repair

For Automobile Maintenance Services (Int. Cl. 37).

First use Apr. 30, 1965.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials **Class 2—Receptades**

SN 256,357. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Oct. 13, 1966.

VYCELL

For Vinyl Shoe Sole Compound (Int. Cl. 1).
First use July 13, 1966.

SN 262,212. Standard Oil Company of California, San Francisco, Calif. Filed Jan. 9, 1967.

CHEVRON

Owner of Reg. No. 736,207 and others.
For Fibers Produced From Synthetic Resin (Int. Cl. 22).
First use Oct. 11, 1966.

SN 264,891. W. P. Adams II, d.b.a. ABC Ranch, Omaha, Nebr. Filed Feb. 17, 1967.

ABC

For Registered Hereford Cattle (Int. Cl. 31).
First use Mar. 1, 1959.

SN 269,567. The Richardson Company, Melrose Park, Ill. Filed Apr. 19, 1967.

Owner of Reg. Nos. 765,724 and 765,725.
For Thermoplastic and Thermosetting Resins (Int. Cl. 1).
First use during the fall of 1966.

SN 267,616. Hudson Foam Plastics Corporation, Edgewater, N.J. Filed Dec. 27, 1967.

CUSH-N-FOAM

Owner of Reg. Nos. 580,636, 750,924, and others.
For Rubber and Plastic Foam Sold in Sheet, Slab, Die-Cut, or Chopped Form (Int. Cl. 17).
First use May 12, 1952.

No exclusive claim is made to the letter "G" except as shown.

For Food and Drink Cooling and Serving Sets Comprising a Food or Beverage Container, a Cold Energy Liner and a Decorative Insulated Container for Said Cold Energy Liner (Int. Cl. 21).

First use Oct. 25, 1964; as early as June 30, 1963, in a different form.

SN 251,588. The Greif Bros. Cooperage Corporation, Delaware, Ohio. Filed Aug. 2, 1966.

PLAST-I-LINED

For Fibre and/or Metal Drums (Int. Cls. 6 and 20).
First use Apr. 13, 1965.

SN 254,877. H. D. Hudson Manufacturing Company, Chicago, Ill. Filed Sept. 21, 1966.

FELKER

For Tanks Used as Receptacles (Int. Cl. 6).
First use in or about 1928.

SN 260,390. American Hospital Supply Corporation, Evanston, Ill. Filed Dec. 9, 1966.

TOMAC

Owner of Reg. Nos. 526,450, 732,775, and 836,601.
For Jars, Trays, Utility Chests, Dispensing Cabinets, Bowls, Tumblers, Cups, Soap Dishes, Basins, Pans and Holders for Hospital Use; Dispensing Containers for Brushes, Drugs and Water; and Hampers and Bags for Laundry, Storage and Refuse (Int. Cls. 20 and 21).
First use in or before June 1914.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 261,353. Antler Limited, Bury, England. Filed Dec. 23, 1966.

ANTLER

Owner of British Reg. No. 871,912, dated Nov. 17, 1964.
For Travelling Cases, Travelling Bags, Attaché Cases, Suit Cases, Document Cases, Despatch Cases, Brief Cases, Valises, Trunks, and Portmanteaus (Int. Cl. 18).

SN 272,101. School House Products, Inc., New York, N.Y. Filed May 22, 1967.

HANDI-TOTE

For Book Straps (Int. Cl. 18).
First use June 1965.

Class 4 — Abrasives and Polishing Materials

SN 272,001. Armour and Company, d.b.a. Armour Abrasives Company, Chicago, Ill. Filed May 22, 1967.

RESILITE MARK II

Owner of Reg. No. 516,820.
For Coated Abrasives in the Form of Sheets and Belts (Int. Cl. 3).
First use on or prior to May 1, 1967.

SN 287,113. Alberto-Culver Company, Melrose Park, Ill. Filed Dec. 18, 1967.

PROCLAIM

For Furniture Polish (Int. Cl. 3).
First use Nov. 27, 1966.

SN 287,788. Simonis Company, Chicago, Ill. Filed Dec. 29, 1967.

UNIQUE

Owner of Reg. No. 781,518.
For Floor Wax (Int. Cl. 3).
First use Dec. 1, 1967.

Class 6 — Chemicals and Chemical Compositions

SN 262,231. Universal Oil Products Company, Des Plaines, Ill. Filed Jan. 9, 1967.

K-70

For Algaecide (Int. Cl. 5).
First use Feb. 22, 1961.

SN 266,452. Quikrete Company, Columbus, Ohio. Filed Mar. 10, 1967.

THERMO-LUBE

For Liquid Chemical Composition Used as an Additive for Concrete and Mortar Mixes To Reduce the Freezing Point of Such Mixes and To Increase the Workability Thereof in Cold Weather (Int. Cl. 1).
First use January 1962.

SN 274,099. Shell Oil Company, New York, N.Y. Filed June 16, 1967.

NEOFLEX

For Alcohol (Int. Cl. 1).
First use May 8, 1967.

SN 274,445. National Lead Company, New York, N.Y. Filed June 21, 1967.

Y47

For Pigment Especially Adapted for Yellow Traffic Marking Paints (Int. Cl. 2).
First use Apr. 22, 1963.

SN 274,626. Industrial Weed Killers, Inc., Lubbock, Tex. Filed June 23, 1967.

STAKILL

For Herbicide (Int. Cl. 5).
First use on or about Apr. 1, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 261,046. Commercial Solvents Corporation, New York, N.Y. Filed Dec. 19, 1966.

SHOT BAG

For Blasting Explosives (Int. Cl. 13).
First use Oct. 1, 1966.

Class 12 — Construction Materials

SN 257,960. Johns-Manville Corporation, New York, N.Y. Filed Nov. 4, 1966.

FIRE-GLASS

For Shingles, and Felts for Use as Underlayment for Shingles (Int. Cl. 19).
First use Sept. 29, 1966.

SN 259,402. The Borden Company, New York, N.Y. Filed Nov. 25, 1966.

ELASTATURF

For Rubber-Plastic Composition Material for Surfacing Playgrounds and Athletic Areas (Int. Cl. 19).
First use on or before Oct. 28, 1966.

SN 264,678. National Gypsum Company, Buffalo, N.Y. Filed Feb. 14, 1967.

FIRE/SHEATH

Owner of Reg. No. 735,169.
For Gypsum Sheathing (Int. Cl. 19).
First use May 6, 1966.

SN 269,454. Ranco Industrial Products Corporation, Cleveland, Ohio. Filed Apr. 18, 1967.

SEALO

For Homogenized, Non-Hardening Caulking and Glazing Compound (Int. Cl. 17).
First use on or about July 14, 1948.

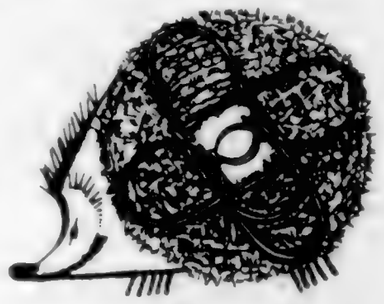
SN 270,046. Clopay Corporation, Cincinnati, Ohio. Filed Apr. 26, 1967.

DECORATOR

For Folding Doors (Int. Cl. 19).
First use Apr. 4, 1967.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 251,674. Westfälische Union Aktiengesellschaft für Eisen- und Drahtindustrie, Hamm, Westphalia, Germany. Filed Aug. 3, 1966.



Applicant makes no claim to a representation of the goods (barbed wire) apart from the distinctive silhouette shown.
For Barbed Wire (Int. Cl. 6).
First use November 1965; in commerce March 1966.

SN 255,529. E. F. Harster Company, St. Louis, Mo. Filed Sept. 30, 1966.

DUC-TIE

For Duct Tie Hangers (Int. Cl. 6).
First use 1956.

SN 260,262. Mason Industries, Inc., Hollis, N.Y. Filed Dec. 7, 1966.

LO-NOISE HUSH PIPE

For Flexible Hose and Flanges Used in Piping Systems (Int. Cl. 17).
First use Jan. 10, 1964.

SN 263,652. Advance Food Service Equipment, Inc., Westbury, N.Y. Filed Jan. 31, 1967.

For Pans and Sinks (Int. Cls. 6 and 21).
First use June 1962.

SN 263,761. Mills-McCanna Company, Carpentersville, Ill. Filed Feb. 1, 1967.

SAF-T-HANDLE

For Valves (Int. Cl. 6).
First use in or about May 1965.

SN 271,557. Whitten Corporation, Bellingham Center, Mass. Filed May 15, 1967.

UNIFLOW

For Water Supply Piping and Drainage Gutter Systems for Swimming Pools (Int. Cl. 6).
First use Apr. 8, 1966.

SN 271,898. ACF Industries, Incorporated, New York, N.Y. Filed May 19, 1967.

POW-R-SEAL

For Fluid Control Valves (Int. Cl. 6).
First use December 1962.

SN 273,382. E-Z Products Company, Culver City, Calif. Filed June 8, 1967.

CLIPACK

For Prepackaged Pipe Fittings (Int. Cl. 6).
First use Mar. 11, 1966.

SN 273,407. Parker-Kalon Corporation, Clifton, N.J. Filed June 9, 1967.

DRIL-KWICK

For Self-Tapping Screws (Int. Cl. 6).
First use Nov. 7, 1966.

SN 273,434. A.P.M. Corporation, Englewood, N.J. Filed May 15, 1967.

ADJUST-A-SEEL

For Self-Sealing Threaded Nuts (Int. Cl. 6).
First use Apr. 25, 1967.

Class 14 — Metals and Metal Castings and Forgings

SN 257,642. Nelsen Steel & Wire Company, Incorporated, Franklin Park, Ill. Filed Oct. 31, 1966.

The word "Steel" is disclaimed.
For Cold Drawn Steel Bars (Int. Cl. 6).
First use Jan. 10, 1959.

SN 257,643. Nelsen Steel & Wire Company, Incorporated, Franklin Park, Ill. Filed Oct. 31, 1966.

VIKING "100"

For Cold Drawn Steel Bars (Int. Cl. 6).
First use Nov. 29, 1963.

SN 260,160. Isabellenhuette Heusler, Kommanditgesellschaft, Dillenburg, Hessen, Germany. Filed Dec. 6, 1966.

ZERANIN

Owner of German Reg. No. 819,633, dated May 3, 1965.
For Alloy—Namely, Nickel-Manganese-Copper Alloy in the Form of Ingots, Plates, Rods, Wires, Sheets, Bands, Tubes, Wire Nets, Flat Wires, and in Any Other Form Suitable for Making Electrical Resistors (Int. Cl. 6).

SN 273,521. National Steel Corporation, Pittsburgh, Pa. Filed June 9, 1967.

JP

For Matte-Finish, Paintable, Galvanized Steel Sheets and Strip (Int. Cl. 6).
First use May 8, 1967.

Class 15—Oils and Greases

SN 274,620. H.R.L. Inc., d.b.a. HRLubricants Inc., Los Angeles, Calif. Filed June 23, 1967.

HRLubricants

The word "Lubricant" is disclaimed apart from the mark as shown. Owner of Reg. No. 691,157.
For Lubricant and Additive for Engines, Motors, Gears, Chain Drives, Transmissions, and Differentials (Int. Cl. 4).
First use Apr. 17, 1967.

SN 277,455. Golden Imperial, Inc., Indianapolis, Ind. Filed Aug. 3, 1967.

LONE STAR

For Motor Oil (Int. Cl. 4).
First use June 4, 1967.

Class 16—Protective and Decorative Coatings

SN 266,604. United Paint Mfg. Co., Spokane, Wash. Filed Mar. 13, 1967.

MONOCRYL

For Clear Acrylic Finish for Walls and Floors (Int. Cl. 2).
First use Dec. 1, 1965.

SN 267,442. Phelan-Faust Paint Manufacturing Company, St. Louis, Mo. Filed Mar. 23, 1967.

ULTRADEC

For Floor Coating—Namely, Two-Component Base Coats and Finish Coats (Int. Cl. 2).
First use Nov. 9, 1966.

SN 269,165. Geo. Brothers, Great Barrington, Mass. Filed Apr. 14, 1967.

LIN-SPEED

For Wood Finishing Oil, Especially for Gunstocks (Int. Cl. 2).
First use Jan. 15, 1951.

SN 269,695. The Sherwin-Williams Company, Cleveland, Ohio. Filed Apr. 20, 1967.

KEM-1-COAT

Owner of Reg. Nos. 275,775, 816,517, and others.
For House Paint (Int. Cl. 2).
First use Jan. 23, 1967.

SN 274,504. The Egyptian Lacquer Manufacturing Company, Kearny, N.J. Filed June 22, 1967.

LASTINA

For Nitrocellulose and Synthetic Resin Based Finishes—Namely, Air Drying and Baking Metal Coatings, Both Clear and Pigmented (Int. Cl. 2).
First use July 1892 on nitrocellulose lacquers.

SN 275,141. Hotopp Paint & Varnish Co., Jersey City, N.J. Filed June 30, 1967.

Dura

The drawing is lined for the color red, but no claim is made to color.
For Paints (Int. Cl. 2).
First use 1951; 1885 as to "Dura."

Class 17—Tobacco Products

SN 264,188. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Feb. 13, 1967.

MINIT

For Cigarettes (Int. Cl. 34).
First use Jan. 4, 1967.

SN 280,254. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

CALUMET

For Cigarettes (Int. Cl. 34).
First use July 26, 1967.

SN 280,255. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

DUVAL

For Cigarettes (Int. Cl. 34).
First use Sept. 1, 1967.

SN 280,256. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

COURIER

For Cigarettes (Int. Cl. 34).
First use Aug. 31, 1967.

SN 280,257. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

REGATTA

For Cigarettes (Int. Cl. 34).
First use Aug. 31, 1967.

SN 280,258. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

POINTER

For Cigarettes (Int. Cl. 34).
First use Aug. 31, 1967.

SN 280,259. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

GOLD STRIPE

For Cigarettes (Int. Cl. 34).
First use Aug. 31, 1967.

SN 280,260. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

EMPIRE

For Cigarettes (Int. Cl. 34).
First use July 26, 1967.

SN 280,261. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

GLOBE

For Cigarettes (Int. Cl. 34).
First use Aug. 31, 1967.

Class 18—Medicines and Pharmaceutical Preparations

SN 225,466. Beecham Group Limited, d.b.a. Beecham Research Laboratories, Brentford, Middlesex, England. Filed Aug. 11, 1965.

BRL

For Antibiotics (Int. Cl. 5).
First use June 17, 1963; in commerce Nov. 8, 1954.

SN 259,445. Merck & Co., Inc., Rahway, N.J. Filed Nov. 25, 1966.

VITMOL

For Pharmaceutical Preparation for Use as a Tonic and Stimulant (Int. Cl. 5).
First use Nov. 15, 1966.

SN 259,838. La Preferida Tropical Products, Inc., Chicago, Ill. Filed Dec. 1, 1966.

SOL

For Rubbing Alcohol and Cough Syrup (Int. Cl. 5).
First use Aug. 31, 1958.

SN 271,158. The Kendall Company, Walpole, Mass. Filed May 10, 1967.

PROCTETS

For Disposable Medicated Tissues for Use in Treating Various Skin Disorders (Int. Cl. 5).
First use Oct. 7, 1966.

Class 19—Vehicles

SN 258,397. Monroe Auto Equipment Company, Monroe, Mich. Filed Nov. 10, 1966.

ROAD MASTER

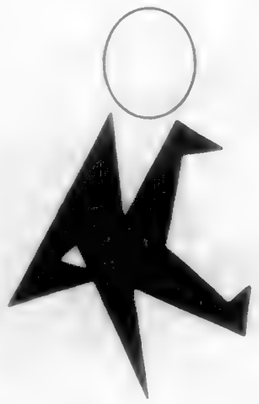
Owner of Reg. No. 766,240.
For Vehicle Shock Absorbers (Int. Cl. 12).
First use July 1, 1960.

SN 266,194. Bombardier Snowmobile Ltd., Valcourt, Quebec, Canada. Filed Mar. 8, 1967.

J5

For Tracked Vehicles Primarily Used for Hauling in Snow Country and Off-the-Road Terrain (Int. Cl. 12).
First use Oct. 27, 1954; in commerce Nov. 27, 1954.

SN 268,284. Auto-Kool, Inc., Lawton, Okla. Filed Apr. 4, 1967.



The mark consists of the stylized letters "AK" and design.
For Automobile Air-Conditioners (Int. Cl. 11).
First use Feb. 3, 1965.

SN 271,629. S. H. Leggitt Company, Marshall, Mich. Filed May 16, 1967.

EAGLE GRIP

For Detachable, Fender Mounted Rearview Mirrors (Int. Cl. 12).
First use Mar. 31, 1965.

SN 271,752. Biscayne Manufacturing Corporation, Miami, Fla. Filed May 18, 1967.

BODYGUARD

For Automobile Trim Strip (Int. Cl. 12).
First use January 1967.

Class 20 — Linoleum and Oiled Cloth

SN 256,340. American Rubber Corporation, Albertville, Ala. Filed Oct. 13, 1966.

MARLON

For Vinyl Floor Tile (Int. Cl. 19).
First use Mar. 2, 1966.

SN 263,351. Congoleum-Nairn Inc., Kearny, N.J. Filed Jan. 26, 1967.

HORIZON

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles (Int. Cl. 27).
First use Dec. 22, 1966.

SN 263,353. Congoleum-Nairn Inc., Kearny, N.J. Filed Jan. 26, 1967.

FLAMENCO

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles (Int. Cl. 27).
First use Dec. 22, 1966.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 248,251. Proctor-Silex Incorporated, Philadelphia, Pa., by merger and assignment from The Proctor-Silex Corporation, Philadelphia, Pa. Filed June 16, 1966.

lifelong

For Electric Irons, Toasters, and Coffeemakers (Int. Cls. 9 and 11).
First use May 23, 1966.

SN 250,712. The Manitowoc Company, Inc., Manitowoc, Wis. Filed July 21, 1966.

FROST-AWAY

For Automatic Electrical Controls for Refrigeration Defrosting Systems (Int. Cl. 9).
First use Dec. 12, 1960.

SN 251,911. General RF Fittings, Inc., Boston, Mass. Filed Aug. 8, 1966.

PTM

Owner of Reg. No. 708,030.
For Coaxial Transmission Line Apparatus, Parts and Components—Namely, Coaxial Terminations and Shorts (Int. Cl. 9.)
First use July 27, 1966.

SN 253,271. Automatic Valve Corporation, Farmington, Mich. Filed Aug. 29, 1966.

CYCLEMASTER

For Solenoid Operated Pilot Valve and Valve Timer Combination (Int. Cl. 9).
First use on or about June 21, 1966.

SN 254,029. Abbey Automation Systems, Inc., Linden, N.J. Filed Sept. 8, 1966.

Firepower

For Rectifier Circuits (Int. Cl. 9).
First use January 1966.

SN 255,944. Hi-Altitude Instrument Co., Inc., Denver, Colo. Filed Sept. 30, 1966.

HAICO

For Voltage Regulator (Int. Cl. 9).
First use on or about Oct. 1, 1963.

SN 256,161. Wanlass Electric Co., Santa Ana, Calif. Filed Oct. 10, 1966.

WANLASS ELECTRIC CO.

Applicant disclaims the words "Electric Co." apart from the mark as shown.
For Electrical Power Supplies, Voltage Regulators, and Filter Circuits (Int. Cl. 9).
First use Aug. 24, 1965.

SN 260,093. Steroline Systems Corporation, Santa Fe Springs, Calif. Filed Dec. 5, 1966.

Steroline

The drawing is lined for the color blue which is claimed as a preferred though not essential feature of the mark.
For Electronic Steriliser for Sterilising Liquids by Ultra-Violet Light (Int. Cl. 11).
First use Oct. 31, 1966.

SN 262,773. Dictograph Products Inc., Danbury, Conn. Filed Jan. 18, 1967.

UNICOM

For Electronic Communication Unit for Paging and Voice or Sound Signalling (Int. Cl. 9).
First use Dec. 14, 1966.

SN 263,417. United Air Specialists, Inc., Cleveland, Ohio. Filed Jan. 26, 1967.

CRYSTAL-AIRE

For Electronic Air Filtration and Cleaning Apparatus (Int. Cl. 11).
First use Dec. 1, 1966.

SN 263,957. Sireno Signal Mfg. Corp., Kearny, N.J. Filed Feb. 3, 1967.

TECRAFT

For Converters for Use With Radio and Wireless Communication Receivers (Int. Cl. 9).
First use in 1958.

SN 265,779. Alpha Industries, Inc., Newton Upper Falls, Mass. Filed Mar. 2, 1967.

MTI

The mark comprises the stylized letters "MTI" and design.
For Microwave and Solid State Components (Int. Cl. 9).
First use January 1965.

SN 265,780. Alpha Industries, Inc., Newton Upper Falls, Mass. Filed Mar. 2, 1967.

MO

The mark comprises the stylized letters "MO" and design.
For Microwave Diodes (Int. Cl. 9).
First use January 1965.

SN 268,296. Electro-Matic Products Co., Chicago, Ill. Filed Apr. 4, 1967.

DEMAG A TRON

For Demagnetizers Utilized for Demagnetizing Magnets, Both Electro-Magnets and Permanent Magnets, Used in Various Installations Such as in Machine Tools, and Including Manually Manipulated Control Elements and an Electronic Circuit Following Through a Predetermined Law of Operation Upon Manual Energization (Int. Cl. 9).
First use on or about Feb. 1, 1967.

SN 268,692. Brunswick Corporation, Chicago, Ill. Filed Apr. 10, 1967.

MERCATHODE

For Battery Actuated Solid State Circuitry, Including Electrodes, for Protecting Underwater Marine Propulsion Units Against Galvanic Corrosion (Int. Cl. 9).
First use at least as early as Jan. 5, 1967.

SN 269,497. Avantek, Inc., Santa Clara, Calif. Filed Apr. 19, 1967.

AVANTEK

For Solid State Amplifiers (Int. Cl. 9).
First use December 1965.

SN 269,874. Ethyl Corporation, Richmond, Va. Filed Apr. 24, 1967.

ETHYL

Owner of Reg. Nos. 187,410, 399,427, and others.
For Polyvinyl Chloride Pipe and Pipe Fittings Used as Electrical Conduit (Int. Cl. 9).
First use Nov. 25, 1964.

SN 270,341. Bantam-Lite, Inc., New York, N.Y. Filed May 1, 1967.

FLAIR

For Pocket Flashlights (Int. Cl. 11).
First use November 1966.

SN 274,468. Stromberg-Carlson Corporation, Rochester, N.Y. Filed June 21, 1967.

MINIWALL

For Telephone Sets (Int. Cl. 9).
First use Apr. 28, 1967.

SN 274,470. H. J. Theiler Corporation, Whitinsville, Mass. Filed June 21, 1967.

MINK

For Wall Plates for Switches, Electric Receptacles, Telephone Outlets, and Lights (Int. Cl. 9).
First use June 15, 1966.

SN 274,556. Charles Messenger, North Hollywood, Calif. Filed June 22, 1967.

MICROCYCLE

For Radio Transceivers and Receivers (Int. Cl. 9).
First use Jan. 15, 1967.

SN 274,670. Spartans Industries, Inc., New York, N.Y. Filed June 23, 1967.

K LINE

For Radios (Int. Cl. 9).
First use Feb. 1, 1966.

SN 274,674. System Analyser Corp., Nokomis, Ill. Filed June 23, 1967.

ROTOVERTER

For Electrical Rotary Converters (Int. Cl. 9).
First use Jan. 12, 1966.

SN 274,699. American District Telegraph Company, New York, N.Y. Filed June 26, 1967.

ADT

Owner of Reg. Nos. 700,676, 826,555, and others.
For Electrical Communication Equipment—Namely, Microphones, Horns, Amplifiers, Speakers and Control Equipment; Intercommunication Equipment—Namely, Speaker Intercom Systems and Telephone Intercom Systems; Nurses' Call Systems; and Message Programming Equipment (Int. Cl. 9).
First use May 1965 on intercommunication equipment.

SN 275,129. Federal Pacific Electric Company, Newark, N.J. Filed June 30, 1967.

PAGEANT

For Dimmers (Int. Cl. 9).
First use Apr. 25, 1967.

SN 275,607. Anzac Industries, Inc., Cleveland, Ohio. Filed July 10, 1967.

SEA HOOK

For Antennas (Int. Cl. 9).
First use May 9, 1967.

SN 275,649. Equality Plastics, Inc., New York, N.Y. Filed July 10, 1967.

EQUALITY

Owner of Reg. Nos. 750,547 and 788,800.
For Radios, Lighting Fixtures, Desk Lights, Flash Lights, Automobile Electrical Accessories—Namely, Defrosters, Warning Lights, Signal Lights, and Auto Vacuums (Int. Cls. 9 and 11).
First use Mar. 1, 1967.

SN 275,735. Amphenol Corporation, Broadview, Ill. Filed July 11, 1967.

APC-7

For Electrical Connectors and Parts Thereof (Int. Cl. 9).
First use May 31, 1967.

SN 275,975. Dee-Jay Overseas Trading Company, Inc., Hialeah, Fla. Filed July 13, 1967.

WAVERLY

For Radios (Int. Cl. 9).
First use Oct. 1, 1966.

SN 275,976. Dee-Jay Overseas Trading Company, Inc., Hialeah, Fla. Filed July 13, 1967.

WAVERLY SENTINEL

For Burglar Alarms (Int. Cl. 9).
First use Oct. 1, 1966.

SN 276,180. South Bay Cable Corp., Gardena, Calif. Filed July 17, 1967.

SBC

For Electrical Cables (Int. Cl. 9).
First use Feb. 1, 1962.

Class 22 — Games, Toys, and Sporting Goods

SN 245,660. Aktiebolaget Urfabriken, Svangsta, Sweden. Filed May 16, 1966.

CARDINAL

For Fishing Reels and Rods (Int. Cl. 28).
First use August 1963; in commerce March 1966.

SN 255,462. Robert E. Rodgers, Jr., d.b.a. Crajo Sports Company, Oxnard, Calif. Filed Sept. 29, 1966.

CRAJO BALL

No claim of exclusive right is made to the word "Ball" for the goods recited.
For Tethered Balls, Paddles and Ball Tether Blocks for Playing Paddle Ball Games (Int. Cl. 28).
First use Sept. 27, 1966.

SN 255,652. Richard L. Stevenson, Los Angeles, Calif. Filed Oct. 3, 1966.

MAKAHA

The word "Makaha" is derived from the Hawaiian term "Makahiki" which latter term designates a period of several months during which sports celebrations took place in ancient Hawaii. Owner of Reg. No. 789,337.
For Surfboards (Int. Cl. 28).
First use on or before Apr. 18, 1966.

SN 260,282. Aktiebolaget Urfabriken, Svangsta, Sweden. Filed Dec. 7, 1966.

TOBY

For Fishing Tackle (Int. Cl. 28).
First use Aug. 1, 1955; in commerce Aug. 1, 1964.

SN 260,662. Raymond L. Hall, Whippany, N.J. Filed Dec. 13, 1966.

SKI MATE

Applicant disclaims the word "Ski" apart from the mark as shown.
For Training and Exercising Apparatus for Simulating the Motions of Skiing With Respect to a Person in and on the Apparatus (Int. Cl. 28).
First use Sept. 1, 1966.

SN 266,344. Mangel Stores Corporation, New York, N.Y. Filed Mar. 9, 1967.

CY MANN

The mark "Cy Mann" is a fictitious name and not the name of any particular living individual.
For Golf Balls and Golf Clubs (Int. Cl. 28).
First use at least as early as January 1966.

SN 267,799. Milton Bradley Company, Springfield, Mass. Filed Mar. 29, 1967.

SLAP STICK

The word "Stick" is disclaimed apart from the mark as shown.
For Paddle Sticks and Cards, Sold as a Unit for Playing a Game (Int. Cl. 28).
First use Feb. 1, 1967.

SN 268,172. Eyerly Aircraft Co., Salem, Oreg. Filed Apr. 3, 1967.

SPIDER

For Amusement Park and/or Carnival Type Amusement Ride (Int. Cl. 28).
First use Feb. 7, 1967.

SN 270,494. Kohner Bros., Inc., East Paterson, N.J. Filed May 2, 1967.

PUZZLE PICKS

The word "Puzzle" is disclaimed from the mark as shown.
For Equipment Sold as a Unit for Playing a Puzzle-Type Game (Int. Cl. 28).
First use Apr. 17, 1967.

SN 271,945. Loral Corporation, New York, N.Y. Filed May 19, 1967.

PIZZA PARTY

For Operative Toy Oven (Int. Cl. 28).
First use Mar. 17, 1967.

SN 272,189. Ridge Runner Lures, Inc., Shreveport, La. Filed May 25, 1967.

Ole' Ben's

Speck-Taker

For Artificial Fishing Lures (Int. Cl. 28).
Filed Mar. 1, 1967.

SN 273,536. Spring Bloc Corporation of America, New York, N.Y. Filed June 9, 1967.

SPRING BLOC

For Golf Clubs (Int. Cl. 28).
First use Oct. 3, 1966.

SN 273,917. Wrather Corporation, Beverly Hills, Calif. Filed June 14, 1967.

LONE RANGER

Owner of Reg. Nos. 365,670; 527,916, and 770,530.
For Toy Guns and Holsters (Int. Cl. 28).
First use 1955.

SN 274,411. Chemold Corp., Jamaica, N.Y. Filed June 21, 1967.

CHEMFLITE

For Golf Balls (Int. Cl. 28).
First use June 9, 1967.

SN 277,903. Eyerly Aircraft Co., Salem, Oreg. Filed Aug. 9, 1967.

OCTOPUS

For Amusement Park and/or Carnival Type Amusement Ride (Int. Cl. 28).
First use Sept. 1, 1936.

SN 282,746. Mattel, Inc., Hawthorne, Calif. Filed Oct. 18, 1967.

BATHHOUSE BRASS

The term "Brass" is disclaimed apart from the mark as shown.
For Toy Musical Instruments (Int. Cl. 28).
First use Aug. 25, 1967.

SN 282,748. Mattel, Inc., Hawthorne, Calif. Filed Oct. 18, 1967.

FUN SPOTS

The term "Fun" is disclaimed apart from the mark as shown.
For Toy Bead-Making Sets (Int. Cl. 28).
First use Aug. 25, 1967.

SN 283,392. Mattel, Inc., Hawthorne, Calif. Filed Oct. 26, 1967.

UCKUCK BIRD

Applicant disclaims exclusive rights to the word "Bird," apart from the mark as shown for the goods recited.
For Stuffed Animal Toys (Int. Cl. 28).
First use Oct. 5, 1967.

SN 287,255. Mattel, Inc., Hawthorne, Calif. Filed Dec. 20, 1967.

TIFF

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Sept. 28, 1967.

SN 287,286. Erwin Weller Company, Sioux City, Iowa. Filed Dec. 20, 1967.

TWISTEX

For Fishing Leaders (Int. Cl. 28).
First use Dec. 1, 1960.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 239,090. Thrustbloc Limited, Oakville, Ontario, Canada. Filed Feb. 17, 1966.

THRUSTBLOC

Priority claimed under Sec. 44(d) on Canadian application, filed Aug. 19, 1965; Reg. No. 144,664, dated Apr. 1, 1966.
For Power Operated Valve Actuators (Int. Cl. 7).

SN 240,711. The Cross Company, Fraser, Mich. Filed Mar. 11, 1966.

MIL PAK

For Milling Heads for Machine Tools (Int. Cl. 7).
First use Feb. 8, 1966.

SN 252,895. John W. Roby & Co., Inc., Seattle, Wash. Filed Aug. 22, 1966.

ROBYCO

For Self-Priming and Centrifugal Pumps (Int. Cl. 7).
First use in the year of 1952.

SN 255,221. Monogram Industries, Inc., Monterey Park, Calif. Filed Sept. 27, 1966.

KLEKO

For Temporary Clamps for Clamping Two or More Work Thicknesses Together During Assembly Operation (Int. Cl. 6).
First use Mar. 17, 1958.

SN 257,079. Porta-Table Corporation, Chicago, Ill. Filed Oct. 24, 1966.

PORTA-TABLE

For Portable Cutting Table (Int. Cl. 7).
First use Jan. 5, 1965.

SN 260,065. Missouri-Rogers Corporation, Joplin, Mo. Filed Dec. 5, 1966.

ROADBUILDER

For Apron Feeders (Int. Cl. 7).
First use December 1959.

SN 260,240. Combination Pump Valve Company, Philadelphia, Pa. Filed Dec. 7, 1966.

PV

Owner of Reg. No. 712,013.
For Air Driven, Reciprocating Pumps (Int. Cl. 7).
First use March 1963.

SN 261,156. Norton-Aire, Inc., Erie, Pa. Filed Dec. 20, 1966.

NORTON-AIRE

For High and Low Pressure Air and Hydraulic Cylinders (Int. Cl. 7).
First use Aug. 3, 1964.

SN 263,070. International Parts Corporation, Chicago, Ill. Filed Jan. 23, 1967.

INPARCO

For Mufflers for Internal Combustion Engine Exhaust Systems (Int. Cl. 12).
First use on or about Dec. 22, 1966.

SN 263,071. International Parts Corporation, Chicago, Ill. Filed Jan. 23, 1967.

INPARCO

For Mufflers for Internal Combustion Engine Exhaust Systems (Int. Cl. 12).
First use on or about Dec. 22, 1966.

SN 264,493. American Hospital Supply Corporation, Evanston, Ill. Filed Feb. 13, 1967.

TOMAC

Owner of Reg. Nos. 326,450, 732,775, and 836,601.
For Hypodermic Needle Sharpeners, Mechanical Bed Lifts, Clamps for Controlling Flow Through Resilient Tubing, and Razors and Razor Blades (Int. Cls. 7 and 8).
First use on or before June 1, 1964.

SN 264,611. TRW Inc., Euclid, Ohio. Filed Feb. 13, 1967.

MRC TRW

The drawing is lined for the color yellow. Owner of Reg. Nos. 528,062, 620,549, and others.
For Ball, Roller, and Laminated Bearings (Int. Cl. 7).
First use Aug. 11, 1966.

SN 265,844. Carl Pohl, Brigantine, N.J. Filed Mar. 2, 1967.

X-80

For Automatic Electronically Controlled Equipment for Typewriters for Feeding Work Pieces to Typewriters and Positioning the Work Pieces for Manual or Automatic Typing on the Work Pieces, and Removing the Work Pieces (Int. Cl. 9).
First use May 1965.

SN 266,947. Textron Industries, Inc., Rockford, Ill. Filed Mar. 16, 1967.

TORX

For Heading Machine Punches (Int. Cl. 7).
First use Feb. 3, 1967.

SN 267,331. Hewitt-Robins Incorporated, Stamford, Conn. Filed Mar. 22, 1967.

LEVEL-LINE

For Conveyor Chain (Int. Cl. 7).
First use October 1966.

SN 267,621. Feed Service Corporation, Crete, Nebr. Filed Mar. 27, 1967.

MORAMATIC

For Liquid Feeders for Controlled and Free Choice Feeding of Animals (Int. Cl. 7).
First use May 15, 1966.

SN 267,726. Channel Construction, Inc., Keene, N.H. Filed Mar. 28, 1967.

BIG THUMB

For Clamping Attachment for Backhoes (Int. Cl. 7).
First use on or about Apr. 1, 1965.

SN 268,837. Wood Conversion Company, St. Paul, Minn. Filed Apr. 7, 1967.

CONWED

Owner of Reg. Nos. 820,946, 821,197, and others.
For Self-Propelled Logging Equipment Particularly a Transport for Logs (Int. Cl. 7).
First use on about June 1, 1966.

SN 270,868. Allyn Distributing Company, Denver, Colo. Filed May 8, 1967.

ALCO

For Sewing Machines, Attachments Therefor and Parts Thereof (Int. Cl. 7).
First use July 21, 1966.

SN 270,912. Esco Corporation, Portland, Oreg. Filed May 8, 1967.

KWIK TIP

Owner of Reg. No. 780,947.
For Replacement Parts for Crushing and Mixing Machinery—Namely, Impeller Bars and Hammer Assemblies (Int. Cl. 7).
First use Mar. 31, 1967, on hammer assemblies.

SN 270,919. Huyck Corporation, Rensselaer, N.Y. Filed May 8, 1967.

VACUFOIL

For Vacuum Augmented Dewatering Units for Use in Papermaking Machinery (Int. Cl. 7).
First use Apr. 26, 1967.

SN 271,196. J. Wiss and Sons Co., Newark, N.J. Filed May 10, 1967.

RE-NU

For Handles for Tools (Int. Cl. 8).
First use May 1, 1926.

SN 271,382. Nicholson File Company, Providence, R.I. Filed May 12, 1967.

Phoenix

For Saws (Int. Cl. 7).
First use Jan. 30, 1967.

SN 271,519. Rollway Bearing Company, Inc., Liverpool, N.Y. Filed May 15, 1967.

Air-Rol

For Roller Bearings (Int. Cl. 7).
First use Oct. 16, 1959.

SN 271,529. Alfred W. Schmidt, Saville, Ohio. Filed May 15, 1967.

MULTI-POWER

For Pneumatic and Hydraulic Cylinders (Int. Cl. 7).
First use Feb. 14, 1967.

SN 271,530. Alfred W. Schmidt, Seville, Ohio. Filed May 15, 1967.

THE PANCAKE LINE

For Pneumatic and Hydraulic Cylinders (Int. Cl. 7).
First use Oct. 10, 1956.

SN 271,925. Custom-Built Machinery, Inc., York, Pa. Filed May 19, 1967.

AD-A-CARD

For Machines To Feed Printed Inserts and the Like to High Speed Web Equipment (Int. Cl. 7).
First use Aug. 5, 1966.

SN 281,734. Watco Machine Products, Inc., Troy, N.Y. Filed Oct. 3, 1967.

TROY-BILT

For Self-Propelled Rotary Tillers for Use in Cultivating Gardens and the Like (Int. Cl. 7).
First use Aug. 23, 1967.

SN 282,656. Wilbur A. Larson, d.b.a. Hi-Life Rubber Products, Johnson Creek, Wis. Filed Oct. 17, 1967.

MILK MAID

For Milking Equipment—Namely, Inflations (Int. Cl. 7).
First use Sept. 22, 1967.

SN 282,657. Wilbur A. Larson, d.b.a. Hi-Life Rubber Products, Johnson Creek, Wis. Filed Oct. 17, 1967.

The representation of the milking inflations is disclaimed apart from the mark as shown.
For Milking Equipment—Namely, Inflations (Int. Cl. 7).
First use Sept. 22, 1967.

SN 282,750. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Oct. 18, 1967.

LOC PACK

For Machine for Dispensing Adhesive Tape (Int. Cl. 7).
First use Aug. 9, 1967.

SN 283,297. M.H.H. Engineering Company Ltd., Surrey, England. Filed Oct. 26, 1967.

TORQUEMASTER

For Torque Limiting Screwdrivers (Int. Cl. 8).
First use December 1956; in commerce Feb. 4, 1965.
Subj. to Intf. with SN 242,857 and SN 242,858.

Class 26—Measuring and Scientific Appliances

SN 234,833. Bausch & Lomb Incorporated, Rochester, N.Y., assignee of National Patent Development Corporation, New York, N.Y. Filed Dec. 17, 1965.

SOFLENZ

Owner of Reg. No. 279,937 and others.
For Contact Lenses (Int. Cl. 9).
First use Aug. 10, 1965.

SN 242,858. Torque Controls, Inc., South El Monte, Calif. Filed Apr. 6, 1966.

TORQUEMASTER

For Torque Testers and Torque Gages (Int. Cl. 9).
First use Feb. 23, 1966.
Subj. to Intf. with SN 283,297.

SN 243,188. Particle Data, Inc., Elmhurst, Ill. Filed Apr. 11, 1966.

CELLOSCOPE

For Particle Counter and Size Analyzer for the High Speed Automatic Counting and Sizing of Cells, Particulates, and Contaminants (Int. Cl. 9).
First use June 11, 1965.

SN 251,938. Machine-O-Matic, Inc., Evanston, Ill. Filed Aug. 8, 1966.

TATI

For Electronic Equipment for Measuring the Thickness of a Coating Which Is Applied to a Moving Web, and for Regulating the Rate of Movement of the Web Accordingly (Int. Cl. 9).
First use on or about June 8, 1966.

SN 254,229. Bolt Beranek and Newman Inc., Cambridge, Mass. Filed Sept. 12, 1966.

bbn

For Electronic, Electrical, and Mechanical Systems Which Transmit and Receive Data in Graphical and Alpha-Numeric Form and Which Display Same (Int. Cl. 9).
First use Nov. 1, 1965.

SN 255,795. General Dynamics Corporation, Rochester, N.Y. Filed Oct. 5, 1966.

SUBTRAC

For Underwater Tracking Systems for Locating and Tracking Underwater Objects Such as Submarines and Divers (Int. Cl. 9).
First use at least as early as June 13, 1966.

SN 255,859. Autoscan, Inc., Culver City, Calif. Filed Oct. 6, 1966.

AUTOSCAN

For Electronic Instruments for Measuring Performance Characteristics of Automobile Engines, Such as the Ignition Characteristics of the Cylinders in the Engines (Int. Cl. 9).
First use May 1, 1956.

SN 255,884. HC Electronics, Inc., Tiburon, Calif. Filed Oct. 6, 1966.

PHONIC EAR

For Auditory Trainer for Amplifying Sounds for Hard of Hearing Individuals (Int. Cl. 9).
First use on or about June 6, 1966.

SN 256,477. Sickles Enterprises, Inc., Scottsdale, Ariz. Filed Oct. 14, 1966.

EMBY

For Photographic Equipment—Namely, a Vertical Optical Printer, Having Parts Including the Following: Film Notcher-Cutter, Lens, Photocell Timer, Condenser, Electric Counter, Reflexviewer, and Accessory Kit (Int. Cl. 9).
First use September 1953.

SN 257,035. Conductron Corporation, Ann Arbor, Mich. Filed Oct. 24, 1966.

FOPEN

For Radar Systems and Equipment—Namely, Antennas, Transmitters, Receivers, Digital Moving Target Equipment and Control Systems (Int. Cl. 9).
First use Dec. 3, 1965.

SN 257,678. Wire Hardware Mfg. Inc., Michigan City, Ind. Filed Oct. 31, 1966.

See Aids

For Eyeglass Accessory Products—Namely, a Repair Kit Consisting of Screwdriver, Magnifying Glass and Replacement Screws; Pressure Pads for Application to Pertinent Parts of Eyeglass Frame; Rubber Hinge Rings; Rubber Sleeves for Back End of Temple Pieces; and Aluminum Chain for Attachment to Temple Pieces (Int. Cl. 9).
First use Sept. 1, 1966.

SN 257,921. Athena Controls, Incorporated, Conshohocken, Pa. Filed Nov. 4, 1966.

ATHENA

For Industrial Heat Sensitive Electronic Systems—Namely, Thermistors, Thermocouples and Related Circuits for Controlling Heat, Recording Temperatures, and Indicating Temperatures (Int. Cl. 9).
First use on or about Apr. 12, 1965.

SN 260,256. Howe Richardson Scale Company, Clifton, N.J. Filed Dec. 7, 1966.

54 XL

For Weighing Apparatus—Namely, Scales (Int. Cl. 9).
First use April 1965.

SN 262,404. Data Pathing Incorporated, Sunnyvale, Calif. Filed Jan. 12, 1967.

DPI SOLAR

For Computerized Data Collection Systems and Parts Therefor (Int. Cl. 9).
First use Nov. 25, 1966.

SN 263,684. The New York Air Brake Company, New York, N.Y. Filed Jan. 31, 1967.

BIF

For Flow Meters for Liquids, Flow Meters for Gases, Flow Meters for Dry Bulk Material, Rotary Integrating Flow Meters, Rate of Flow Controllers, Fluid Pressure Controllers, Multiple Valve Control Systems, Metering Valves, Flow Indicators, Flow Recorders, Flow Totalizers, Volumetric Feeders and Weighers, Gravimetric Feeders and Weighers, Chlorine Gas Feeders, Mechanical Controllers, Pneumatic Controllers, Electric Controllers, Devices for Translating a Variable Input Quantity Into a Pneuamtic Pressure Output, Electric Telemeters, Pneumatic Telemeters, Telemetric Controllers, and Parts and Accessories Therefor (Int. Cl. 9).
First use July 1954 on multiple valve systems.

SN 265,390. Avant Incorporated, Lincoln, Mass. Filed Feb. 24, 1967.

MONOCARD

For Camera for Photocomposing and Printing by Photography a Composite Identification Card Bearing a Photograph of a Subject and Related Printed Identification Data (Int. Cl. 9).
First use Oct. 7, 1966.

SN 265,438. Ross Porta-Plant, Inc., Brownwood, Tex. Filed Feb. 24, 1967.

KARD-A-MATIC

For Automatic Punch Card Systems for Controlling and Recording the Batching, Mixing and Discharging of Certain Predetermined Materials (Int. Cl. 9).
First use Jan. 3, 1967.

SN 265,441. Scott Industries, Inc., Lancaster, N.Y. Filed Feb. 24, 1967.

SCOTT-GLO

For Illuminated Control Panels (Int. Cl. 11).
First use on or about Jan. 23, 1967.

SN 267,635. Roy H. Jellissen, d.b.a. R. Jellisen Mfg. Co., River Grove, Ill. Filed Mar. 27, 1967.

NAVIDERS

For Interval Dividers for Use in Conjunction With Sectional Navigational Charts (Int. Cl. 9).
First use Dec. 27, 1965.

SN 269,179. Gamco Industries, Inc., d.b.a. Educational Computer Products, Big Spring, Tex. Filed Apr. 14, 1967.

MATH-MASTER

Owner of Reg. Nos. 693,200, 695,313, and 755,069.
For Educational Computers (Int. Cl. 9).
First use Mar. 16, 1967.

SN 269,572. Science Accessories Corporation, Southport, Conn. Filed Apr. 19, 1967.

MIDAS

For Modular Readout Device for Digitising and Sorting Data From Magnetostrictive Spark Chamber and Other Transducers (Int. Cl. 9).
First use August 1966.

SN 269,869. Electronic Automation Systems, Inc., Grand Island, N.Y. Filed Apr. 24, 1967.

FORMATEL

For Formation Tester for Measuring the Uniformity of a Moving Web by On-Machine Scanning (Int. Cl. 9).
First use Aug. 16, 1965.

SN 271,966. Science Accessories Corporation, Southport, Conn. Filed May 19, 1967.

SAC

For Components of a Data-Acquisition System for Use in Physics Experiments—Namely, Spark Chambers, Spark Gaps, Spark Chamber Pulsers, High Voltage Probes, Adjustable Delays, Multiple Input Data Acquisition System, Memory Systems (Int. Cl. 9).
First use March 1967.

SN 272,203. Paragon Electric Company, Inc., Two Rivers, Wis. Filed May 23, 1967.

CHRONO-TEMP

For Electrically Operated Controls, and Parts Thereof, Having Time Oriented Operation To Control a Flow of Current to Electrical Equipment (Int. Cl. 9).
First use May 1963.

SN 272,204. Paragon Electric Company, Inc., Two Rivers, Wis. Filed May 23, 1967.

CHRONO-SPRAY

Owner of Reg. No. 562,791.
For Electrically Operated Controls, and Parts Thereof, Having Time Oriented Operation To Control a Flow of Current to Electrical Equipment (Int. Cl. 9).
First use August 1948.

SN 273,735. Baldwin-Lima-Hamilton Corporation, d.b.a. BLH Electronics, Chicago, Ill. Filed June 13, 1967.

THERMOTIP

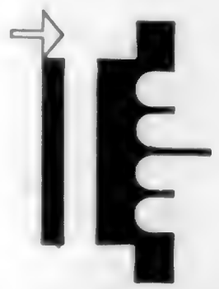
For Recording Oscillographs—Namely, Electronic High Speed Strip Chart Recorders (Int. Cl. 9).
First use on or prior to Sept. 1, 1965.

SN 275,879. Standard Gage Company, Inc., Poughkeepsie, N.Y. Filed July 12, 1967.

INTERBLOC

For Comparator Gages (Int. Cl. 9).
First use Jan. 25, 1966.

SN 276,233. Electro Development Corporation, Seattle, Wash. Filed July 18, 1967.

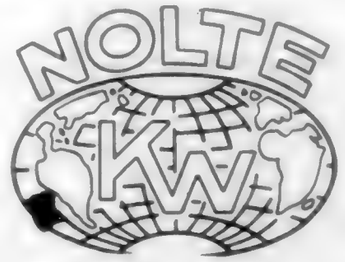


For Electrical Proximity Switches (Int. Cl. 9).
First use Apr. 4, 1967.

SN 277,415. A.O.K. Tool Corp., Ozone Park, N.Y. Filed Aug. 3, 1967.

For Precision Dial Indicators, Magnetic Holding Devices for Dial Measuring Instruments (Int. Cl. 9).
First use Nov. 15, 1965.

SN 278,112. Kingmann-White, Inc., Placentia, Calif. Filed Aug. 11, 1967.



For Accumulated Fluid Flow Integrators, Fluid Flow Meters, Fluid Flow Recording Integrators, and Parts Thereof (Int. Cl. 9).
First use May 31, 1967.

SN 287,041. Perfect Film & Chemical Corporation, Manhasset, N.Y. Filed Dec. 15, 1967.

For Stroboscopic Flash Attachment for Cameras (Int. Cl. 9).
First use Sept. 1, 1967.

SN 288,258. Ehrenreich Photo-Optical Industries, Inc., Garden City, N.Y. Filed Jan. 8, 1968.

For Photographic Equipment—Namely, Air Release, Blower Brush, Cable Releases, Camera Grips, Changing Bags, Coil Cords, Enlarging Easels, Flash Bracket, Flash Guns, Film for Minox, Film Wiper, Magnifying Glasses, Neck Straps, Print Tongs, Pen Brush, Print Roller, Self Timers, Shoulder Pad, Slide Binders, Strobe Lights, Thermometers, Tripods, Viewers, and Wrist Straps, and Pistol Grips (Int. Cl. 9).
First use July 11, 1963.

Class 27 — Horological Instruments

SN 246,433. Associated Barr Stores, Inc., d.b.a. Barr's and Barr's Jewelers, Philadelphia, Pa. Filed May 24, 1966.

Carlisle

For Watches and Parts Thereof (Int. Cl. 14).
First use May 18, 1956.

SN 271,337. Bulova Watch Company, Inc., Flushing, N.Y. Filed May 12, 1967.

For Watches and Parts Thereof (Int. Cl. 14).
First use Apr. 25, 1967.

Class 28 — Jewelry and Precious-Metal Ware

SN 274,890. Poole Silver Co., Inc., Taunton, Mass. Filed June 27, 1967.

POOLE

Owner of Reg. No. 766,[illegible].
For Holloware Made in Whole or in Part of Precious Metal (Int. Cl. 14).
First use in or about 1[illegible]3.

SN 277,202. Oneida Ltd., Oneida, N.Y. Filed July 31, 1967.
Owner of Reg. No. 840,877.

WILL 'O' WISP

For Sterling Silver Flatware (Int. Cl. 8).
First use July 5, 1967.

SN 279,123. Union Carbide Corporation, New York, N.Y. Filed Aug. 25, 1967.

Q

For Jewelry (Int. Cl. 14).
First use on or about July 18, 1967.

Class 31 — Filters and Refrigerators

SN 265,635. Richard D. Johnson, Des Plaines, Ill. Filed Feb. 28, 1967.

SAVANT

For Water Softeners and Systems and Components Therefor (Int. Cl. 11).
First use Feb. 13, 1967.

SN 268,034. Degremont S.A., Suresnes (Seine), France. Filed Mar. 31, 1967.

AQUAZUR

Owner of French Reg. No. 7,278, dated Feb. 1, 1961 (Versailles); Natl. Inst. No. 159,476.
For Filtration Apparatus for the Treatment of Water and Waste in a Purification Plant (Int. Cl. 11).

SN 269,346. Purolator Products, Inc., Rahway, N.J. Filed Apr. 17, 1967.

POSIPORE

For Filters, Elements, and Parts Thereof, for the Purification of Oil, Water, Fuel, Air, and Other Fluids (Int. Cl. 11).
First use on or about July 16, 1963.

Class 32 — Furniture and Upholstery

SN 260,117. U.S. Plywood-Champion Papers Inc., New York, N.Y., by merger and change of name from United States Plywood Corporation, New York, N.Y. Filed Dec. 2, 1966.

MODULE-X

For Furniture, i.e., Desks, Bookcases, Shelves, File Bins, File Cabinets, Magazine Shelves, Tables, and Partitioned Organizers; and Parts and Components for Furniture, i.e., Table Tops and Legs (Int. Cl. 20).
First use on or about Nov. 14, 1966.

SN 269,625. Edgar W. Blair, Republic, Mo. Filed Apr. 20, 1967.

ROTOSELL

For Merchandise Display Rack in the Form of a Wheel (Int. Cl. 20).
First use Oct. 20, 1965.

SN 279,034. Acme Spring Company, Los Angeles, Calif. Filed Aug. 25, 1967.

The words "Mattress" and "Springs" are disclaimed apart from the mark as shown.
For Mattresses and Boxsprings (Int. Cl. 20).
First use December 1954.

Class 33 — Glassware

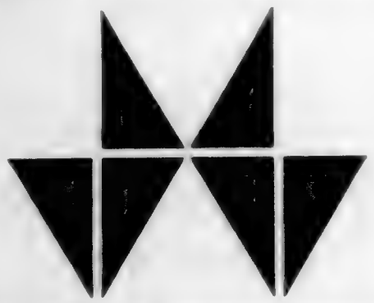
SN 254,749. United Glass Limited, Staines, Middlesex, England. Filed Sept. 19, 1966.

TITANISED

Owner of British Reg. No. B875,527, dated Feb. 11, 1965.
For Glass Containers and Tableware (Int. Cl. 21).

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 247,228. Harper-Wyman Company, Hinsdale, Ill. Filed June 3, 1966.



For Heating and Cooking Appliance Components—Namely, Valves and Temperature Controls for Gas Ranges (Int. Cl. 9).
First use about July 1962.

SN 262,790. Holophane Company, Inc., New York, N.Y. Filed Jan. 18, 1967.

DUO-PRISM

For Illumination Equipment—Namely, Lamp Panels, Screens, Globes, Reflectors, Refractors, and Fixtures (Int. Cl. 11).
First use Dec. 30, 1966.

SN 267,688. The Tappan Company, Mansfield, Ohio. Filed Mar. 27, 1967.

GALLERY

For Cooking Apparatus—Namely, Ranges Heated by Electricity or Gas (Int. Cl. 11).
First use Mar. 10, 1967.

SN 267,962. Midland-Ross Corporation, Toledo, Ohio. Filed Mar. 30, 1967.

TRIDENT

For Radiant Heating Tubes (Int. Cl. 11).
First use June 21, 1965.

SN 268,141. American Electrical Heater Company, Detroit, Mich. Filed Apr. 3, 1967.

LITTLE DANDY

For Soldering Irons (Int. Cl. 9).
First use October 1964.

SN 268,343. Superior Distributing Co., Inc., d.b.a. Royal Infra Red Industries, Tiffin, Ohio. Filed Apr. 4, 1967.

PATIO QUEEN

For Gas Heaters and Gas Grills (Int. Cl. 11).
First use Apr. 5, 1966.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 251,226. Parker-Hannifin Corporation, Cleveland, Ohio. Filed July 28, 1966.

Applicant disclaims the "O-Ring" portion of the mark apart from the mark as shown.
For O-Ring Packings (Int. Cl. 17).
First use April 1963.

SN 257,266. The Fitzgerald Manufacturing Company, Torrington, Conn. Filed Oct. 26, 1966.

FITZ-ALL

For Gaskets (Int. Cl. 17).
First use Oct. 3, 1966.

SN 257,268. The Fitzgerald Manufacturing Company, Torrington, Conn. Filed Oct. 26, 1966.

FITZ-IT

For Gaskets (Int. Cl. 17).
First use Oct. 3, 1966.

SN 272,117. Union Carbide Corporation, New York, N.Y. Filed May 22, 1967.

GRAFOIL

For Gaskets and Packing Rings (Int. Cl. 17).
First use on or about Feb. 3, 1967, on packing rings.

SN 272,525. Uniroyal, Inc., New York, N.Y. Filed May 26, 1967.

UNIROYAL MASTER

Owner of Reg. Nos. 642,083, 759,471, and others.
For Pneumatic Tires (Int. Cl. 12).
First use Feb. 16, 1966.

SN 288,163. Pyramid Incorporated, Newton, Iowa. Filed Jan. 5, 1968.

PYRATHANE

For Plastic Pulley Belts (Int. Cl. 7).
First use at least as early as Dec. 6, 1967.

Class 36 — Musical Instruments and Supplies

SN 256,283. Iramac N.V., d.b.a. Iramac, Hussum, Netherlands. Filed Oct. 12, 1966.

IRAMAC

For Phonograph Records (Int. Cl. 9).
First use Jan. 5, 1965; in commerce Nov. 11, 1965.

SN 261,441. Harold V. Allbaugh, d.b.a. Super-Sensitive Musical String Co., Chicago, Ill. Filed Dec. 27, 1966.

SUPER-SENSITIVE

For Musical Strings for Musical Instruments—Namely, Violins and Guitars (Int. Cl. 15).
First use July 1, 1941.

SN 263,024. Consolidated Merchandising Corp., New York, N.Y. Filed Jan. 23, 1967.

EXECU·CORDER

For Tape Recorders (Int. Cl. 9).
First use Oct. 5, 1965.

SN 265,047. Columbia Broadcasting System, Inc., New York, N.Y. Filed Feb. 20, 1967.

ODYSSEY

For Grooved Phonograph Records (Int. Cl. 9).
First use Nov. 17, 1966.

SN 265,283. Dot Records, Incorporated, d.b.a. Dot Recording Co., Hollywood, Calif. Filed Feb. 23, 1967.

Owner of Reg. Nos. 555,622 and 659,838.
For Pre-Recorded Magnetic Tape (Int. Cl. 9).
First use on or about Sept. 30, 1959; Apr. 1, 1950, as to the mark "Dot" in a different form.

SN 266,415. Ember Records International Inc., New York, N.Y. Filed Mar. 10, 1967.

For Phonograph Records (Int. Cl. 9).
First use April 1966.

SN 286,461. The Fred Gretsch Company, Inc., Brooklyn, N.Y. Filed Dec. 8, 1967.

ROGUE

For Amplifiers for Electric Guitars and Other Electrical Musical Instruments (Int. Cl. 9).
First use Feb. 15, 1967.

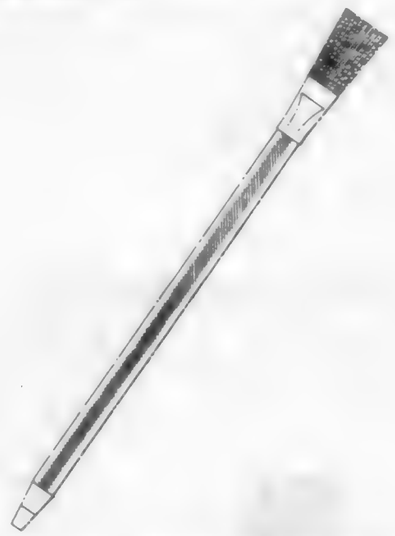
SN 286,462. The Fred Gretsch Company, Inc., Brooklyn, N.Y. Filed Dec. 8, 1967.

TORNADO

For Amplifiers for Electric Guitars and Other Electrical Musical Instruments (Int. Cl. 9).
First use Feb. 13, 1967.

Class 37 — Paper and Stationery

SN 257,477. A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. Filed Oct. 28, 1966.



The drawing is lined for the color pink. The configuration of the goods is disclaimed. Owner of Reg. Nos. 243,001, 575,754, and others.
For Pencil Shaped, Wood Encased Rubber Eraser, Black and/or Colored Leads (Int. Cl. 16).
First use Aug. 8, 1966.

SN 269,183. The B. F. Goodrich Company, Akron, Ohio. Filed Apr. 14, 1967.

TUFTANE

For Packaging Film (Int. Cl. 16).
First use Mar. 10, 1967.

SN 273,879. The Esterbrook Pen Company, Cherry Hill, N.J. Filed June 14, 1967.

Data·Pen

For Ball-Point Pens (Int. Cl. 16).
First use Feb. 9, 1967.

SN 273,991. Saf-T-Script, Inc., New York, N.Y. Filed June 15, 1967.

SAF-T-SCRIPT

For Prescription Forms for Physicians (Int. Cl. 16).
First use at least as early as Apr. 3, 1967.

SN 274,052. Eagle Pencil Company, Danbury, Conn. Filed June 16, 1967.

VANISH

For Ink Markers (Int. Cl. 16).
First use Apr. 11, 1967.

SN 274,200. S. M. Flickinger Co. Inc., Buffalo, N.Y. Filed June 19, 1967.

SUPER DUPER

Owner of Reg. Nos. 412,636, 816,309, and others.
For Paper Towels, Paper Napkins, and Toilet Tissues (Int. Cl. 16).
First use Apr. 12, 1967.

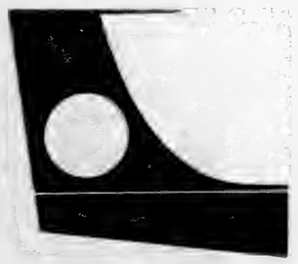
SN 276,109. Elmcraft Inc., Chicago, Ill. Filed July 17, 1967.
For Albums for Social Announcements and Greeting Cards (Int. Cl. 16).

ELEGANT

First use Jan. 1, 1965.

Class 38 — Prints and Publications

SN 254,746. UTA, Inc., Wichita, Kans. Filed Sept. 19, 1966.



For Instruction Materials—Namely, Manuals and Filmstrips, Used by Flying Instructors and Students (Int. Cl. 16).
First use on or about July 5, 1966.

SN 259,426. Hewlett-Packard Company, Palo Alto, Calif. Filed Nov. 25, 1966.

The lining in the drawing is part of the mark and does not represent color. Owner of Reg. Nos. 540,523, 645,097, and others.
For Newsletters and Technical Periodicals, Pamphlets and Books, Catalogs, Reprints of Articles, Data Sheets, Product and System Application Notes, Technical Bulletins, and Product and System Operating and Service Manuals, All of Said Goods Relating to Electrical, Measuring, Scientific, and Medical Equipment (Int. Cl. 16).
First use Feb. 25, 1965.

SN 268,431. Santa Rita Technology, Inc., Menlo Park, Calif. Filed Apr. 5, 1967.

SRT

For Pamphlets, Books, and Reports (Int. Cl. 16).
First use May 1964.

SN 271,946. Leisure League Travel, Inc., Princeton, N.J. Filed May 19, 1967.

ENJOY

For News and Information Letter (Int. Cl. 16).
First use May 12, 1967.

Class 39 — Clothing

SN 205,715. Norween Shoe Manufacturing Co., Inc., Norwich, N.Y. Filed Nov. 6, 1964.

TIGER TREADS

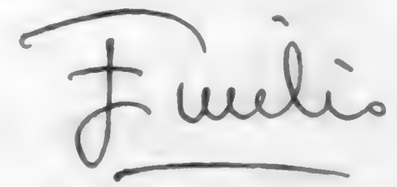
No claim is made to the word "Treads" apart from the mark as shown.
For Shoes (Int. Cl. 25).
First use Oct. 5, 1964.

SN 235,406. Jane & Jane Limited, London, England. Filed Dec. 28, 1965.

JANE & JANE

Priority claimed under Sec. 44(d) on British Reg. No. B886,303, dated Nov. 1, 1965.
For Articles of Clothing for Women—Namely, Day and Evening Dresses, Cocktail Wear, Two and Three Piece Suits and Coats (Int. Cl. 25).

SN 248,029. Emilio Pucci Societa a Responsabilita Limitata, Florence, Italy. Filed June 14, 1966.



For Dresses, Scarves, Skirts, Slacks, Bathing Suits, and Sun Suits (Int. Cl. 25).
First use 1949; in commerce 1949.

SN 258,824. Magnet Mills, Inc., New York, N.Y. Filed Nov. 16, 1966.

KNEE FREE

For Women's Hosiery (Int. Cl. 25).
First use Feb. 28, 1966.

SN 258,883. Automatic Thread Control Corp., Valley Stream, N.Y. Filed Nov. 17, 1966.

SANI-TOES

For Disposable Slippers (Int. Cl. 25).
First use Nov. 9, 1966.

SN 258,989. Farah Manufacturing Co., Inc., El Paso, Tex. Filed Nov. 18, 1966.

MODEL 38

For Men's Slacks and Jeans and Fabrics Sold Exclusively in the Form of Such Garments (Int. Cl. 25).
First use Sept. 2, 1966.

SN 259,310. Fata Imports, Inc., Los Angeles, Calif. Filed Nov. 23, 1966.

SIGNORINA

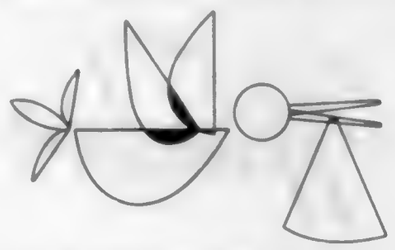
For Knitwear for Women and Children—Namely, Two and Three Piece Suits for Women, One Piece Dresses, Skirts, Slacks, and Jackets (Int. Cl. 25).
First use May 31, 1966.

SN 260,393. American Hospital Supply Corporation, Evanston, Ill. Filed Dec. 9, 1966.

TOMAC

Owner of Reg. Nos. 326,450, 732,775, and 836,601.
For Electrically Conductive Shoes and Shoe Covers, Slippers, and Aprons (Int. Cl. 25).
First use in or before September 1964.

SN 265,537. Maternity Modes, Niles, Ill. Filed Feb. 27, 1967.



For Maternity Garments (Int. Cl. 25).
First use February 1966.

SN 269,893. Honda Associates, Inc., New York, N.Y. Filed Apr. 24, 1967.

The oriental characters mean "judo" in the Japanese language. Applicant disclaims, as part of the mark, the oriental lettering and characters shown, and further disclaims the representation in the design of the human figures shown.
For Suits, Uniforms, Belts, Jackets, Pants, Helmets, Masks, Body Armor and Protectors, Gloves, Garments and Wearing Apparel for Karate, Judo, Jiu-Jitsu, Oriental Wrestling (Int. Cl. 25).
First use Sept. 1, 1966.

SN 270,915. The H. W. Gossard Co., Chicago, Ill. Filed May 8, 1967.

SWING-SETTE

For Foundation Garments (Int. Cl. 25).
First use Apr. 11, 1967.

SN 272,306. Proudfoot Hosiery Corp., New York, N.Y. Filed May 24, 1967.

Royal Cup

For Men's, Boys', and Girls' Socks and Hosiery and Men's and Boys' Shirts and Sweaters (Int. Cl. 25).
First use Apr. 1, 1966.

SN 272,724. Hochschild Kohn & Co., Incorporated, Baltimore, Md. Filed May 31, 1967.

HOCHSCHILD KOHN

For Ladies' Children's, and Men's Clothing—Namely, Sport Coats, Suits, Pants, Ties, Coats, Sweaters, Dresses; Millinery—Namely, Ladies' and Children's Hats, Blouses, Shirts, Lingerie, Hosiery, and Foundation Garments (Int. Cl. 25).
First use Aug. 8, 1965.

SN 282,407. Style Undies, Inc., Ozone Park, N.Y. Filed Oct. 12, 1967.

Jennifer Dale

"Jennifer Dale" is the name of a living individual whose consent is of record.
For Children's, Misses', Juniors', and Women's Undergarments—Namely, Bras, Girdles, Garter Belts, Panties, Pettipants, Braettes, Slips, Half Slips, Tights, Leotards, Pajamas, Nightgowns, Negligees, Peignoirs, Robes, Bathrobes, Sport Dressing Gowns, Culottes, Shifts, Bouffants, Slippers, Hats, and Swimsuits (Int. Cl. 25).
First use Mar. 5, 1966.

SN 283,192. Blue Bell, Inc., Greensboro, N.C. Filed Oct. 24, 1967.

LARAMIE

Owner of Reg. Nos. 776,661 and 828,603.
For Boots (Int. Cl. 25).
First use Oct. 12, 1967.

SN 283,613. Belle Neckwear Co., Inc., New York, N.Y. Filed Oct. 30, 1967.

SIL-KLEEN

For Four-In-Hand Neckties, Read-Made Ties, Bow Ties, Scarfs and Mufflers (Int. Cl. 25).
First use Aug. 15, 1967, on four-in-hand neckties.

SN 283,972. A. S. Beck Shoe Corporation, New York, N.Y. Filed Nov. 2, 1967.

Windsor Fashions

The word "Fashions" is disclaimed apart from the mark as shown.
For Women's Shoes (Int. Cl. 25).
First use Jan. 4, 1937.

SN 284,030. Phil Rose of California, Incorporated, Los Angeles, Calif. Filed Nov. 2, 1967.

Pant Pa dizers

For Women's Pants and Slacks (Int. Cl. 25).
First use Sept. 29, 1967.

SN 284,047. The Salem Company, Inc., Winston-Salem, N.C. Filed Nov. 2, 1967.

Old Salem

Owner of Reg. Nos. 502,956 and 740,070.
For Sportswear for Women, Girls, and Children—Namely, Jeans, Slacks, Shorts, Skirts, Jackets, Blouses, and Sweaters (Int. Cl. 25).
First use Nov. 1, 1962.

SN 284,110. The Salem Company, Inc., Winston-Salem, N.C. Filed Nov. 3, 1967.

OLD SALEM

Owner of Reg. Nos. 502,956 and 740,070.
For Sportswear for Women, Girls, and Children—Namely, Jeans, Slacks, Shorts, Skirts, Jackets, Blouses, and Sweaters (Int. Cl. 25).
First use Oct. 23, 1967.

SN 284,776. Young America Knits, Inc., New York, N.Y. Filed Nov. 13, 1967.

PLUMPKINS

For Swim Suits and Slack Sets (Int. Cl. 25).
First use Oct. 31, 1967.

SN 284,979. Apparel Corporation of America, Knoxville, Tenn. Filed Nov. 16, 1967.

ACA

For Rainwear (Int. Cl. 25).
First use Oct. 27, 1967.

SN 284,980. Apparel Corporation of America, Knoxville, Tenn. Filed Nov. 16, 1967.

APRIL SHOWERS

For Rainwear (Int. Cl. 25).
First use Oct. 27, 1967.

SN 284,983. A. S. Beck Shoe Corporation, New York, N.Y Filed Nov. 16, 1967.

Windsor

For Women's Shoes (Int. Cl. 25).
First use Jan. 4, 1937.

SN 285,200. Character Foundations, Inc., New York, N.Y. Filed Nov. 20, 1967.

"IMPOSSIBLE"

For Foundation Garments—Namely, Corsets, Panties, Corselets, Brassieres, Girdles, and Combination of Brassiere and Girdle (Int. Cl. 25).
First use Oct. 17, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 255,881. Dotties Limited, Brighton, Sussex, England. Filed Oct. 6, 1966.

DOTTIES

For Beauty Mark Patches for Application to the Skin (Int. Cl. 26).
First use Sept. 28, 1966; in commerce Oct. 5, 1966.

SN 263,021. Smoothy Products, Inc., Burbank, Calif. Filed Jan. 30, 1967.

MULTICOMB

For Multi-Pronged Hand Comb for Arranging and Styling Hair (Int. Cl. 21).
First use July 8, 1966.

SN 265,043. Chicago Trading Corporation, New York, N.Y. Filed Feb. 20, 1967.

Matchmaker

For Wigs, Wiglets, Toupees, Perukes, Pastiches, Switches, Braids, Chignons, Clusters, Curls, and Transformations (Int. Cl. 26).
First use Jan. 4, 1967.

SN 266,842. Abbott Tresses, Inc., Pittsburgh, Pa. Filed Mar. 16, 1967.

EMPIRE

For Wigs (Int. Cl. 26).
First use June 30, 1964.

SN 270,581. Komachiya Honten Co., Ltd., Taito-ku, Tokyo, Japan. Filed May 3, 1967.

Komachi Hair

Applicant disclaims the word "Hair" apart from the mark as shown. The word "Komachi" means "little village."
For Wigs and Artificial Locks of Hair (Int. Cl. 26).
First use Mar. 1, 1925; in commerce Jan. 10, 1966.

SN 277,917. S. H. Hirsch, Inc., New York, N.Y. Filed Aug. 9, 1967.

STC

For Women's Hair Rollers (Int. Cl. 26).
First use July 24, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 230,841. Kaplan Products and Textiles, Inc., New York, N.Y. Filed Oct. 21, 1965.

FABRICA EXOTICA

For Fabric Materials in the Piece Made of Rayon, Nylon, Cotton, Silk, and Combinations Thereof, Used Primarily in Connection With Clothing (Int. Cl. 24).
First use Oct. 1, 1965.

SN 270,540. Beacon Looms Inc., New York, N.Y. Filed May 3, 1967.

BEACON HOUSE

Owner of Reg. Nos. 436,580 and 836,800.
For Draperies, Cafes, Curtains, and Bedspreads (Int. Cl. 24).
First use Feb. 20, 1967.

SN 276,150. Malden Novelty Company, Malden, Mass. Filed July 17, 1967.

MINI-COVER

For Slip Covers for Furniture (Int. Cl. 24).
First use Feb. 15, 1967.

SN 284,141. Societa Commercio Tessuti Lanerie Drapperie "Scotland" S.p.A., Milan, Italy. Filed Nov. 6, 1967.

Scotlaine

For Novelty Fabrics Made Wholly or in Substantial Part of Wool (Int. Cl. 24).
First use July 1, 1954; in commerce Jan. 11, 1967.

Class 44—Dental, Medical, and Surgical Appliances

SN 256,559. H. Jelinek Dental Alloys, Inc., New York, N.Y. Filed Oct. 17, 1966.

ULTR BRAND

For Mercury, Silver, and Other Metallic Dental Alloys (Int. Cl. 5).
First use Jan. 1, 1942.

SN 265,339. Saml Dodsworth Company, Kansas City, Kans. Filed Feb. 23, 1967.

TRIM-TONE

Owner of Reg. No. 775,302.
For Massager (Int. Cl. 10).
First use Oct. 26, 1966.

SN 266,269. Williams Gold Refining Company Incorporated, Buffalo, N.Y. Filed Mar. 8, 1967.

PE

For Dental Materials and Specialties—Namely, Artificial Teeth and Crown and Bridge Resin (Int. Cls. 5 and 10).
First use Jan. 20, 1967.

SN 267,839. The Motloid Company, Incorporated, Chicago, Ill. Filed Mar. 29, 1967.

For Cavity Sealers for Dental Uses (Int. Cl. 5).
First use Dec. 27, 1966.

SN 269,199. Foremost-McKesson, Inc., New York, N.Y., by change of name from McKesson & Robbins, Incorporated, d.b.a. Gentec Hospital Supply Company, New York, N.Y. Filed Apr. 14, 1967.

GALAXY

For Elastic Bandages (Int. Cl. 10).
First use at least as early as Mar. 8, 1957.

SN 272,629. I.G.R. Corporation, New York, N.Y., assignee of Adolph Posner and Richard Inglima (joint owners), New York, N.Y. Filed May 29, 1967.

TONOPAK

For Endplates for Tonometers (Int. Cl. 10).
First use on or about May 4, 1967.

SN 273,264. The Dentists' Supply Company of New York, York, Pa. Filed June 7, 1967.

DUOPONT

For Artificial Teeth (Int. Cl. 10).
First use Feb. 25, 1958.

SN 282,753. Parke, Davis & Company, Detroit, Mich. Filed Oct. 18, 1967.

PARTEX

For Absorbable Cleaners for Medical Use (Int. Cl. 5).
First use on or before Oct. 6, 1967.

Class 45—Soft Drinks and Carbonated Waters

SN 256,709. American Dairy Queen Corporation, Minneapolis, Minn. Filed Oct. 19, 1966.

MR. MISTY

Owner of Reg. No. 699,518.
For Slush-Type Soft Drink in Different Flavors (Int. Cl. 32).
First use May 15, 1959.

SN 261,825. Fairmont Foods Company, Omaha, Nebr. Filed Jan. 3, 1967.

SNACKTIME

Owner of Reg. Nos. 714,234 and 786,896.
For Soft Drinks and Concentrates for Making the Same (Int. Cl. 32).
First use Aug. 2, 1966.

SN 284,549. New Century Beverage Company, San Francisco, Calif. Filed Nov. 13, 1967.

BELFAST

For Sparkling Waters and Soft Drinks (Int. Cl. 32).
First use 1877.

Class 46—Foods and Ingredients of Foods

SN 234,316. Van Brode Milling Co., Inc., Clinton, Mass. Filed Dec. 9, 1965.

SWEET & SLIM

The word "Sweet" is disclaimed apart from the mark as shown.
For Artificial Food Sweetener and Sugar Substitute (Int. Cl. 1).
First use Oct. 18, 1965.

SN 238,743. International Salt Company, Clarks Summit, Pa. Filed Feb. 14, 1966.

SLENDER SWEET

The word "Sweet" is disclaimed apart from the mark as shown.
For Sugar Substitute Used in the Flavoring of Food (Int. Cl. 1).
First use on or about Sept. 30, 1965.

SN 243,208. Textron, Inc., Providence, R.I. Filed Apr. 12, 1966.

HYGEL

For Product for Use as an Emulsifying Agent, Adhesive Agent and Thickener in Food Processing (Int. Cl. 1).
First use Oct. 14, 1965.

SN 244,242. C. J. Patterson Company, Kansas City, Mo. Filed Apr. 25, 1966.

DUTCH HEARTH

For Baked Products—Namely, Peanut Butter Rolls, Cheese and Cherry Rolls, Danish Apple Pastries, Lemon Cinnamon Rolls, Cherry Butter Coffee Cake, Peach Rolls, Butterscotch Sweet Rolls, Apricot and Pineapple Rolls, Raisin Sweet Rolls, Peanut Butter and Jelly Rolls, German Chocolate Cake, Brown 'n Serve Rolls, and Ready To Bake Bread (Int. Cl. 30).
First use Feb. 20, 1961.

SN 248,582. Armour and Company, Chicago, Ill. Filed June 21, 1966.

SILVER BRAND

The word "Brand" is disclaimed apart from the mark as shown.
For Vegetable Oleomargarine (Int. Cl. 29).
First use on or prior to Dec. 31, 1938.

SN 249,726. Breaux Bridge Fine Food Compagnie, Inc., Breaux Bridge, La. Filed July 7, 1966.

CAJUN COUNTRY

For Crawfish Patties and Crawfish Étouffée (Int. Cl. 29).
First use Apr. 18, 1966.

SN 255,025. The J. M. Smucker Company, Orrville, Ohio. Filed Sept. 23, 1966.

WITH A NAME LIKE SMUCKER'S IT HAS TO BE GOOD

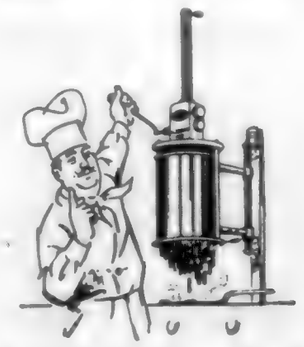
Owner of Reg. Nos. 506,885 and 753,791.
For Jellies and Preserves, Apple Butter, Ice Cream Topping of a Fruit Nature, of a Nut Nature, of a Syrup Nature, and of a Chocolate Nature, Fruit Syrups for Food Purposes, Peanut Buter, and Pickles (Int Cls. 29 and 30).
First use Aug. 31, 1966.

SN 257,274. House Foodstuff Industry Co., Ltd., Fuse-shi, Osaka-fu, Japan. Filed Oct. 26, 1966.

IN EVERY HOUSE
登録商標

No claim is made to the Japanese wording which means "registered trademark." Owner of Japanese Reg. No. 375,474, dated May 11, 1949.
For Curry Powder, Instant Curry, Instant Dessert Pudding Powder; Dairy Products—Namely, Cow, Sheep, and Goat Milk, Cream, Condensed Milk, Fermented Milk, and Beverages of Lactic Acid Material, Butter and Cheese; Pepper, Cayenne-Pepper, Horseradish, Instant Hash and Rice Meal, Instant Soup, Instant Frizzled Boiled Rice Meal, and Instant Stew (Int. Cls. 29 and 30).

SN 258,644. Rixona Conserven N.V., Warfum, Netherlands. Filed Oct. 28, 1966.



The picture of the chef is fanciful. Owner of Dutch Reg. No. 160,560, dated June 30, 1966.
For Dehydrated Potatoes (Int. Cl. 29).

SN 259,520. Columbia Packing Company, Boston, Mass. Filed Nov. 28, 1966.

SNACK-STRAMI

Owner of Reg. No. 828,642.
For Chopped, Pressed, Cooked Beef (Int. Cl. 29).
First use Oct. 20, 1966.

SN 262,512. Schmidt Baking Company, Inc., Baltimore, Md. Filed Jan. 13, 1967.

SCHMIDT'S
Delicatessen

Owner of Reg. Nos. 810,855, 811,821, and 824,156.
For Rye Bread (Int. Cl. 30).
First use November 1945.

SN 268,352. The Borden Company, New York, N.Y. Filed Apr. 5, 1967.

CONE-AN-ZA

For Frozen Confection in an Edible Cone (Int. Cl. 30).
First use Dec. 13, 1966.

SN 269,347. The Red Barn System, Inc., Fort Lauderdale, Fla. Filed Apr. 17, 1967.

COUNTRY CRISP

The word "Crisp" is disclaimed apart from the mark as shown.
For Ready-To-Eat Fried Chicken Dispensed in Containers by Resturants (Int. Cl. 29).
First use Nov. 22, 1966.

SN 269,420. SCM Corporation, New York, N.Y., assignee of The Glidden Company, d.b.a. Durkee Famous Foods, Cleveland, Ohio. Filed Apr. 18, 1967.

KAOMEL

For Confectioners' Coating Butter (Int. Cl. 30).
First use Sept. 21, 1962.

SN 270,613. San Antonio Foreign Trading Co., San Antonio, Tex. Filed May 3, 1967.

FROST CREST

The word "Frost" is disclaimed apart from the mark as shown.
For Frozen Vegetables (Int. Cl. 29).
First use Jan. 27, 1967.

SN 271,546. Threemor Sales Co., Brooklyn, N.Y. Filed May 15, 1967.

WHITE COW

Owner of Reg. No. 265,662.
For Cocoanut Flavored Dairy Drink (Int. Cl. 29).
First use Aug. 11, 1964.

SN 271,547. Threemor Sales Co., Brooklyn, N.Y. Filed May 15, 1967.

PINK COW

Owner of Reg. No. 265,662.
For Strawberry Flavored Dairy Drink (Int. Cl. 29).
First use Aug. 11, 1964.

SN 273,372. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, Englewood, N.J. Filed June 8, 1967.

MR. CREAM

Applicant disclaims the word "Cream" apart from the mark as shown.
For Frozen Confections on Sticks (Int. Cl. 30).
First use Mar. 15, 1967.

SN 273,552. Heggblade-Marguleas Co., San Francisco, Calif. Filed June 12, 1967.

TASTILOPE

Owner of Reg. Nos. 767,269 and 839,253.
For Fresh Cantaloupes (Int. Cl. 31).
First use May 7, 1967.

SN 276,172. Pure Gold, Inc., Redlands, Calif. Filed July 17, 1967.

PURE GOLD

Owner of Reg. Nos. 195,437, 358,048, and others.
For Fresh Citrus Fruit (Int. Cl. 31).
First use on or about June 15, 1967.

SN 276,447. Geo. A. Hormel & Company, Austin, Minn. Filed July 20, 1967.

TOTEM PAK

The term "Pak" is disclaimed apart from the mark as shown.
For Wieners (Int. Cl. 29).
First use May 12, 1967.

SN 276,652. East Point Seafood Company, Seattle, Wash. Filed July 24, 1967.

CASSEROLE

For Canned Salmon and Canned Oysters (Int. Cl. 29).
First use 1946.

SN 278,664. Carbonell y Cia, de Cordoba, S.A., Cordoba, Spain. Filed Aug. 21, 1967.

"La Providencia" in English means "providence" or "the providence." Without waiving any common law rights thereon and solely for purposes of this registration, applicant disclaims the representation of the goods shown. Owner of U.S. Reg. No. 443,937.
For Edible Olive Oil (Int. Cl. 29).
First use 1867; in commerce 1867.

SN 284,534. Canada Packers Limited, Toronto, Ontario, Canada. Filed Nov. 13, 1967.

SHUR-GAIN

Owner of Canadian Reg. No. 136,191, dated June 12, 1964; and U.S. Reg. Nos. 699,940, 810,917, and others.
For Livestock Feeds and Concentrates, and Poultry Feeds and Concentrates (Int. Cl. 31).

SN 286,464. Kellogg Company, Battle Creek, Mich. Filed Dec. 8, 1967.

HOLLERS

For Vegetable and Cereal Derived Snack Food Products (Int. Cl. 30).
First use Nov. 29, 1967.

SN 287,123. Safeway Stores, Incorporated, Oakland, Calif. Filed Dec. 18, 1967.

GARDENSIDE

Owner of Reg. No. 638,557.
For Canned Fruit, Fresh Vegetables, and Fresh Fruit (Int. Cls. 29 and 31).
First use Feb. 1, 1961, on fresh vegetables.

SN 287,493. Philip Morris Incorporated, d.b.a. Clark Gum Co., New York, N.Y. Filed Dec. 26, 1967.

SIXY

For Chewing Gum (Int. Cl. 50).
First use Dec. 8, 1967.

SN 287,789. Tani Farms, Santa Maria, Calif. Filed Dec. 29, 1967.

West Road

For Fresh Vegetables (Int. Cl. 31).
First use Dec. 7, 1967.

SN 287,995. Southern Bakeries Company, Atlanta, Ga. Filed Jan. 3, 1968.

southern

Owner of Reg. Nos. 713,249 and 741,550.
For Bread (Int. Cl. 30).
First use on or about June 6, 1926.

Class 47 — Wines

SN 271,290. H. Sichel Son, Inc., New York, N.Y., assignee of Sichel & Fils Freres, Bordeaux, France. Filed May 11, 1967.

WAN FU

"Wan Fu" means "ten thousand happinesses."
For Wines (Int. Cl. 33).
First use July 31, 1965; in commerce Dec. 30, 1966.

SN 288,259. E. & J. Gallo Winery, d.b.a. The Andre Champagne Cellars, Modesto, Calif. Filed Jan. 8, 1968.

The picture of the man is fanciful. Owner of Reg. Nos. 807,607 and 825,035.
For Champagne and Sparkling Wine (Int. Cl. 33).
First use Dec. 4, 1967.

SN 288,260. E. & J. Gallo Winery, d.b.a. The Vintners of Eden Roc, Modesto, Calif. Filed Jan. 8, 1968.

The Vintners of EDEN ROC

No claim is made to the word "Vintners" apart from the mark as shown. Owner of Reg. Nos. 684,887, 840,970, and others.
For Champagne and Sparkling Wine (Int. Cl. 33).
First use Dec. 2, 1966.

Class 49 — Distilled Alcoholic Liquors

SN 249,652. Charles Kinloch & Company Limited, London, England. Filed July 6, 1966.

BONNIE CHARLIE

For Scotch Whisky (Int. Cl. 33).
First use 1933; in commerce September 1961.

SN 255,740. White Horse Distillers, Limited, Glasgow, Scotland. Filed Oct. 4, 1966.

Owner of U.K. Reg. Nos. 101,072, 761,048, and others.
For Whisky (Int. Cl. 33).
First use July 20, 1966; in commerce July 28, 1966.

SN 267,066. Schieffelin & Co., New York, N.Y. Filed Mar. 17, 1967.

RUMONA

For Liqueur (Int. Cl. 33).
First use Mar. 6, 1967.

SN 275,645. F. X. de Beukelaer, Anvers, Belgium. Filed July 10, 1967.

Applicant disclaims the word "Elixir" separate and apart from the mark as shown, reserving unto itself all common law rights which it may now have or which may arise hereinafter in said term. The signature appearing on the applicant's mark is that of F. X. de Beukelaer. Owner of U.S. Reg. No. 716,294.
For Liqueurs (Int. Cl. 33).
First use at least as early as 1933; in commerce at least as early as 1956.

Class 50 — Merchandise Not Otherwise Classified

SN 264,993. Warner Press, Inc., Anderson, Ind. Filed Feb. 17, 1967.

ART WOOD

Applicant disclaims the word "Wood" apart from the mark as shown without prejudice to its common law rights.
For Wood Plaques (Int. Cl. 20).
First use Jan. 1, 1940.

SN 271,128. Edith Citron, d.b.a. Living Tones, Boston, Mass. Filed May 10, 1967.

LIVING TONES

For Artificial Flowers (Int. Cl. 26).
First use March 5, 1966.

SN 271,436. Blockhead, Inc., New York, N.Y. Filed May 15, 1967.

BLOCKHEAD

For Form Upon Which a Wig Is Placed for Styling and/or Storage, Display Forms, and Closet Hat Forms (Int. Cl. 20).
First use Mar. 29, 1966.

SN 273,254. Chart-Pak, Inc., Leeds, Mass. Filed June 7, 1967.

Qik-eez

For Dry Transfer Hobby Lettering and Pressure Sensitive Hobby Tapes (Int. Cl. 16).
First use Apr. 12, 1967.

SN 278,676. The Enamel Products Company, Cleveland, Ohio. Filed Aug. 21, 1967.

KOROLINED

Owner of Reg. No. 580,613.
For Chalkboards (Int. Cl. 16).
First use July 28, 1967.

Class 51 — Cosmetics and Toilet Preparations

SN 248,494. L'OREAL, Paris, France. Filed June 20, 1966.

VISAGE 9

The word "Visage" is disclaimed apart from the mark as shown. Owner of French Reg. No. 516,522, dated Oct. 17, 1963 (Paris); Natl. Inst. No. 215,649.
For Pore Cleasing Lotion (Int. Cl. 3).

SN 255,825. Shaklee Products, Hayward, Calif. Filed Oct. 5, 1966.

For Men's Toiletries—Namely, Cologne, Deodorant, After Shave Lotion, Hair Groom Cream, Skin Conditioner, and Talcum Powder (Int. Cls. 3 and 5).
First use Aug. 13, 1963.

SN 257,685. Apex Beauty Products Manufacturing Corporation, d.b.a. Apex Beuaty Products, Baltimore, Md. Filed Nov. 1, 1966.

Just for You

For Cologne (Int. Cl. 3).
First use Sept. 20, 1966.

SN 259,302. Colgate-Palmolive Company, New York, N.Y. Filed Nov. 23, 1966.

SWITCH HITTER

For Personal Deodorant (Int. Cl. 5).
First use Sept. 14, 1966.

SN 260,435. International Laboratories Limited, Chessington, Surrey, England. Filed Dec. 9, 1966.

LINC-O-LIN

Owner of Reg. No. 806,474.
For Hand Creams (Int. Cl. 3).
First use 1959; in commerce 1959.

SN 260,734. John K. Diedrichs, d.b.a. House of Crayton, Cicero, Ill. Filed Dec. 14, 1966.

HOUSE OF CRAYTON

For Men's Cosmetic and Toilet Preparations—Namely, Body Rub Preparations, Colognes, and Skin Creams (Int. Cl. 3).
First use Aug. 18, 1966.

SN 266,524. Faultless Starch Company, Kansas City, Mo. Filed Mar. 13, 1967.

RAGGEDY ANN'S

For Baby Powder (Int. Cl. 3).
First use Feb. 27, 1967.

SN 268,113. Yardley of London, Inc., Totowa, N.J. Filed Mar. 31, 1967.

MINI-BLUSH

For Make-Up Blusher and Brush (Int. Cl. 3).
First use Feb. 23, 1967.

SN 268,575. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 7, 1967.

LIME ICE

Applicant disclaims any exclusive rights to the word "Lime" apart from the mark as shown. Owner of Reg. No. 805,735.
For After Shave Preparation (Int. Cl. 3).
First use Feb. 14, 1967.

SN 268,638. Yardley of London, Inc., Totowa, N.J. Filed Apr. 7, 1967.

ABASCUS

For Cologne, Dusting Powder, After Bath Freshener, and Bath Emollient (Int. Cl. 3).
First use Mar. 8, 1967.

SN 269,413. Gabrieleen Company, Inc., Chicago, Ill. Filed Apr. 18, 1967.

COME HITHER

For Professional Salon Cold Wave Lotion and Neutralizer, Professional Hair Spray, and Professional Hair Dressing Product (Int. Cl. 3).
First use Dec. 13, 1966.

SN 269,814. Yardley of London, Inc., Totowa, N.J. Filed Apr. 21, 1967.

SKIMMER

For Face Powder and Fluid Foundation (Int. Cl. 3).
First use Apr. 11, 1967.

SN 287,706. Sterling Drug Inc., New York, N.Y. Filed Dec. 28, 1967.

SATURA-CARRALENE

Owner of Reg. No. 594,339.
For Skin Cream, Skin Lotion, and Bubble Bath (Int. Cl. 3).
First use Nov. 9, 1967; June 16, 1953, as to "Satura."

Class 52 — Detergents and Soaps

SN 257,493. Jet Air Products Co., Dallas, Tex. Filed Oct. 28, 1966.

JET AIR

For Internal Flush Cleaner for Refrigeration Systems, and Upholstery Cleaner (Int. Cl. 3).
First use Jan. 9, 1966.

SN 269,665. Mandu Chemicals, Inc., New York, N.Y. Filed Apr. 20, 1967.

LUSTRE-X

For Cleaner and Restorative for Furs and Fur Products (Int. Cl. 3).
First use on or about Mar. 1, 1967.

SN 275,228. Clairol Incorporated, New York, N.Y. Filed July 3, 1967.

POSTPONE

For Hair Shampoo (Int. Cl. 3).
First use Apr. 5, 1967.

SN 275,279. Clairol Incorporated, New York, N.Y. Filed July 3, 1967.

MOMENTS NOTICE

For Hair Shampoo (Int. Cl. 3).
First use Apr. 5, 1967.

SN 279,196. Intercontinental Chemical Corporation, Cincinnati, Ohio. Filed Aug. 28, 1967.

PLUS ONE

For Liquid Household Detergents (Int. Cl. 3).
First use Aug. 9, 1967.

SN 283,191. American Home Products Corporation, New York, N.Y. Filed Oct. 24, 1967.

WASH-OUT

For Laundry Detergent (Int. Cl. 3).
First use Oct. 2, 1967.

SN 283,388. Alberto-Culver Company, Melrose Park, Ill. Filed Oct. 26, 1967.

ACCOLADE

For Dishwashing and Laundry Detergent (Int. Cl. 3).
First use July 18, 1967.

SN 287,864. The Procter & Gamble Company, Cincinnati, Ohio. Filed Jan. 2, 1968.

BIZ

Owner of Reg. No. 423,995.
For Dry, Granulated Sudsing Detergent Useful as a Pre-Soak in Laundry Use (Int. Cl. 3).
First use Dec. 1, 1945.

SERVICE MARKS

Class 100 — Miscellaneous

SN 234,178. Conserv, Inc., Long Beach, Calif. Filed Dec. 8, 1965.

CONSERV

For Engineering, Design and Drafting Services in the Mechanical, Electrical, Industrial, Civil, Chemical and Marine Engineering Fields, and Technical Services Relating Thereto (Int. Cl. 42).
First use July 28, 1962.

SN 250,036. S & S Food Service, Inc., Macon, Ga. Filed July 11, 1966.

SHANE'S

For Restaurant Services (Int. Cl. 42).
First use July 15, 1954.

SN 252,581. Robert E. Ladum, Portland, Oreg. Filed Aug. 17, 1966.

NOTEL MOTEL

The word "Motel" is disclaimed apart from the mark as shown.
For Providing Lodging Services for Tourists in Motels (Int. Cl. 42).
First use July 25, 1966.

SN 254,351. Zimgo Corporation, Inc., Des Moines, Iowa. Filed Sept. 12, 1966.

DIAMOND LIL'S

For Restaurant Services—Namely, Serving of Food and Beverages (Int. Cl. 42).
First use May 19, 1966.

SN 254,583. E. J. Burke, Jr., Inc., Buffalo, N.Y. Filed Sept. 16, 1966.

BURKE'S LAW

For Insurance and Industrial Investigations and Other Investigative Services and Security Services, Including Supplying Uniformed Watchmen, Special Police, and Patrol Services (Int. Cl. 42).
First use at least as early as February 1965.

SN 263,123. Stagecoach Properties, Inc., Salado, Tex. Filed Jan. 23, 1967.

STAGECOACH INN

No claim is made to the word "Inn" apart from the mark as shown.
For Restaurant and Motel Services (Int. Cl. 42).
First use 1945.

SN 287,704. Restaurant & Waldorf Associates, Inc., New York, N.Y. Filed Dec. 28, 1967.

PICCADILLY

For Restaurant Services (Int. Cl. 42).
First use Apr. 25, 1967.

SN 287,707. Trattoria, Inc., New York, N.Y. Filed Dec. 28, 1967.

ZUM ZUM

The drawing is lined for brown, but color is disclaimed as a feature of the mark.
For Restaurant Services (Int. Cl. 42).
First use Mar. 4, 1964.

Class 101 — Advertising and Business

SN 241,294. Winchester Retail Merchants Association, Inc., Winchester, Va. Filed Mar. 17, 1966.

WINCHESTER DAYS

For the purposes of registration no claim is made to the exclusive right to use "Winchester," but the applicant waives none of its common law rights therein.
For Promoting the Sale of the Goods or Services of Its Members by Means of an Annual Merchandise Sale (Int. Cl. 35).
First use July 21, 1950.

SN 251,624. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Aug. 3, 1966.

SKYTACULAR

For Promoting of Goods and Services of Others by Means of Aerial Advertising (Int. Cl. 35).
First use June 1, 1966.

SN 252,079. Dial-Dictation, Inc., Cranston, R.I. Filed Aug. 10, 1966.

PRIVADIAL

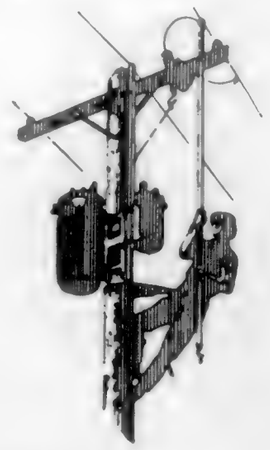
For Rendering Stenographic Services to Subscribers Who Telephone to Applicant Information To Be Transcribed and Delivered (Int. Cl. 35).
First use July 15, 1966.

SN 252,885. Package Exhibit Programs, Inc., Chicago, Ill. Filed Aug. 22, 1966.

PEP

For Assisting in and/or Operating Trade Shows for Others—Namely, Arranging and Preparing Overall Show Layouts, Engaging Services for Carrying Out the Shows, and Preparing Layouts for Individual Booths at Such Shows (Int. Cl. 35).
First use during February 1966.

SN 255,291. Carter-Watsey & Associates, Inc., Lake Wales, Fla. Filed Sept. 28, 1966.



The drawing is lined for red.
For Supply Representative Services for Numerous Manufacturers of Engineered Electrical Devices (Int. Cl. 35).
First use during 1955.

SN 264,809. E'Con Mills, Inc., Chattanooga, Tenn. Filed Feb. 16, 1967.

COMORO

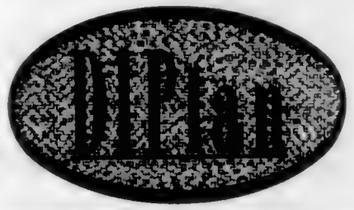
The Portuguese word "Comoro" means "a small round hill."
For Retail Carpeting and Draperies Store Services (Int. Cl. 35).
First use Dec. 31, 1966.

SN 274,245. O. L. Schilffarth & Company, Milwaukee, Wis. Filed June 19, 1967.

The drawing is lined for red, but no claim is made to color.
For Printing Services (Int. Cl. 35).
First use Oct. 5, 1966.

Class 102 — Insurance and Financial

SN 244,363. E. Rowan Steinschneider, Winnetka, Ill. Filed Apr. 26, 1966.



The drawing is lined for the color yellow, however, no claim is made to color as a feature of the mark.
For Service of Arranging for the Financing of Insurance Premiums for Physical Damage Insurance for Automobiles (Int. Cl. 36).
First use Mar. 15, 1966.

SN 263,939. Pilot Life Insurance Company, Greensboro, N.C. Filed Feb. 3, 1967.

The wording "Pilot Mountain, North Carolina" is disclaimed apart from the mark as shown. The drawing is lined for the colors blue, green, brown, and yellow and claim is made to color. Owner of Reg. Nos. 712,633, 734,711, and others.
For the Underwriting of Life, Health, Accident, Hospitalization, and Disability Income Insurance (Int. Cl. 36).
First use Jan. 31, 1924.

Class 103 — Construction and Repair

SN 248,003. American Fire Protection Service, San Francisco, Calif. Filed June 14, 1966.

Chemical Exhaust

Applicant claims use for the area comprising all of the United States, other than that portion of the State of California south of the northern boundaries of the counties of San Luis Obispo, Kern and San Bernardino and in that portion of the State of Nevada comprising Clark County.
For Cleaning and Treating Grease Ducts and Air Conditioning Systems, Installing Air Filters, Servicing and Maintaining Kitchen Grease Flues, Ranges and Stoves, and Ventilating Systems, and the Motors Attached Thereto (Int. Cl. 37).
First use during 1954.
Subj. to Concurrent Use Proceeding with SN 248,022.

SN 251,752. Stearns-Roger Corporation, Denver, Colo. Filed Aug. 4, 1966.

CRITOGRAPH

For Computer Programmed Plant Design and Construction Scheduling Services (Int. Cl. 37).
First use May 7, 1965.

SN 255,420. Consolidated Maintenance Corporation, d.b.a. Consolidated Motel-Hotel-Services, Cambridge, Mass. Filed Sept. 29, 1966.

CONSOLIDATED
OTEL-SERVICES

For Providing Maintenance and Housekeeping Services for Hotels and Motels (Int. Cl. 37).
First use at least as early as February 1962.

SN 255,421. Consolidated Maintenance Corporation, d.b.a. Consolidated Motel-Hotel-Services, Cambridge, Mass. Filed Sept. 29, 1966.

For Providing Maintenance and Housekeeping Services for Hotels and Motels (Int. Cl. 37).
First use November 1965; at least as early as February 1962 in a different form.

Class 104 — Communication

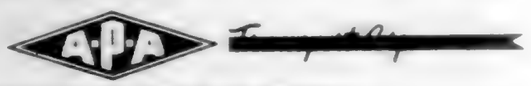
SN 251,763. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Aug. 3, 1966.

GOODYEAR

For Televison and Radio Broadcasting Service From a Mobile Platform (Int. Cl. 38).
First use Jan. 1, 1959.

Class 105 — Transportation and Storage

SN 252,999. A-P-A Transport Corp., North Bergen, N.J. Filed Aug. 24, 1966.



The drawing is lined for red and pink.
For Transportation of Property (Int. Cl. 39).
First use Aug. 17, 1959.

SN 253,120. Central Wisconsin Motor Transport Company, Wisconsin Rapids, Wis. Filed Aug. 25, 1966.

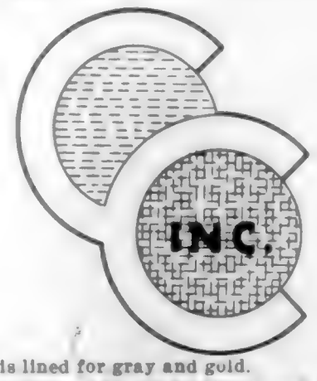
For Transportation of Freight by Truck (Int. Cl. 39).
First use Jan. 1, 1961.

SN 253,743. Executive Jet Aviation, Inc., Columbus, Ohio. Filed Sept. 2, 1966.

EJA

For Furnishing Jet Air Transportation Services for Passengers and Cargo (Int. Cl. 39).
First use May 21, 1964.

SN 265,404. Commercial Carriers, Inc., Jeffersonville, Ind. Filed Feb. 24, 1967.



The drawing is lined for gray and gold.
For Transportation of Goods by Truck and Storage of the Same (Int. Cl. 39).
First use Mar. 1, 1966.

SN 283,304. Davis Transport & Rentals, Inc., Jacksonville, Fla. Filed Oct. 25, 1967.

DTR

For Transportation of Goods by Truck and Truck Renting Services (Int. Cl. 39).
First use July 14, 1967.

SN 284,065. Belgian Line, Incorporated, New York, N.Y. Filed Nov. 3, 1967.

BEL-PAK

For Transportation of Freight by Truck, Rail and Ship in Specially Designed Containers Provided by Applicant (Int. Cl. 39).
First use Apr. 25, 1967.

Class 106 — Material Treatment

SN 232,996. Lustre Finish, Inc., Grand Rapids, Mich. Filed Nov. 19, 1965.

LUSTRE FROST

For Treating Metal Trim Pieces by Applying Decorative Finishes Thereto (Int. Cl. 40).
First use June 1, 1964.

SN 260,663. Injection Rapide et Conservation des Bois par Procede Nouveau, Grand-Rue Saint Vit, Doubs, France. Filed Dec. 13, 1966.

ININFLA

Priority claimed under Sec. 44(d) on French Reg. No. 716,717, dated June 14, 1966.
For Treatment of Wood for Protection Against Fungi Attack, Insect Attack, and Fireproofing, in All Forms (Int. Cl. 40).

Class 107 — Education and Entertainment

SN 267,678. The Saxons, New York, N.Y. Filed Mar. 27, 1967.

THE SAXONS

For Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41).
First use September 1965.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

846,079. ROYALITE AND DESIGN. United States Rubber Company. SN 254,338. Pub. 1–2–68. Filed 9–12–66.

846,080. MINN-DAK ETC. BRAND AND DESIGN. H. A. Peterson Feed & Seed, Inc. SN 260,577. Pub. 1–2–68. Filed 12–12–66.

846,081. RITRON. The Richardson Company. SN 262,623. Pub. 1–2–68. Filed 1–16–67.

846,082. KIMFOL. Kimberly-Clark Corporation. SN 263,076. Pub. 1–2–68. Filed 1–23–67.

846,083. H–101. E. Holzer, Inc. SN 264,527. Pub. 1–2–68. Filed 2–13–67.

846,084. OLYMPIAN, L. Piazza Wholesale Florists, Inc. SN 264,757. Pub. 1–2–68. Filed 2–15–67.

846,085. PACIFICA. L. Piazza Wholesale Florists, Inc. SN 264,758. Pub. 1–2–68. Filed 2–15–67.

846,086. CASU-FOAM. Milan Art Plastics, Inc. SN 265,203. Pub. 1–2–68. Filed 2–21–67.

846,087. PROMIX. Vistron Corporation. SN 255,117. Pub. 1–2–68. Filed 3–6–67.

846,088. FIBERFOAM. Ferro Corporation. SN 266,746. Pub. 1–2–68. Filed 3–15–67.

846,089. FORTRYL. Fiber Industries, Inc. SN 266,870. Pub. 1–2–68. Filed 3–16–67.

846,090. FORTIL. Fiber Industries, Inc. SN 266,871. Pub. 1–2–68. Filed 3–16–67.

Class 2 — Receptades

846,091. GLUSIL. Sprinter-Pack Aktiebolag. SN 254,733. Pub. 1–2–68. Filed 9–19–66.

846,092. STATE PRIDE ETC. AND DESIGN. Belk Stores Services, Inc. SN 259,398. Pub. 1–2–68. Filed 11–25–66.

846,093. PLASSWARE. Plastics, Inc. SN 264,995. Pub. 10–10–67. Filed 2–6–67.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

846,094. SIMCO. Sims Saddle & Leather Co., Inc. SN 265,851. Pub. 1–2–68. Filed 3–2–67.

Class 4 — Abrasives and Polishing Materials

846,905. LUSTRE-GLOSS AND DESIGN. Hillyard Enterprises, Inc. SN 266,538. Pub. 1–2–68. Filed 3–13–67.

846,096. SANI WAX. Sani-Wax Company. SN 279,950. Pub. 1–2–68. Filed 9–8–67.

Class 5 — Adhesives

846,097. ACRYLITE. American Cyanamid Company. SN 268,463. Pub. 1–2–68. Filed 4–6–67.

Class 6 — Chemicals and Chemical Compositions

846,098. MICRO-SHIELD. American Cyanamid Company. SN 216,377. Pub. 8–16–66. Filed 4–13–65.

846,099. WELL MIST. Well Completions, Incorporated. SN 240,223. Pub. 1–2–68. Filed 3–4–66.

846,100. GEVINYL. Chemische Werke Munchen, Otto Barlocher GmbH. SN 253,631. Pub. 1–2–68. Filed 9–1–66.

846,101. RINSE LIFE. B. E. Williams. SN 255,938. Pub. 1–2–68. Filed 10–6–66.

846,102. BUX. Chevron Chemical Company. SN 261,718. Pub. 1–2–68. Filed 12–30–66.

846,103. WALTERISATION. The Walterisation Company Limited. SN 263,134. Pub. 1–2–68. Filed 1–23–67.

846,104. CAPP. United States Borax & Chemical Corporation. MULTIPLE CLASS (Classes 6 and 10). SN 264,361. Pub. 1–2–68. Filed 2–10–67.

846,105. W–29. Eugene A. Wiseman, d.b.a. Wiseman Ranch Service. SN 270,522. Pub. 1–2–68. Filed 5–2–67.

Class 8 — Smokers' Artides, Not Induding Tobacco Products

846,106. HOURGLASS. Bayuk Cigars Incorporated. SN 273,160. Pub. 1–2–68. Filed 6–6–67.

Class 10 — Fertilizers

846,104. (See Class 6 for this trademark.)

Class 11 — Inks and Inking Materials

846,107. HIR. Sun Chemical Corporation. SN 209,582. Pub. 1–2–68. Filed 4–19–67.

Class 12 — Construction Materials

846,108. LUXAPLY. Hunter Douglas Limited. SN 257,438. Pub. 1–24–67. Filed 10–28–66.

846,109. TIKI. K-S-H, Inc., by change of name from K-S-H Plastics, Inc. SN 263,581. Pub. 1–2–68. Filed 1–30–67.

846,110. JAHN. The Ankortite Company, Inc., assignee of Mas Con Supply Company. SN 264,561. Pub. 1–2–68. Filed 2–13–67.

846,111. HOLE-OUT. Hole-Outs, Inc. SN 266,228. Pub. 1–2–68. Filed 3–8–67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

846,112. SUPERLOCK. The Fanner Manufacturing Company, Division of Textron Inc. SN 258,299. Pub. 5–2–67. Filed 11–9–66.

846,113. RK AND DESIGN. Ronan & Kunsl, Inc. MULTIPLE CLASS (Classes 13 and 22). SN 263,790. Pub. 1-2-68. Filed 2-2-67.

846,114. MISCELLANEOUS DESIGN. Bixson Inc. MULTIPLE CLASS (Classes 13, 21, and 26). SN 267,090. Pub. 1-2-68. Filed 3-20-67.

846,115. C-LAV. Koehler-Dayton, Inc. SN 270,580. Pub. 1-2-68. Filed 5-3-67.

846,116. FAIR-FLEX. Poor & Company. SN 270,706. Pub. 1-2-68. Filed 5-4-67.

846,117. PROFILE. Shepherd Casters, Inc. SN 271,073. Pub. 1-2-68. Filed 5-9-67.

846,118. CIRCA. Shepherd Casters, Inc. SN 271,074. Pub. 1-2-68. Filed 5-9-67.

846,119. SNO-TRIK. Lennon Company. SN 271,159. Pub. 1-2-68. Filed 5-10-67.

846,120. MTA AND DESIGN. Miller Tube Corporation of America. SN 283,492. Pub. 1-2-68. Filed 10-27-67.

Class 14 — Metals and Metal Castings and Forgings

846,121. L AND DESIGN. Lindell Drop Forge Company. SN 244,124. Pub. 1-2-68. Filed 4-22-66.

846,122. MAGNETICS INC. AND DESIGN. Magnetics, Inc. SN 245,877. Pub. 1-2-68. Filed 5-5-66.

846,123. TITAL. Kawecki Chemical Company. SN 259,926. Pub. 3-21-67. Filed 12-2-66.

846,124. GRDC AND DESIGN. Grand Rapids Die Castings Corp. SN 267,419. Pub. 1-2-68. Filed 3-23-67.

846,125. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 268,479. Pub. 1-2-68. Filed 4-6-67.

Class 15 — Oils and Greases

846,126. WINCHESTER. Automotive Merchandisers, Inc. SN 242,318. Pub. 9-26-67. Filed 3-31-66.

846,127. TRANSHYDRAL. Texaco Inc. SN 250,108. Pub. 6-6-67. Filed 7-12-66.

846,128. CONOCO C AND DESIGN. Continental Oil Company. SN 277,630. Pub. 1-2-68. Filed 8-7-67.

846,129. SWINGLINE. Swingline Inc. SN 282,963. Pub. 1-2-68. Filed 10-20-67.

Class 16 — Protective and Decorative Coatings

846,130. MOHAWK AND DESIGN. Mohawk Finishing Products, Inc. SN 254,795. Pub. 1-2-68. Filed 9-20-66.

846,131. VINYLZOL. Bee Chemical Company. SN 254,857. Pub. 1-2-68. Filed 9-21-66.

846,132. JUST WONDERFUL. Stonetree Chemical Corporation. SN 255,129. Pub. 1-2-68. Filed 9-26-66.

846,133. PRESTOPHANE. Interchemical Corporation. SN 255,984. Pub. 1-2-68. Filed 10-7-66.

846,134. CORDEC. International Latex & Chemical Corporation. SN 271,473. Pub. 1-2-68. Filed 5-15-67.

846,135. DEFTGARD. Deft, Inc. SN 272,813. Pub. 1-2-68. Filed 6-1-67.

846,136. DEFTHANE. Deft, Inc. SN 272,814. Pub. 1-2-68. Filed 6-1-67.

846,137. WITT'S MAGIC GLOSS. Basil F. Witt, Jr., d.b.a. Witts Auto Painting. SN 274,014. Pub. 1-2-68. Filed 6-15-67.

846,138. VITRITONE. Vitricon Inc. SN 274,106. Pub. 1-2-68. Filed 6-16-67.

Class 17 — Tobacco Products

846,139. TOWNSMAN. Lane Limited. SN 274,072. Pub. 1-2-68. Filed 6-16-67.

Class 18 — Medicines and Pharmaceutical Preparations

846,140. GERILID. Colgate-Palmolive Company. SN 230,032. Pub. 9-27-66. Filed 10-13-65.

846,141. MISCELLANEOUS DESIGN. Rutherford Laboratories, Incorporated. SN 240,958. Pub. 1-2-68. Filed 3-14-66.

846,142. ANSER. Landry Pharmaceuticals, Inc. SN 255,101. Pub. 1-2-68. Filed 9-26-66.

846,143. KOAGULONE. Dawe's Laboratories, Inc. SN 259,904. Pub. 1-2-68. Filed 12-2-66.

846,144. PROOF. Bristol-Myers Company. SN 262,672. Pub. 1-2-68. Filed 1-17-67.

846,145. CURTAIL. Bristol-Myers Company. SN 262,673. Pub. 1-2-68. Filed 1-17-67.

846,146. GIANTIN. Bristol-Myers Company. SN 262,675. Pub. 1-2-68. Filed 1-17-67.

846,147. ABLE. Bristol-Myers Company. SN 262,678. Pub. 1-2-68. Filed 1-17-67.

846,148. DRIFISOL. Vy Lactos Laboratories, Inc. SN 263,632. Pub. 1-2-68. Filed 1-30-67.

846,149. MANDRAX. Roussel-UCLAF. SN 263,849. Pub. 1-2-68. Filed 2-2-67.

846,150. BIDTABS. Bristol-Myers Company. SN 264,193. Pub. 1-2-68. Filed 2-8-67.

846,151. ULSA. Pharmacie Nationale Inc. SN 266,577. Pub. 1-2-68. Filed 3-13-67.

846,152. ALLBEE-T. A. H. Robins Company, Incorporated. SN 266,927. Pub. 1-2-68. Filed 3-16-67.

846,153. VIOL. Viobin Corporation. SN 267,273. Pub. 1-2-68. Filed 3-21-67.

846,154. TUSSA-PET. Veterinary Research Institute, assignee of Veterinary Supply Depot Incorporated. SN 267,696. Pub. 1-2-68. Filed 3-27-67.

846,155. BARICUP. Towne, Paulsen & Co., Inc. SN 268,440. Pub. 1-2-68. Filed 4-5-67.

846,156. FOAMADOSE. Schering Corporation. SN 268,768. Pub. 1-2-68. Filed 4-10-67.

846,157. PARKE-DAVIS. Parke, Davis & Company. SN 283,494. Pub. 1-2-68. Filed 10-27-67.

Class 19 — Vehicles

846,158. ROAD RALLY. Moog Industries, Inc. SN 223,566. Pub. 6-21-66. Filed 7-16-65.

846,159. KANGOL. Kangol Magnet Limited. SN 235,948. Pub. 1-2-68. Filed 1-7-66.

846,160. MFG AND DESIGN. Molded Fiber Glass Body Company. SN 239,290. Pub. 1-2-68. Filed 2-21-66.

846,161. AMKO. Amko Trading Corporation. MULTIPLE CLASS (Classes 19, 23, and 35). SN 251,871. Pub. 8-22-67. Filed 8-8-66.

846,162. HYDROSHOX. Maremont Corporation. SN 254,547. Pub. 1-2-68. Filed 9-15-66.

846,163. STRESSELECT. Midland-Ross Corporation. SN 258,241. Pub. 1-2-68. Filed 11-8-66.

846,164. TRADE WINDS TIGER AND DESIGN. Trade Winds Company, Inc., by change of name from Trade Winds Campers, Inc. SN 277,867. Pub. 1-2-68. Filed 8-9-67.

Class 20 — Linoleum and Oiled Cloth

846,165. NEWLON. New London Mills, Inc. MULTIPLE CLASS (Classes 20 and 42). SN 252,026. Pub. 1-2-68. Filed 8-9-66.

846,166. AU NATUREL. Kentile Floors Inc. SN 252,856. Pub. 1-2-68. Filed 8-22-66.

846,167. BROOKSTONE. Kentile Floors Inc. SN 252,857. Pub. 1-2-68. Filed 8-22-66.

846,168. MODA MORESCA. Kentile Floors Inc. SN 252,858. Pub. 1-2-68. Filed 8-22-66.

Class 21 — Electrical Apparatus, Machines, and Supplies

846,114. (See Class 13 for this trademark.)

846,169. MINI MERC. Thomas Industries Inc. SN 236,157. Pub. 1-2-68. Filed 1-10-66.

846,170. WINCHESTER. Automotive Merchandisers, Inc. SN 242,320. Pub. 9-26-67. Filed 3-31-66.

846,171. GOODMANS. Radio Rentaset Products Limited. SN 242,527. Pub. 1-2-68. Filed 3-29-66.

846,172. GOODMANS OF ENGLAND. Radio Rentaset Products Limited. SN 242,528. Pub. 1-2-68. Filed 3-29-66.

846,173. HERCULEADS. General Instrument Corporation (Delaware corporation), by merger from General Instrument Corporation (New Jersey corporation). SN 245,301. Pub. 1-2-68. Filed 5-10-66.

846,174. REVERSE SPIRAL AND DESIGN. Wes Taylor. SN 246,211. Pub. 1-2-68. Filed 5-20-66.

846,175. KEL-LITE. Kelley Company, Inc. SN 247,232. Pub. 1-2-68. Filed 6-3-66.

846,176. KEY-ABX. Stromberg-Carlson Corporation. SN 253,798. Pub. 1-2-68. Filed 9-2-66.

846,177. STA-LITE. El-Tronics, Inc. SN 256,204. Pub. 1-2-68. Filed 10-11-66.

846,178. CONTAC. Berg Electronics, Inc. SN 256,716. Pub. 1-2-68. Filed 10-19-66.

846,179. LITTER RIDDER AND DESIGN. Universal OEM Products Inc. SN 261,603. Pub. 1-2-68. Filed 12-28-66.

846,180. ECHOLETTE. Echolette-Vertrieb Hans Bauer. SN 262,257. Pub. 1-2-68. Filed 1-10-67.

846,181. CERRO-FLEX. Cerro Corporation. SN 263,253. Pub. 1-2-68. Filed 1-25-67.

846,182. OCTO 33. Emerson Electric Co. SN 264,923. Pub. 1-2-68. Filed 2-17-67.

846,183. VAN-O-PAD. Sawyer Associates, Inc. SN 265,925. Pub. 1-2-68. Filed 3-3-67.

846,184. THINLINE. Sunbeam Corporation. SN 266,945. Pub. 1-2-68. Filed 3-16-67.

846,185. TOUCH N TOAST. Sunbeam Corporation. SN 266,946. Pub. 1-2-68. Filed 3-16-67.

846,186. DINADE. Microlab/FXR. SN 268,976. Pub. 1-2-68 Filed 4-12-67.

846,187. AIR-WAY. Lamb Industries, Inc. SN 278,974. Pub. 1-2-68. Filed 8-24-67.

Class 22 — Games, Toys, and Sporting Goods

846,113. (See Class 13 for this trademark.)

846,188. LUR-A-MIN. Seneca Tackle Co., Inc. SN 265,238. Pub. 1-2-68. Filed 4-3-67.

846,189. FLYING DUTCHMAN AND DESIGN. The General Tire & Rubber Company. SN 270,378. Pub. 1-2-68. Filed 5-1-67.

846,190. LEAGUER AND DESIGN. Fred Meyer, Inc. SN 278,815. Pub. 1-2-68. Filed 8-22-67.

846,191. SURF-BALL. Surf-Ball, Inc. SN 279,757. Pub. 1-2-68. Filed 9-6-67.

846,192. CLIFF HANGER AND DESIGN. Milton Bradley Company. SN 280,007. Pub. 1-2-68. Filed 9-11-67.

846,193. HANGSTICK. Oceanic Equipment Corporation. SN 280,172. Pub. 1-2-68. Filed 9-12-67.

846,194. FIREBIRD 999. Shakespeare Company. SN 280,467. Pub. 1-2-68. Filed 9-15-67.

846,195. HIPPIES. Skyway Products, Inc. SN 280,643. Pub. 1-2-68. Filed 9-18-67.

846,196. EDISON THE DOG. Mattel, Inc. SN 282,247. Pub. 1-2-68. Filed 10-11-67.

846,197. SWINGALOK. Mattel, Inc. SN 283,069. Pub. 1-2-68. Filed 10-23-67.

846,198. PYTHON. Mattel, Inc. SN 283,070. Pub. 1-2-68. Filed 10-23-67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

846,161. (See Class 19 for this trademark.)

846,199. STAINLESS-STAINLESS BY IMPERIAL. Imperial Knife Associated Companies, Inc. SN 235,189. Pub. 1-2-68. Filed 12-23-65.

846,200. WINCHESTER. Automotive Merchandisers, Inc. SN 242,319. Pub. 9-26-67. Filed 3-31-66.

846,201. MC 1000. Pratt & Whitney Inc. SN 245,959. Pub. 1-2-68. Filed 5-18-66.

846,202. MEMCO. Modern Engraving & Machine Corp. SN 246,343. Pub. 1-2-68. Filed 5-23-66.

846,203. TOW AND DESIGN. Towmotor Corporation. SN 251,759. Pub. 1-2-68. Filed 8-4-66.

846,204. GREEN SHIELD. General Motors Corporation. SN 252,732. Pub. 1-2-68. Filed 8-19-66.

846,205. PRE-SIZE. The O-E Tool Company, Inc. SN 254,889. Pub. 1-2-68. Filed 9-21-66.

846,206. ROLOBAR AND DESIGN. Etablissements Neyrpic (Ateliers Neyret-Beylier & Piccard-Pictet). SN 255,304. Pub. 8-8-67. Filed 9-28-66.

846,207. "X-TENSION" LEVELING. Voss Engineering Company. SN 256,688. Pub. 1-2-68. Filed 10-18-66.

846,208. CARVER-GREENFIELD PROCESS. Fred S. Carver Inc. SN 257,589. Pub. 1-2-68. Filed 10-31-66.

846,209. PHILIFT AND DESIGN. Philift Equipment Sales Co., Inc. SN 261,753. Pub. 1-2-68. Filed 12-30-66.

846,210. SMIDTH-NORDSTROM. F. L. Smidth & Co. SN 263,960. Pub. 1-2-68. Filed 2-3-67.

846,211. SURGAMATIC. Link-Belt Company. SN 264,558. Pub. 1-2-68. Filed 2-13-67.

846,212. ADC. Automation Development Corporation. SN 265,153. Pub. 1-2-68. Filed 2-21-67.

846,213. ECON-O-BRAKE. Tapco Products Company, Inc. SN 265,356. Pub. 1-2-68. Filed 2-23-67.

846,214. LIFE-TIME. Lull Engineering Company, Inc. SN 265,722. Pub. 1-2-68. Filed 3-1-67.

846,215. REPRESENTATION OF A HOOK. Conco Inc. SN 279,782. Pub. 1-2-68. Filed 9-7-67.

Class 26 — Measuring and Scientific Appliances

846,114. (See Class 13 for this trademark.)

846,216. UI. Univis, Inc. SN 115,742. Pub. 9-12-61. Filed 8-15-61.

846,217. HONOR. Bolt Beranek and Newman Inc., assignee of BBN Corporation. MULTIPLE CLASS (Classes 26 and 38). SN 199,870. Pub. 1-2-68. Filed 8-14-64.

846,218. 8-48. Barry Wright Corp., assignee of Mathatronics, Inc. SN 226,259. Pub. 1-2-68. Filed 8-23-65.

846,219. KEYCOUNTER. Hecon Corporation, assignee of Hengstler Numerics, Inc. SN 242,897. Pub. 1-2-68. Filed 4-7-66.

846,220. COPYCORDER. Hecon Corporation, assignee of Hengstler Numerics, Inc. SN 242,898. Pub. 1-2-68. Filed 4-7-66.

846,221. DOM. Dr. Johannes Heidenhain Optics and Electronics Inc. SN 244,707. Pub. 1-2-68. Filed 5-2-66.

846,222. SYNCHROCORDER. Spiratone, Inc. SN 247,267. Pub. 1-2-68. Filed 6-3-66.

846,223. TELEGRIP. Spiratone, Inc. SN 248,856. Pub. 1-2-68. Filed 6-23-66.

846,224. TOE-FINDER. Wolverine World Wide, Inc. SN 255,146. Pub. 1-2-68. Filed 9-26-66.

846,225. ALPHA. Carsen Instruments Limited. SN 257,588. Pub. 1-2-68. Filed 10-31-66.

846,226. AUTOLARM. Chicago Pneumatic Tool Company. SN 258,282. Pub. 11-14-67. Filed 11-9-66.

846,227. SOHAX. Sony Corporation. SN 264,604. Pub. 1-2-68. Filed 2-13-67.

846,228. FOAMCONE. Teledyne, Inc., d.b.a. Teledyne Systems Company, Micronetics Division. SN 264,987. Pub. 1-2-68. Filed 2-17-67.

846,229. MISCELLANEOUS DESIGN. The Gerber Scientific Instrument Company. SN 265,237. Pub. 1-2-68. Filed 2-23-67.

846,230. CARLO BARA. Itek Corporation. SN 265,826. Pub. 1-2-68. Filed 3-2-67.

846,231. ANGENIEUX. Etablissements Pierre Angenieux, S.A. SN 268,170. Pub. 1-2-68. Filed 4-3-67.

846,232. ACRATAPE. Fabrics of America, Inc. SN 268,176. Pub. 1-2-68. Filed 4-3-67.

846,233. SAV-A-CALL. H.K.G., Inc. SN 268,938. Pub. 1-2-68. Filed 4-12-67.

846,234. FISH FLASHER. Jetronic Industries, Inc. SN 269,078. Pub. 1-2-68. Filed 4-13-67.

846,235. GREEK LETTER MU (DESIGN). Microspheres, Inc. SN 269,197. Pub. 1-2-68. Filed 4-14-67.

846,236. AUTO-PUNCH. Litton Business Systems, Inc., by merger and change of name from Royal Typewriter Company, Inc. SN 271,522. Pub. 1-2-68. Filed 5-15-67.

846,237. EMPREX. E. I. du Pont de Nemours and Company. SN 283,193. Pub. 1-2-68. Filed 10-24-67.

Class 27 — Horological Instruments

846,238. ASSURED TIME. Sunbeam Corporation. SN 230,097. Pub. 5-16-67. Filed 10-13-65.

846,239. MAGIC TOUCH. General Time Corporation. SN 245,255. Pub. 5-30-67. Filed 2-8-66.

846,240. MUSTANG. Sheffield Watch of New York, Inc., by change of name from Sheffield Watch, Inc. SN 248,640. Pub. 9-26-67. Filed 6-21-66.

846,241. TEECO. Tiffany and Company. SN 281,135. Pub. 1-2-68. Filed 9-25-67.

Class 28 — Jewelry and Precious-Metal Ware

846,242. BAROQUE ROSE. Oneida Ltd. SN 264,440. Pub. 1-2-68. Filed 2-10-67.

846,243. REVERIE. B. B. Greenberg Co. SN 267,628. Pub. 1-2-68. Filed 3-27-67.

Class 29 — Brooms, Brushes, and Dusters

846,244. FLEXI AND DESIGN. Quickie Manufacturing Corporation. SN 247,620. Pub. 1-2-68. Filed 6-8-66.

846,245. NOVADENT. E.Q.P. Electrical Quality Products Establishment. SN 251,713. Pub. 1-2-68. Filed 8-4-66.

846,246. ARLANS AND DESIGN. Arlan's Dept. Stores, Inc. SN 263,735. Pub. 1-2-68. Filed 2-1-67.

Class 30 — Crockery, Earthenware, and Porcelain

846,247. STRA. Shenango Ceramics, Inc. SN 210,157. Pub. 1-2-68. Filed 1-18-65.

846,248. GOLDEN FLAIR. Home Decorators, Inc. SN 279,347. Pub. 1-2-68. Filed 8-30-67.

Class 31 — Filters and Refrigerators

846,249. TEXACO AND DESIGN. Texaco Inc. SN 259,275. Pub. 1-2-68. Filed 11-22-66.

Class 32 — Furniture and Upholstery

846,250. EZ-C. The Speed Check Co., Inc. SN 247,837. Pub. 10-17-67. Filed 6-10-66.

846,251. AUDIO-CENTRAL. Sico Incorporated. SN 259,859. Pub. 1-2-68. Filed 12-1-66.

846,252. SIDE-FILE. Mosler Harbor Sales Corporation. SN 267,647. Pub. 1-2-68. Filed 3-27-67.

846,253. AGREEMENT. Societe Civile de Recherches et d'Etudes Industrielles. SN 270,424. Pub. 1-2-68. Filed 5-1-67.

846,254. ALLIANCE. Societe Civile de Recherches et d'Etudes Industrielles. SN 270,425. Pub. 1-2-68. Filed 5-1-67.

846,255. CONSOLIDATOR. The General Fireproofing Company. SN 272,269. Pub. 1-2-68. Filed 5-24-67.

Class 33 — Glassware

846,256. LIVING GLASS. Anchor Hocking Glass Corporation. SN 267,386. Pub. 10-31-67. Filed 3-23-67.

Class 34 — Heating, Lighting, and Ventilating Apparatus

846,257. SERVOGRAPH. Air Reduction Company, Incorporated. SN 201,165. Pub. 5-17-66. Filed 9-3-64.

846,258. LOCKWOOD. John L. Underwood Company, Inc. SN 250,434. Pub. 1-2-68. Filed 7-18-66.

846,259. UPFLOW SYSTEM AND DESIGN. Austin-Herryhill, Inc. SN 257,029. Pub. 1-2-68. Filed 10-24-66.

846,260. FLAMATIC. Eastern Seaboard Plastics, Inc. SN 258,293. Pub. 9-19-67. Filed 11-9-66.

846,261. UNILUWA. Luwa Ltd. SN 260,127. Pub. 1-2-68. Filed 11-29-66.

846,262. METAL AIRE AND DESIGN. Metal Industries, Inc. SN 260,695. Pub. 1-2-68. Filed 12-9-66.

846,263. KORO-CHIL. Calumet & Hecla, Inc. SN 263,531. Pub. 1-2-68. Filed 1-30-67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

846,161. (See Class 19 for this trademark.)

846,264. WINCHESTER. Automotive Merchandisers, Inc. SN 238,998. Pub. 9-26-67. Filed 2-17-66.

846,265. DURAFLEX. The Hobart Manufacturing Company. SN 261,490. Pub. 1-2-68. Filed 12-27-66.

846,266. WG AND DESIGN. Wisconsin Gasket & Manufacturing Company. SN 263,969. Pub. 1-2-68. Filed 2-3-67.

846,267. DURA SAFE. The Goodyear Tire & Rubber Company. SN 266,322. Pub. 1-2-68. Filed 3-9-67.

846,268. POWER STROKE. Hastings Manufacturing Company. SN 266,329. Pub. 1-2-68. Filed 3-9-67.

Class 36 — Musical Instruments and Supplies

846,269. AVALON. Avnet, Inc., assignee of Goya Music Corporation. MULTIPLE CLASS (Classes 36 and 37). SN 256,661. Pub. 1-2-68. Filed 10-18-66.

846,270. VIDEOTEXT. Ruth S. White, d.b.a. Rhythms Productions. SN 259,196. Pub. 1-2-68. Filed 11-21-66.

846,271. F AND DESIGN. Farfisa S.p.A. SN 261,904. Pub. 1-2-68. Filed 1-4-67.

Class 37 — Paper and Stationery

846,269. (See Class 36 for this trademark.)

846,272. PRESTO-SEAL. Murray Envelope Corporation. SN 220,128. Pub. 10-4-66. Filed 6-1-65.

846,273. PRESTO-SEAL AND DESIGN. Murray Envelope Corporation. SN 220,128. Pub. 10-4-66. Filed 6-1-65.

846,274. MEAD PAN-L BOARD. The Mead Corporation. SN 243,334. Pub. 9-12-67. Filed 4-13-66.

846,275. OGILVIE AND DESIGN. Graphic Controls Corporation. SN 256,089. Pub. 1-2-68. Filed 10-10-66.

846,276. CONVOY. Scott Paper Company. SN 261,946. Pub. 11-14-67. Filed 1-4-67.

846,277. DATACHROME. Data Graphic, Inc. SN 265,051. Pub. 1-2-68. Filed 2-20-67.

846,278. WEEKLY DAY-TIMER. Day-Timers, Inc. SN 266,309. Pub. 1-2-68. Filed 3-9-67.

846,279. FLY INFORMED! Donald C. Sinclair, d.b.a. Westfield Airmotive. SN 266,935. Pub. 1-2-68. Filed 3-16-67.

846,280. MASTERWEB. Boise Cascade Corporation. SN 269,282. Pub. 1-2-68. Filed 4-17-67.

846,281. FOXLITE. Fox River Paper Corporation. SN 279,597. Pub. 1-2-68. Filed 9-5-67.

846,282. QUIKSORB. Graham Paper Company. SN 281,979. Pub. 1-2-68. Filed 10-6-67.

Class 38 — Prints and Publications

846,217. (See Class 26 for this trademark.)

846,283. MISCELLANEOUS DESIGN. Xerox Corporation, assignee of University Microfilms, Inc. SN 240,990. Pub. 1-2-68. Filed 3-14-66.

846,284. YOUNG MISS. The Better Reading Foundation, Inc. SN 251,598. Pub. 1-2-68. Filed 8-3-66.

846,285. LIVING CARE AND DESIGN. Living Care Publishers, Inc. SN 251,639. Pub. 1-2-68. Filed 8-3-66.

846,286. FTD AND DESIGN. Florists' Transworld Delivery Association. SN 256,835. Pub. 1-2-68. Filed 10-20-66.

846,287. OPERATION TIPS. International Paper Company. SN 258,232. Pub. 1-2-68. Filed 11-8-66.

846,288. ORTHO NEWS AND DESIGN. Ortho Pharmaceutical Corporation. SN 258,570. Pub. 1-2-68. Filed 11-14-66.

846,289. AFRICAN SAFARI CALENDAR. Hallmark Cards, Incorporated. SN 260,848. Pub. 1-2-68. Filed 12-15-66.

846,290. ASTME VECTORS AND DESIGN. American Society of Tool and Manufacturing Engineers. SN 261,443. Pub. 1-2-68. Filed 12-27-66.

846,291. CROSS REFERENCE DIRECTORY. Cross Reference Publications, Inc. SN 261,642. Pub. 1-2-68. Filed 12-29-66.

846,292. SUGARY AZUCAR. Mona Palmer, d.b.a. Palmer Publications. SN 263,689. Pub. 1-2-68. Filed 1-31-67.

846,293. ALASKA SPORTSMAN. Alaska Northwest Publishing Company. SN 264,001. Pub. 1-2-68. Filed 2-6-67.

846,294. ALASKA SPORTSMAN. Alaska Northwest Publishing Company. SN 264,002. Pub. 1-2-68. Filed 2-6-67.

846,295. LIBERTY LETTER. Liberty Lobby, Inc. SN 264,556. Pub. 1-2-68. Filed 2-13-67.

846,296. THE HUDSON VALLEY ANTIQUE SCOUT. Edward W. McTague. SN 266,341. Pub. 1-2-68. Filed 3-9-67.

846,297. AUDARENA. Billboard Publications, Inc., by change of name from The Billboard Publishing Company. SN 266,501. Pub. 1-2-68. Filed 3-13-67.

846,298. THE GLASS DEALER. National Glass Dealers Association. SN 267,841. Pub. 1-2-68. Filed 3-29-67.

Class 39 — Clothing

846,299. OH BRA. Exquisite Form Industries, Inc. SN 235,643. Pub. 11-8-66. Filed 1-3-66.

846,300. SHERMAN. Sherman Underwear Mills, Inc. SN 248,370. Pub. 1-2-68. Filed 6-17-66.

846,301. FEMINIQUE. Clark Shoe Company, Inc. SN 253,014. Pub. 5-30-67. Filed 8-24-66.

846,302. RIVER TOWN STUD ETC. AND DESIGN. Roger L. Jorgensen, d.b.a. River Town Clothing Company. SN 256,941. Pub. 1-2-68. Filed 10-21-66.

846,303. FLUFFKNIT. Sondra Manufacturing Co., Inc. SN 257,202. Pub. 1-2-68. Filed 10-25-66.

846,304. GAYLE STEWART. Martin Mfg. Co. Limited. SN 257,872. Pub. 1-2-68. Filed 11-3-66.

846,305. PICTORIAL ILLUSTRATION (DESIGN). Lynne Stanley Originals, Inc. SN 258,604. Pub. 1-2-68. Filed 11-14-66.

846,306. ANDERSON BROTHERS. Anderson Brothers, Inc., by change of name from Anderson Brothers Consolidated Companies, Incorporated. SN 260,512. Pub. 10-24-67. Filed 12-12-66.

846,307. GUY D AND DESIGN. Morton D. Goldman. SN 262,935. Pub. 9-12-67. Filed 1-20-67.

846,308. TAMBOUR. Tambour, Inc. SN 263,494. Pub. 1-2-68. Filed 1-27-67.

846,309. FEMINIQUE FURS. Irving D. Singer. SN 264,343. Pub. 5-30-67. Filed 2-9-67.

846,310. RANDY ATHLETE. Randolph Manufacturing Co., Inc. SN 266,589. Pub. 1-2-68. Filed 3-13-67.

846,311. SEADATES. Serbin, Inc. SN 267,550. Pub. 1-2-68. Filed 3-24-67.

846,312. TATOO. West Garment Company, Inc. SN 267,703. Pub. 1-2-68. Filed 3-27-67.

846,313. TUFSYN. The Goodyear Tire & Rubber Company. SN 267,941. Pub. 1-2-68. Filed 3-30-67.

846,314. SNAP-JAC. William F. Niemi Co., d.b.a. Eddie Bauer. SN 267,972. Pub. 1-2-68. Filed 3-30-67.

846,315. PINK POODLE. All Time Togs, Inc. SN 268,012. Pub. 1-2-68. Filed 3-31-67.

846,316. SPACE-PACERS. Consolidated International Trading Corporation. SN 268,029. Pub. 1-2-68. Filed 3-31-67.

846,317. WINDMATES. Windbreaker, Incorporated. SN 268,445. Pub. 1-2-68. Filed 4-5-67.

846,318. BONANZA. Colt Corporation. SN 269,889. Pub. 1–2–68. Filed 4–24–67.

846,319. LORNA FASHIONS, INC. Lorna Fashions, Inc. SN 270,143. Pub. 1–2–68. Filed 4–27–67.

846,320. SEA MARK AND DESIGN. Philtex Manufacturing Company. SN 275,297. Pub. 1–2–68. Filed 7–3–67.

846,321. BLACK MULE. Wells Lamont Corporation. SN 275,714. Pub. 1–2–68. Filed 7–10–67.

846,322. ROB ROY. Rob Roy Company, Inc. SN 276,764. Pub. 1–2–68. Filed 7–25–67.

846,323. BLACK MULE AND DESIGN. Wells Lamont Corporation. SN 276,975. Pub. 1–2–68. Filed 7–27–67.

846,324. THORNGATE LTD. Hart Schaffner & Marx. SN 277,102. Pub. 1–2–68. Filed 7–31–67.

846,325. PEEK-O-ORANGE. Kayser-Roth Corporation SN 277,182. Pub. 1–2–68. Filed 7–31–67.

846,326. PEEK-O-GREEN. Kayser-Roth Corporation. SN 277,184. Pub. 1–2–68. Filed 7–31–67.

846,327. PEEK-O-RED. Kayser-Roth Corporation. SN 278,303. Pub. 1–2–68. Filed 8–15–67.

846,328. PEEK-O-VIOLET. Kayser-Roth Corporation. SN 278,304. Pub. 1–2–68. Filed 8–15–67.

846,329. BESTIQUE. McCrory Corporation. SN 282,865. Pub. 1–2–68. Filed 10–19–67.

846,330. STRATOVALET SERVICE. Strato-Valet Service, Inc. SN 282,869. Pub. 1–2–68. Filed 10–19–67.

846,331. JEAN SUTTON. Mercantile Stores Company, Inc. SN 282,960. Pub. 1–2–68. Filed 10–20–67.

Class 40 — Fancy Goods, Furnishings, and Notions

846,332. DESIGN OF A WIG. Fashion Tress, Inc. SN 223,302. Pub. 1–2–68. Filed 7–14–65.

846,333. REVERIE. B. B. Greenberg Co. SN 272,048. Pub. 1–2–68. Filed 5–22–67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

846,165. (See Class 20 for this trademark).

846,334. GRIP. Monsanto Company. MULTIPLE CLASS (Classes 42 and 106). SN 253,079. Pub. 1–2–68. Filed 8–25–66.

846,335. CHALLISPUN. United Merchants and Manufacturers, Inc. SN 267,457. Pub. 1–2–68. Filed 3–23–67.

846,336. RICE PADDY. United Merchants and Manufacturers, Inc. SN 267,458. Pub. 1–2–68. Filed 3–23–67.

846,337. THISTLE HEATHERS. J. P. Stevens & Co., Inc. SN 268,342. Pub. 1–2–68. Filed 4–4–67.

846,338. VELEKTRA. J. B. Martin Company. SN 269,675. Pub. 1–2–68. Filed 4–20–67.

846,339. TRIPLEX. Stauffer Chemical Company. SN 273,803. Pub. 1–2–68. Filed 6–13–67.

846,340. MAG-KNIT. Mag-Knit Fabrics Corp. SN 280,373. Pub. 1–2–68. Filed 9–15–67.

Class 44 — Dental, Medical, and Surgical Appliances

846,341. VACUTUBE. Becton, Dickinson and Company, assignee of Roehr Products Company, Inc. SN 209,540. Pub. 1–18–66. Filed 1–7–65.

846,342. CONDENSAIRE. Densco, Incorporated. SN 256,827. Pub. 1–2–68. Filed 10–20–66.

846,343. MINICATH. Deseret Pharmaceutical Company, Inc. SN 263,546. Pub. 1–2–68. Filed 1–30–67.

846,344. VERTIJUST. Resiflex Laboratory. SN 263,847. Pub. 1–2–68. Filed 2–2–67.

846,345. CORDIS. Cordis Corporation. SN 266,736. Pub. 1–2–68. Filed 3–15–67.

846,346. SWING-LOCK. Idea Development Company. SN 267,154. Pub. 1–2–68. Filed 3–20–67.

Class 45 — Soft Drinks and Carbonated Waters

846,347. SCHEELE SODA POP AND DESIGN. Wm. Scheele & Sons Co., Inc. SN 262,811. Pub. 1–2–68. Filed 1–18–67.

Class 46 — Foods and Ingredients of Foods

846,348. SHARPS THE WORD FOR TOFFEE AND DESIGN. Edward Sharp & Sons Limited. SN 195,453. Pub. 2–23–65. Filed 6–11–64.

846,349. DIXIE HONEYSUCKLE. Haas-Davis Packing Company, Inc. SN 198,162. Pub. 12–29–64. Filed 7–20–64.

846,350. 5 IN 1 AND DESIGN. B. A. Bernard & Co., Inc. SN 202,902. Pub. 1–2–68. Filed 9–29–64.

846,351. S SUPERIOR'S BRAND AND DESIGN. Superior's Brand Meats Inc. SN 216,354. Pub. 3–8–66. Filed 4–12–65.

846,352. SUPERIOR BRAND AND DESIGN. Acme Poultry and Egg Company, d.b.a. Acme Poultry Company. SN 217,824. Pub. 3–15–66. Filed 5–3–65.

846,353. APPL-Q AND DESIGN. Jean Gerhard, d.b.a. Appl-Q Products. SN 238,866. Pub. 1–2–68. Filed 2–15–66.

846,354. QUALITREE. Perry H. Chipurnoi, Inc. SN 243,960. Pub. 8–22–67. Filed 4–21–66.

846,355. BETTY MORE. More Candy Company, Inc. SN 247,515. Pub. 1–2–68. Filed 6–7–66.

846,356. BOB EVANS FARMS. Bob Evans Farms, Michigan, Inc. SN 251,530. Pub. 1–2–68. Filed 8–2–66.

846,357. BOB EVANS FARMS AND DESIGN. Bob Evans Farms, Michigan, Inc. SN 251,531. Pub. 1–2–68. Filed 8–2–66.

846,358. NANCY HANKS. Michigan Fruit Canners, Inc. SN 253,540. Pub. 1–2–68. Filed 8–31–66.

846,359. BILTMORE. The Biltmore Company, d.b.a. Biltmore Dairy Farms. SN 257,356. Pub. 1–2–68. Filed 10–27–66.

846,360. SUGAR CONES. General Mills, Inc. SN 257,603. Pub. 8–22–67. Filed 10–31–66.

846,361. MICKEY AND DESIGN. American Bakeries Company. SN 259,070. Pub. 1–2–68. Filed 11–21–66.

846,362. PURSWEET. Dana Brown-Private Brands, Inc. SN 259,903. Pub. 1–2–68. Filed 12–2–66.

846,363. ELIZABETH SHAW. Elizabeth Shaw Limited. SN 260,418. Pub. 1–2–68. Filed 12–9–66.

846,364. CHUNKS OF JOY. Best Feeds & Farm Supplies, Inc. SN 260,720. Pub. 1–2–68. Filed 12–14–66.

846,365. GEOMETRICAL DESIGN. Green Giant Company. SN 260,743. Pub. 1–2–68. Filed 12–14–66.

846,366. SUZANNA'S FROZEN AND DESIGN. Suzanna's Kitchen Inc. SN 260,895. Pub. 1–2–68. Filed 12–15–66.

846,367. CHEF-MATE. Carnation Company. SN 261,360. Pub. 1–2–68. Filed 12–23–66.

846,368. SANO-SPREAD AND DESIGN. M. L. Ringoot, d.b.a. Select Foods Co. SN 262,510. Pub. 1–2–68. Filed 1–13–67.

846,369. SUPER GOLD. TV Time Foods, Inc. SN 263,217. Pub. 1–2–68. Filed 1–24–67.

846,370. CONSISTENT QUALITY AND DESIGN. S. Lotman & Son, Inc. SN 263,470. Pub. 1–2–68. Filed 1–27–67.

846,371. CHICKWICK. Belgin Enterprises, Inc., d.b.a. Belgian House Foods. SN 263,655. Pub. 1–2–68. Filed 1–31–67.

846,372. EASY TREATS. FCX, Inc., d.b.a. FCX Food Products. SN 264,659. Pub. 1–2–68. Filed 2–14–67.

846,373. FREEPORTER. Leo Young, d.b.a. Leo Young & Co. SN 265,368. Pub. 1–2–68. Filed 2–23–67.

846,374. WORTH CROWIN' ABOUT. Famous Recipe Fried Chicken, Inc. SN 265,506. Pub. 1–2–68. Filed 2–27–67.

846,375. PIZZA MIA. Ramsey Laboratories, Inc. SN 265,920. Pub. 1–2–68. Filed 3–3–67.

846,376. TOOTSIE TWO'S. Tootsie Roll Industries, Inc. SN 267,272. Pub. 1–2–68. Filed 3–21–67.

846,377. SEED TREE. Hartz Mountain Products Corp. SN 267,629. Pub. 1–2–68. Filed 3–27–67.

846,378. VITA-BRITE. Sterling H. Nelson & Sons, Inc., d.b.a. Murray Elevators, and Silver Cup Fish Feeds. SN 269,698. Pub. 1–2–68. Filed 4–20–67.

846,379. PEACHTONE. Dodge & Olcott, Inc. SN 269,727. Pub. 1–2–68. Filed 4–21–67.

846,380. SMG. National Dairy Products Corporation. SN 270,148. Pub. 1–2–68. Filed 4–27–67.

846,381. DANDY CUP. S. A. Schonbrunn & Co. Inc. SN 270,287. Pub. 1–2–68. Filed 4–28–67.

846,382. SARATOGA. Mayfair Packing Company, d.b.a. Mayfair Packing Co. SN 270,401. Pub. 1–2–68. Filed 5–1–67.

846,383. BONNIE BAKER ETC. AND DESIGN. Piggly Wiggly Operators' Warehouse, Inc. SN 270,951. Pub. 1–2–68. Filed 5–8–67.

846,384. COOKIE MATES. Keebler Company. SN 272,496. Pub. 1–2–68. Filed 5–26–67.

846,385. NUNES BROS. Nunes Bros. of California, Inc. SN 274,918. Pub. 1–2–68. Filed 6–28–67.

846,386. GET UP AND GO. Mead Johnson & Company. SN 275,201. Pub. 1–2–68. Filed 7–3–67.

846,387. LR AND DESIGN. Louis Rich Foods, Inc. SN 275,469. Pub. 1–2–68. Filed 7–6–67.

846,388. THE SWISS COLONY AND DESIGN. The Swiss Colony, Inc. SN 275,808. Pub. 1–2–68. Filed 7–12–67.

846,389. SIMPLOT. J. R. Simplot Company. SN 277,000. Pub. 1–2–68. Filed 7–28–67.

846,390. CAP'N CRUNCH "MUNCH BOX." The Quaker Oats Company. SN 281,421. Pub. 1–2–68. Filed 9–29–67.

846,391. MCP PINEAPPLE SHAKE AND DESIGN. Mutual Citrus Products Company. SN 282,751. Pub. 1–2–68. Filed 10–18–67.

846,392. HIBS. The Quaker Oats Company. SN 282,866. Pub. 1–2–68. Filed 10–19–67.

846,393. LEANING TOWERS. The Quaker Oats Company. SN 282,867. Pub. 1–2–68. Filed 10–19–67.

846,394. PUFA. Lever Brothers Company. SN 282,959. Pub. 1–2–68. Filed 10–20–67.

Class 47 — Wines

846,395. MISCELLANEOUS DESIGN. London Winery Limited. SN 269,433. Pub. 1–2–68. Filed 4–18–67.

846,396. FIREBIRD. E. & J. Gallo Winery, d.b.a. Gallo Vineyards. SN 269,529. Pub. 1–2–68. Filed 4–19–67.

Class 48 — Malt Beverages and Liquors

846,397. IF A MAN DOESN'T GET HAMM'S ETC. Theo. Hamm Brewing Co. SN 265,358. Pub. 1–2–68. Filed 2–23–67.

Class 49 — Distilled Alcoholic Liquors

846,398. CATAMARAN. Canadian Schenley Distilleries, Ltd. SN 269,502. Pub. 1–2–68. Filed 4–19–67.

846,399. JOHN JOLLY. Joseph E. Seagram & Sons, Inc. SN 280,917. Pub. 1–2–68. Filed 9–22–67.

Class 50 — Merchandise Not Otherwise Classified

846,400. HEATHER-MATES. Geo. Sheard & Co. (1964) Limited. SN 259,179. Pub. 1–2–68. Filed 11–21–66.

846,401. CLIPPIES. Clipper Associates. SN 263,629. Pub. 1–2–68. Filed 1–30–67.

846,402. SPORTSMAN 20'S AND DESIGN. Wolf & Vine, Inc. SN 263,971. Pub. 1–2–68. Filed 2–3–67.

846,403. MANITEENS/16. Wolf & Vine, Inc. SN 263,972. Pub. 1–2–68. Filed 2–3–67.

846,404. MANITEENS/18. Wolf & Vine, Inc. SN 263,974. Pub. 1–2–68. Filed 2–3–67.

846,405. LO SCRICCIOLO. Franconeri, Inc. SN 264,401. Pub. 1–2–68. Filed 2–10–67.

Class 51 — Cosmetics and Toilet Preparations

846,406. DASH OF DEW. Noxell Corporation. SN 255,340. Pub. 1–2–68. Filed 9–28–66.

846,407. NIGHT WINDS. Amway Corporation. SN 258,029. Pub. 8–22–67. Filed 11–7–66.

846,408. CRISP. De Mert & Dougherty, Inc. SN 262,855. Pub. 7–4–67. Filed 1–19–67.

846,409. COURT CLUB. Eddie Jacobs, Ltd. SN 262,940. Pub. 1–2–68. Filed 1–20–67.

846,410. DELACYL. Ulay Export Corporation. SN 265,855. Pub. 1–2–68. Filed 3–2–67.

846,411. LADY LENORE AND DESIGN. General Nutrition Corporation, d.b.a. Natural Sales Co. SN 265,895. Pub. 1–2–68. Filed 3–3–67.

846,412. TAMPICO. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 266,787. Pub. 1–2–68. Filed 3–15–67.

846,413. TELL ME. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 266,788. Pub. 1–2–68. Filed 3–15–67.

846,414. SORTIE. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 266,789. Pub. 1–2–68. Filed 3–15–67.

846,415. SAHIB. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 266,790. Pub. 1–2–68. Filed 3–15–67.

846,416. SCHICK. Eversharp, Inc. SN 267,235. Pub. 1–2–68. Filed 3–21–67.

846,417. BELLODGIA. Caron Corporation. SN 268,573. Pub. 1–2–68. Filed 4–7–67.

846,418. ONICA. Redken Laboratories, Inc. SN 270,170. Pub. 1–2–68. Filed 8–14–67.

846,419. ROUGH 'N READY. Shulton, Inc. SN 273,073. Pub. 1–2–68. Filed 10–23–67.

Class 52 — Detergents and Soaps

846,420. JOHNNY RINGO. W. R. Grace & Co. SN 263,664. Pub. 1–2–68. Filed 1–31–67.

846,421. ORBIT. W. R. Grace & Co. SN 264,666. Pub. 1–2–68. Filed 2–14–67.

846,422. ACNE-AID. Stiefel Laboratories, Inc. SN 264,860. Pub. 1–2–68. Filed 2–16–67.

846,423. PENNTEX. Pennsalt Chemicals Corporation. SN 270,151. Pub. 1-2-68. Filed 4-27-67.

846,424. IMPROMPTU. Avon Products, Inc. SN 270,216. Pub. 1-2-68. Filed 4-28-67.

846,425. COMPEL. Avon Products, Inc. SN 270,218. Pub. 1-2-68. Filed 4-28-67.

846,426. SOLVE. General Foods Corporation. SN 270,567. Pub. 1-2-68. Filed 5-3-67.

846,427. BUD PLASTIC PUTTY AND DESIGN. Tesco, Inc., d.b.a. Bud Type Cleaner Co. SN 280,843. Pub. 1-2-68. Filed 9-21-67.

Service Marks

Class 100 — Miscellaneous

846,428. FLYING W RANCH. Flying W Ranch, Inc. MULTIPLE CLASS (Classes 100 and 107). SN 180,658. Pub. 1-2-68. Filed 11-7-63.

846,429. CARABOB RENTS AND DESIGN. Robert L. Hargrove, d.b.a. Carabob Rents. SN 256,446. Pub. 1-2-68. Filed 10-14-66.

846,430. DOWELL AND DESIGN. The Dow Chemical Company. SN 264,042. Pub. 1-2-68. Filed 2-6-67.

846,431. WORTH CROWIN' ABOUT. Famous Recipe Fried Chicken, Inc. SN 265,505. Pub. 1-2-68. Filed 2-27-67.

846,432. TACO BELL AND DESIGN. Taco Bell. SN 275,965. Pub. 1-2-68. Filed 7-13-67.

846,433. PEOPLE ON THE GO . . . GO BURGER CHEF. Burger Chef Systems, Inc. SN 279,982. Pub. 1-2-68. Filed 9-11-67.

846,434. PBA. Professional Bowlers Association of America. SN 280,460. Pub. 1-2-68. Filed 9-15-67.

846,435. BE MY GUEST. American Express Company. SN 282,759. Pub. 1-2-68. Filed 10-18-67.

846,436. SYNANON. Synanon Foundation, Inc. SN 283,399. Pub. 1-2-68. Filed 10-26-67.

846,437. MISCELLANEOUS DESIGN. Synanon Foundation, Inc. SN 283,400. Pub. 1-2-68. Filed 10-26-67.

Class 101 — Advertising and Business

846,438. MRS. LATIN-AMERICA. Palisades Pageants, Inc. SN 216,725. Pub. 1-2-68. Filed 4-16-65.

846,439. SUPER SPELL. Glendinning Companies, Inc., by merger and change of name from Glendinning Enterprises, Inc. SN 248,802. Pub. 1-2-68. Filed 6-23-66.

846,440. WIN IN THE WEST. Glendinning Companies, Inc., by assignment, merger, and change of name from The Chase Company, Inc. SN 249,731. Pub. 1-2-68. Filed 7-7-66.

846,441. H AND DESIGN. Hilton Service Corporation. SN 257,958. Pub. 1-2-68. Filed 11-4-66.

846,442. ANDY FRAIN. Andy Frain, Inc. SN 261,483. Pub. 1-2-68. Filed 12-27-66.

846,443. STEP UP TO CONDITIONED AIR AND DESIGN. Air-Conditioning and Refrigeration Institute. SN 265,149. Pub. 1-2-68. Filed 2-21-67.

846,444. DIXIE PERSONNEL AND DESIGN. Dixie Agencies, Inc. SN 275,647. Pub. 1-2-68. Filed 7-10-67.

846,445. R AND DESIGN. Rosinsky's Incorporated. SN 275,727. Pub. 1-2-68. Filed 7-11-67.

846,446. PLYWORLD. Plyworld, Inc. SN 277,210. Pub. 1-2-68. Filed 7-31-67.

846,447. ADT ETC. AND DESIGN. American District Telegraph Company. SN 282,250. Pub. 1-2-68. Filed 10-11-67.

Class 102 — Insurance and Financial

846,448. MISCELLANEOUS DESIGN. Marine Midland Corporation. SN 185,915. Pub. 1-2-68. Filed 2-3-64.

846,449. HN AND DESIGN. Hawkeye National Investment Co. SN 258,694. Pub. 1-2-68. Filed 11-15-66.

846,450. CHEXTRA. The Central Bank and Trust Company. SN 263,534. Pub. 1-2-68. Filed 1-30-67.

846,451. CHEXTRA AND DESIGN. The Central Bank and Trust Company. SN 263,535. Pub. 1-2-68. Filed 1-30-67.

846,452. LL. The Lamar Life Insurance Company. SN 263,674. Pub. 1-2-68. Filed 1-31-67.

846,453. MISCELLANEOUS DESIGN. Bank of America National Trust and Savings Association. SN 266,402. Pub. 1-2-68. Filed 3-10-67.

846,454. MIDAMERICA AND DESIGN. Midamerica Mutual Life Insurance Company. SN 274,083. Pub. 1-2-68. Filed 6-16-67.

Class 103 — Construction and Repair

846,455. TILDEN. S. G. Tilden, Incorporated. SN 249,812. Pub. 1-2-68. Filed 7-7-66.

846,456. THE SWASHER. R.K.E. Company. SN 263,779. Pub. 1-2-68. Filed 2-1-67.

846,457. BIG BARNEY AND DESIGN. Lanning Equipment Corporation. SN 265,831. Pub. 1-2-68. Filed 3-2-67.

846,458. WEBB-LIPOW. Webb & Lipow. SN 265,541. Pub. 1-2-68. Filed 4-6-67.

846,459. ILLINI AND DESIGN. Illini Electric Contractor Inc. SN 271,756. Pub. 1-2-68. Filed 5-18-67.

846,460. MISCELLANEOUS DESIGN. Illini Plumbing and Heating Inc. SN 271,757. Pub. 1-2-68. Filed 5-18-67.

846,461. MISCELLANEOUS DESIGN. Synanon Foundation, Inc. SN 283,401. Pub. 1-2-68. Filed 10-26-67.

846,462. SYNANON. Synanon Foundation, Inc. SN 283,495. Pub. 1-2-68. Filed 10-27-67.

Class 104 — Communication

846,463. DALCODE. The Western Union Telegraph Company. SN 265,858. Pub. 1-2-68. Filed 3-2-67.

Class 105 — Transportation and Storage

846,464. WOLFETOURS AND DESIGN. Ernest E. Wolfe, Jr., d.b.a. Wolfe Travel Service. SN 252,303. Pub. 1-2-68. Filed 8-12-66.

846,465. BUDGET ETC. AND DESIGN. Budget Rent-A-Car Corporation of America. SN 260,013. Pub. 9-26-67. Filed 12-5-66.

846,466. FIGURE OF MAN WITH BRIEFCASE (DESIGN). Fernstrom Storage and Van Company, d.b.a. Fernstrom Moving System. SN 261,829. Pub. 1-2-68. Filed 1-3-67.

846,467. LOADED WITH EXPERIENCE. R-W Service System, Inc. SN 266,090. Pub. 1-2-68. Filed 3-6-67.

Class 106 — Material Treatment

846,334. (See Class 42 for this trademark.)

846,468. REPRESENTATION OF A RACCOON. Professional Portrait Service, Inc. SN 265,556. Pub. 1-2-68. Filed 2-27-67.

846,469. EDENPREST E AND DESIGN. Eden Textiles, Inc. SN 267,714. Pub. 1-2-68. Filed 3-28-67.

Class 107 — Education and Entertainment

846,428. (See Class 100 for this trademark.)

846,470. MISCELLANEOUS DESIGN. Michael J. Rauseo, d.b.a. Management Research Associates. SN 239,174. Pub. 1-2-68. Filed 2-18-66.

846,471. SAFETY CARE-A-VAN. Insurance Company of North America. SN 259,733. Pub. 1-2-68. Filed 11-30-66.

846,472. THE LONE RANGER. Wrather Corporation. SN 259,782. Pub. 1-2-68. Filed 11-30-66.

846,473. U.F.O.'s. Joseph Fontana, Jr., d.b.a. U.F.O.'s. SN 264,316. Pub. 1-2-68. Filed 2-9-67.

846,474. M-I-A MODELING INSTITUTE OF AMERICA AND DESIGN. Massey Junior College, Inc. SN 265,201. Pub. 1-2-68. Filed 2-21-67.

846,475. ROBERT H. GODDARD. National Space Club. SN 280,448. Pub. 1-2-68. Filed 9-15-67.

Collective Membership Mark

Class 200

846,476. VICA AND DESIGN. Vocational Industrial Clubs of America, Inc. SN 266,119. Pub. 1-2-68. Filed 3-6-67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 6 — Chemicals and Chemical Compositions

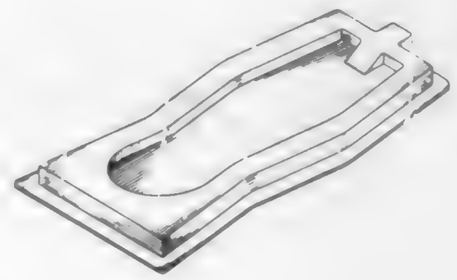
846,477. Hilliard Products, Inc., New Holland, Pa. SN 238,736. Filed P.R. 2-14-66; Am. S.R. 1-10-68.

END O' RAT

For Rat and Mice Killer in the Form of Bait Kakes (Int. Cl. 5).
First use Sept. 3, 1965.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

846,478. Edmond Bordeaux Szekely, d.b.a. Edmond S. Bordeaux, San Diego, Calif. SN 251,015. Filed P.R. 7-25-66; Am. S.R. 12-12-67.



The mark is a configuration for a bathtub.
For Bathtub (Int. Cl. 11).
First use 1945.

Class 15 — Oils and Greases

846,479. Beltraction Company, Chicago, Ill. SN 259,710. Filed P.R. 11-30-66; Am. S.R. 1-24-68.

SLIPMOR

For Lubricants—Namely, Silicone Lubricant (Int. Cl. 4).
First use Aug. 16, 1965.

Class 18 — Medicines and Pharmaceutical Preparations

846,480. Bristol-Myers Company, New York, N.Y. SN 263,348. Filed P.R. 1-26-67; Am. S.R. 1-3-68.

IT MAY BE JUST WHAT YOU NEED

For Vitamin Mineral Supplement (Int. Cl. 5).
First use Aug. 1, 1966.

Class 26 — Measuring and Scientific Appliances

846,481. General Electric Company, Pittsfield, Mass. SN 254,151. Filed 9-9-66.

D'ENTREMONT

For Metering Type Compensation for Electrical Apparatus—Namely, Current Transformers (Int. Cl. 9).
First use Sept. 7, 1962.

Class 29 — Brooms, Brushes, and Dusters

846,482. Revlon, Inc., New York, N.Y. SN 240,787. Filed P.R. 3-11-66; Am. S.R. 1-17-68.

LAMBSDOWN PUFFER

For Cosmetic Applicators (Int. Cl. 21).
First use Nov. 5, 1965.

Class 46 — Foods and Ingredients of Foods

846,483. Knudsen Creamery Co. of California, d.b.a. Knudsen Creamery Co., Los Angeles, Calif. SN 256,104. Filed P.R. 10-10-66; Am. S.R. 10-24-67.

DIET 225

For Modified Milk Dietary (Int. Cl. 29).
First use Aug. 11, 1966.

846,484. Wilson & Co., Inc., Chicago, Ill., assignee of Wilson & Co., Inc., Chicago, Ill. SN 270,993. Filed 5–8–67.

BIG-EYE

For Fresh Pork Loins (Int. Cl. 2).
First use Nov. 14, 1964.

Class 47 — Wines

846,485. G. B. Pezziol S.p.A., Milan, Italy. SN 243,803. Filed P.R. 4–19–66; Am. S.R. 1–24–68.

CYNAR

Owner of Italian Reg. No. 99,835, dated Apr. 1, 1950; and U.S. Reg. No. 587,130.
For Wines (Int. Cl. 30).

Class 51 — Cosmetics and Toilet Preparations

846,486. Clairol Incorporated, New York, N.Y. SN 248,302. Filed P.R. 6–17–66; Am. S.R. 1–9–68.

BLONDE DATE

For Hair Tinting, Dyeing, and Coloring Preparation (Int. Cl. 3).
First use May 15, 1966.

846,487. Revlon, Inc., New York, N.Y. SN 258,925. Filed P.R. 11–17–66; Am. S.R. 1–17–68.

'STAY BLONDE'

For Hair Coloring Preparation (Int. Cl. 3).
First use Oct. 13, 1966.

864,488. Revlon, Inc., New York, N.Y. SN 262,060. Filed P.R. 1–6–67; Am. S.R. 1–17–68.

ASH HAZE

For Hair Coloring Rinse (Int. Cl. 3).
First use Nov. 4, 1966.

846,489. Revlon, Inc., New York, N.Y. SN 262,062. Filed P.R. 1–6–67; Am. S.R. 1–17–68.

CHAMPAGNE SMOKE

For Hair Coloring Rinse (Int. Cl. 3).
First use Nov. 4, 1966.

846,490. Revlon, Inc., New York, N.Y. SN 262,064. Filed P.R. 1–6–67; Am. S.R. 1–17–68.

PINK BUFF

For Hair Coloring Rinse (Int. Cl. 3).
First use Nov. 4, 1966.

646,491. Revlon, Inc., New York, N.Y. SN 262,065. Filed P.R. 1–6–67; Am. S.R. 1–17–68.

PLATINUM SILVER

For Hair Coloring Rinse (Int. Cl. 3).
First use Nov. 4, 1966.

846,492. Revlon, Inc., New York, N.Y. SN 262,066. Filed P.R. 1–6–67; Am. S.R. 1–17–68.

'STAY GRAY'

For Hair Coloring Rinse (Int. Cl. 3).
First use Nov. 4, 1966.

846,493. Thelma Sykes, d.b.a. Sykes Laboratory, Homestead, Fla. SN 263,879. Filed P.R. 2–3–67; Am. S.R. 1–22–68.

"Perfect Nail"

For Base Coat for Fingernails (Int. Cl. 3).
First use Jan. 10, 1967.

Service Mark

Class 100 — Miscellaneous

846,494. Inelco, Inc., and Western Fabricators, Inc., d.b.a. National Compressor Rentals, Houston, Tex. SN 245,591. Filed P.R. 5–13–66; Am. S.R. 8–7–67.

NATIONAL COMPRESSOR RENTALS

For Leasing Pipeline Compressors and Gas Production Compressors (Int. Cl. 42).
First use Apr. 13, 1965.

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30,868. DMC AND DESIGN. Cl. 43 (Int. Cl. 23). 11–16–1897.
30,869. DMC AND DESIGN. Cl. 43 (Int. Cl. 23). 11–16–1897.
67,165. SHEFFIELD. Cl. 46 (Int. Cl. 29). 1–21–08.
67,485. "QUAKER" AND DESIGN. Cl. 46 (Int. Cl. 30). 2–4–08.
67,607. ENULE. Cl. 18 (Int. Cl. 5). 2–11–08.
68,110. WYETH'S. Cl. 18 (Int. Cl. 5). 3–10–08.
68,137. J-M. Cl. 12 (Int. Cls. 17 and 19). 3–10–08.
69,087. REPRESENTATION OF CUB BEAR'S HEAD IN CIRCULAR OUTLINE. Cl. 39 (Int. Cl. 25). 5–19–08.
69,196. DIXIE. Cl. 35 (Int. Cl. 17). 5–26–08.
144,139. "OILWELL." Cl. 23 (Int. Cl. 7). 6–21–21.
234,274. THE CORSET AND UNDERWEAR REVIEW. Cl. 38 (Int. Cl. 16). 10–18–27.
237,407. TAMOL. Cl. 6 (Int. Cl. 2). 1–10–28.
237,577. OSMAN. Cl. 42 (Int. Cl. 24). 1–10–28.
237,983. ABBOTT IN A TREE (DESIGN). Cl. 39 (Int. Cl. 25.) 1–24–28.
238,338. BLUE CHIP. Cl. 14 (Int. Cl. 6). 2–7–28.
238,453. STACOOL. Cl. 15 (Int. Cl. 4). 2–7–28.
238,627. GOLD LABEL. Cl. 17 (Int. Cl. 34). 2–14–28.
238,888. ANSCOT. Cl. 39 (Int. Cl. 25). 2–14–28.
239,884. OLD BADGER BOND. Cl. 37 (Int. Cl. 16). 3–13–28.
240,675. AUTOPLATE. Cl. 23 (Int. Cl. 7). 4–3–28.
240,780. SNUZE. Cl. 42 (Int. Cl. 24). 4–10–28.
240,926. SMITH'S. Cl. 34 (Int. Cl. 9). 4–10–28.

240,927. SMITH'S. Cl. 13 (Int. Cl. 6). 4–10–28.
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243,197. GOOD AND PLENTY. Cl. 46 (Int. Cl. 30). 6–12–28.
243,477. VELVETIER. Cl. 46 (Int. Cl. 30). 6–26–28.
433,577. BROSCONA. Cl. 26 (Int. Cl. 1). 10–21–47.
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436,506. GAYLIFE AND DESIGN. Cl. 39 (Int. Cl. 25). 2–10–48.
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436,607. ILLUMINEERING AND DESIGN. Cl. 38 (Int. Cl. 16). 2–17–48.
436,611. WRITE RIGHT. Cl. 37 (Int. Cl. 16). 2–17–48.
436,998. DESIGN OF A SALUTING FIGURE. Cl. 46 (Int. Cl. 30). 3–2–48.
437,107. MASTER-BILT. Cl. 12 (Int. Cl. 19). 3–9–48.
437,275. LITTLEWAY. Cl. 43 (Int. Cl. 23). 3–9–48.
437,281. BALLAD. Cl. 28 (Int. Cl. 8). 3–9–48.
437,282. ENCORE. Cl. 28 (Int. Cl. 8). 3–9–48.
437,283. GRANDEUR. Cl. 28 (Int. Cl. 8). 3–9–48.
437,835. PAKLITE. Cl. 32 (Int. Cl. 20). 3–30–48.
438,163. ACOUSTEEL. Cl. 12 (Int. Cl. 6). 4–13–48.
438,214. CLING SURFACE 50. Cl. 6 (Int. Cl. 1). 4–13–48.
438,234. ALLCOCKS AND DESIGN. Cl. 18 (Int. Cl. 5). 4–13–48.
438,541. RAY-BOND. Cl. 35 (Int. Cl. 7). 4–27–48.
438,655. LINDE. Cl. 26 (Int. Cl. 9). 5–11–48.
438,672. VANITY WIZARD WEAVE. Cl. 39 (Int. Cl. 25). 5–11–48.
439,354. EXCALIBUR. Cl. 23 (Int. Cl. 8). 6–22–48.
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500,493. BEVERLY. Cl. 39 (Int. Cl. 25). 6–1–48.
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500,540. NAMIDONE. Cl. 18 (Int. Cl. 5). 6–1–48.
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500,741. FLEECY WHITE. Cl. 6 (Int. Cl. 3). 6–29–48.
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Section 8

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726,879. TRU-BLOC FOUNDATION ETC. AND DESIGN. Cl. 12.
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726,901. ULOSPANS. Cl. 18.
726,906. AMBITROPE. Cl. 18.
726,910. EUCADRYL. Cl. 18.
726,912. WINSTON. Cl. 19.
726,914. GOLFSTREAMER. Cl. 19.
726,915. OCEAN AIRE. Cl. 19.
726,920. TRANSCRAFT AND DESIGN. Cl. 21.
726,923. HEATMASTER. Cl. 21.
726,924. THERMOTIZED. Cl. 21.
726,926. VIGILANTE. Cl. 21.
726,927. 707. Cl. 21.
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726,931. GETTYSBURG. Cl. 22.
726,932. SUPERIOR AND DESIGN. Cl. 22.
726,936. BLACKJACK AND DESIGN. Cl. 22.
726,938. DAYTONA INTERNATIONAL SPEEDWAY. Cl. 22.
726,939. WEED WING. Cl. 22.
726,941. THE BAT. Cl. 22.
726,942. MAGIC TOUCH. Cl. 24.
726,944. MERCEDES. Cl. 23.
726,962. TOUCH COMMAND. Cl. 24.
726,968. ERINGUARD. Cl. 26.
726,969. METRO FARER. Cl. 26.
726,971. MERCEDES. Cl. 26.
726,973. NUMERATOR 88 AND DESIGN. Cl. 26.
726,982. RATOGRAPHIC. Cl. 26.
726,985. GAMMA SENTRY. Cl. 26.
726,986. FAIRFIELD. Cl. 26.
726,987. DETECTO GAS. Cl. 26.
726,990. MICROFLASH. Cl. 26.
726,999. PICTURE TIME. Cl. 26.
727,001. VACULATOR. Cl. 26.
727,003. HYDEL. Cl. 26.
727,008. KARBANK. Cl. 26.
727,009. PANEL-PACK. Cl. 26.
727,012. REPRESENTATION OF FOUR LIGHTNING ARROWS. Cl. 29.
727,013. SWIVEL-EASE. Cl. 29.
727,014. CRIST-POR-TRA AND DESIGN. Cl. 32.
727,016. STYLE-IN-STEEL. Cl. 32.
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727,031. CWC. Cl. 37.
727,034. MYSTER-REE. Cl. 37.
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727,039. THE DAZEY PLAN. Cl. 38.
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727,118. ELECTRI-LIVING. Cl. A.
727,120. NAIL-IT. Cl. 12.
727,122. EUROMARKET SURVEYS. Cl. 38.

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MARCH 19, 1968

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Abbott Co., The, Yarmouth, to G. H. Bass & Co., Wilton, Maine. 237,983, ren. 3–19–68. Cl. 39.
Abraham & Straus, Inc., d.b.a. Anscot, New York, to Federated Department Stores, Inc., d.b.a. Abraham & Straus, Inc., Brooklyn, N.Y. 238,888, ren. 3–19–68. Cl. 39.
Acme Poultry Co. : *See*—
Acme Poultry & Egg Co.
Acme Poultry & Egg Co., d.b.a. Acme Poultry Co., Seattle, Wash. 846,352, pub. 3–15–66. Cl. 46.
Adlwerke Vorm. Heinrich Kleyer A.G., Frankfurt am Main, Germany. 727,025, canc. Cl. 37.
Air Reduction Co., Inc., New York, N.Y. 846,257, pub. 5–17–66. Cl. 34.
Air-Conditioning & Refrigeration Institute, Arlington, Va. 846,443, pub. 1–2–68. Cl. 101.
Aktiengesellschaft Fur Textil-Industrie, Vormals Dollfus-Mieg & Cie., Mulhausen, Germany, Belfort and Paris, France, to Dollfus-Mieg & Cie, Societe Anonyme, Paris, France. 30,868–9, ren. 3–19–68. Cl. 43.
Alaska Northwest Publishing Co., Edmonds, Wash. 846,293–4, pub. 1–2–68. Cl. 38.
All Time Togs, Inc., New York, N.Y. 846,315, pub. 1–2–68. Cl. 39.
Allcock Mfg. Co., Ossining, N.Y. 438,234, ren. 3–19–68. Cl. 18.
Alloyd Engineering Laboratory, Inc., Verona, Wis. 727,069, canc. Cl. 44.
American Bakeries Co., Chicago, Ill. 846,361, pub. 1–2–68. Cl. 46.
American Brake Shoe Co., New York, N.Y. 727,003, canc. Cl. 26.
American Cyanamid Co., Wayne, N.J. 846,097–8, pub. 1–2–68. Cl. 5.
American District Telegraph Co., New York, N.Y. 846,447, pub. 1–2–68. Cl. 101.
American Express Co., New York, N.Y. 846,435, pub. 1–2–68. Cl. 100.
American Home Products Corp. : *See*—
Wyeth, John, & Bro. Inc.
American Record Mfg. and Distributors Association, Chicago, Ill. 727,117, canc. Cl. 200.
American Rolling Mill Co., The, to Armco Steel Corp., Middletown, Ohio. 500,219, ren. 3–19–68. Cl. 14.
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American Society of Tool & Mfg. Engineers, Dearborn, Mich. 846,290, pub. 1–2–68. Cl. 38.
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Anderson Bros., Inc., from Anderson Bros. Consolidated Companies, Inc., Danville, Va. 846,306, pub. 10–24–67. Cl. 39.
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Arlan's Dept. Stores, Inc., New York, N.Y. 846,246, pub. 1–2–68. Cl. 29.
Armco Steel Corp. : *See*—
American Rolling Mill Co., The.
Austin-Berryhill, Inc., Greensboro, N.C. 846,259, pub. 1–2–68. Cl. 34.
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Automation Development Corp., Mentor, Ohio. 846,212, pub. 1–2–68. Cl. 23.
Automotive Merchandisers, Inc., Collinsville, Ill. 846,126, pub. 9–26–67. Cl. 15.
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B & E Mfg. Co., Hopkins, Minn. 726,928, canc. Cl. 22.
B.K.G., Inc., Los Angeles, Calif. 846,233, pub. 1–2–68. Cl. 26.
Bachman Bakeries Corp., Reading, Pa. 727,085, canc. Cl. 46.
Bank of America National Trust & Savings Association, San Francisco, Calif. 846,458, pub. 1–2–68. Cl. 102.
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Bradley, Milton, Co., Springfield, Mass. 846,192, pub. 1–2–68. Cl. 22.
Bristol-Myers Co., New York, N.Y. 846,144–7, pub. 1–2–68. Cl. 18.
Bristol-Myers Co., New York, N.Y. 846,150, pub. 1–2–68. Cl. 18.
Bristol-Myers Co., New York, N.Y. 846,480. Cl. 18.
Bud Type Cleaner Co. : *See*—
Tessco, Inc.
Budget Rent-A-Car Corp. of America, Chicago, Ill. 846,465, pub. 9–26–67. Cl. 105.
Burger Chef Systems, Inc., Indianapolis, Ind. 846,483, pub. 1–2–68. Cl. 100.
Burroughs Wellcome & Co. (U.S.A.) Inc. : *See*—
Henry Solomon Wellcome.
Calumet & Hecla, Inc., Allen Park, Mich. 846,263, pub. 1–2–68. Cl. 34.
Canadian Schenley Distilleries, Ltd., Montreal, Quebec, Canada. 846,398, pub. 1–2–68. Cl. 49.
Cannon Mills Co., Kannapolis, N.C. 435,786, ren. 3–19–68. Cl. 42.
Carabob Rents : *See*—
Hargrove, Robert L.
Carbon Web Corp., Cincinnati, Ohio. 727,031, canc. Cl. 37.
Carmi-Ainsbrooke Corp., to Carmi-Ainsbrooke Corp., New York, N.Y. 727,046, canc. Cl. 39.
Carnation Co., Los Angeles, Calif. 846,367, pub. 1–2–68. Cl. 46.
Caron Corp., New York, N.Y. 846,417, pub. 1–2–68. Cl. 51.
Carsen Instruments Ltd., Toronto, Ontario, Canada. 846,225, pub. 1–2–68. Cl. 26.
Carver, Fred S., Inc., Summit, N.J. 846,208, pub. 1–2–68. Cl. 23.
Celotex Corp., The, Tampa, Fla. 438,163, ren. 3–19–68. Cl. 12.
Central Bank & Trust Co., The, Denver Colo. 846,450–1, pub. 1–2–68. Cl. 102.
Cerro Corp., New York, N.Y. 846,181, pub. 1–2–68. Cl. 21.

Charleston Metallic Packing Co., Charleston, S.C., to Raybestos-Manhattan, Inc., Passaic, N.J. 69,196, ren. 3–19–68. Cl. 35.
Chase Co., Inc., The: *See*—
Glendinning Companies, Inc.
Chemische Werke Muchen, Otto Barlocher G.m.b.H., Munich, Germany. 846,100, pub. 1–2–68. Cl. 6.
Chevron Chemical Co., San Francisco, Calif. 846,102, pub. 1–2–68. Cl. 6.
Chicago Pneumatic Tool Co., New York, N.Y. 846,226, pub. 11–14–67. Cl. 26.
Chipurnoi, Perry H., Inc., New York, N.Y. 846,354, pub. 8–22–67. Cl. 46.
Clairol Inc., New York, N.Y. 846,486, Cl. 51.
Clark Shoe Co., Inc., Boston, Mass. 846,301, pub. 5–30–67. Cl. 39.
Cling-Surface Co., Buffalo, N.Y. 438,214, ren. 3–19–68. Cl. 6.
Clipper Associates, Attleboro, Mass. 846,401, pub. 1–2–68. Cl. 50.
Cohen, Edward L., d.b.a. Edwards Home Products, Merchantville, N.J. 726,942, canc. Cl. 22.
Cohen, Joseph H., & Sons, Inc., to Rapid-American Corp., New York, N.Y. 438,672, ren. 3–19–68. Cl. 39.
Cohn, T., Inc., Brooklyn, N.Y. 726,932, canc. Cl. 22.
Colgate-Palmolive Co., New York, N.Y. 846,140, pub. 1–2–68. Cl. 18.
Colt Corp., Charlotte, N.C. 846,318, pub. 1–2–68. Cl. 39.
Commercial Equipment Finance Corp., Milwaukee, Wis. 727,112, canc. Cl. 102.
Conco Inc., Mendota, Ill. 846,215, pub. 1–2–68. Cl. 23.
Consolidated International Trading Corp., New York, N.Y. 846,316, pub. 1–2–68. Cl. 39.
Consolidated Retail Stores, Inc., to Senack Shoes, Inc., St. Louis, Mo. 500,492–3, ren. 3–19–68. Cl. 39.
Consolidated Vacuum Corp., Rochester, N.Y. 727,001, canc. Cl. 26.
Continental Oil Co., Ponca City, Okla. 846,128, pub. 1–2–68. Cl. 15.
Converted Rice, Inc., to Uncle Ben's, Inc., Houston, Tex. 436,523, ren. 3–19–68. Cl. 46.
Converted Rice, Inc., to Uncle Ben's, Inc., Houston, Tex. 436,998, ren. 3–19–68. Cl. 46.
Conwed Corp.: *See*—
Wood Conversion Co.
Cordis Corp., Miami, Fla. 846,345, pub. 1–2–68. Cl. 44.
Creative Arts, Inc., Miami, Fla. 727,093, canc. Cl. 50.
Crist, C. Wesley, Portland, Oreg. 727,014, canc. Cl. 32.
Cromwell Business Machines, North Hollywood, Calif. 726,973, canc. Cl. 26.
Crookes-Barnes Laboratories, Inc., Wayne, N.J. 726,910, canc. Cl. 18.
Cross Reference Publications, Inc., Chicago, Ill. 846,291, pub. 1–2–68. Cl. 38.
Curtis, Helene, Industries, Inc., Chicago, Ill. 727,096, canc. Cl. 51.
Curtiss-Wright Corp., Princeton, N.J. 726,985, canc. Cl. 26.
D.D.D. Corp., Batavia, Ill., to Purex Corp., Ltd., Lakewood, Calif. 500,652. ren. 3–19–68. Cl. 52.
Daggett & Ramsdell, Inc., New York, N.Y. 727,099, canc. Cl. 52.
Dana Brown-Private Brands, Inc., St. Louis, Mo. 846,362, pub. 1–2–68. Cl. 46.
Data Graphic, Inc., East Rochester, N.Y. 846,277, pub. 1–2–68. Cl. 37.
Dawe's Laboratories, Inc., Chicago, Ill. 846,143, pub. 1–2–68. Cl. 18.
Day-Timers, Inc., Allentown, Pa. 846,278, pub. 1–2–68. Cl. 37.
Dazey Enterprises, Inc., St. Louis, Mo. 727,039, canc. Cl. 38.
Deft, Inc., Torrance, Calif. 846,135–6, pub. 1–2–68. Cl. 16.
Demert & Dougherty, Inc., Chicago, Ill. 846,408, pub. 7–4–67. Cl. 51.
Demon Lure Co.: *See*—
Black, Julius S.
Densco, Inc., Denver, Colo. 846,342, pub. 1–2–68. Cl. 44.
Deseret Pharmaceutical Co., Inc., Salt Lake City, Utah. 846,343, pub. 1–2–68. Cl. 44.
Design & Production, Inc., Alexandria, Va. 727,018, canc. Cl. 32.
Detectogas Instruments, Inc., Houston, Tex. 726,987, canc. Cl. 26.
Dixie Agencies, Inc., Jacksonville, Fla. 846,444, pub. 1–2–68. Cl. 101.
Dodge & Olcott, Inc., New York, N.Y. 846,379, pub. 1–2–68. Cl. 46.
Dollfus-Mieg & Cie, Societe Anonyme: *See*—
Aktiengesellschaft Fur Textil-Industries, Vormals Dollfus-Mieg & Cie.
Dow Chemical Co., The, Midland, Mich. 846,430, pub. 1–2–68. Cl. 100.
Dublin Industries, Inc., Hayward, Calif. 726,968, canc. Cl. 26.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 846,125, pub. 1–2–68. Cl. 14.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 846,237, pub. 1–2–68. Cl. 26.
E.Q.P. Electrical Quality Products Establishment, Vaduz, Liechtenstein. 846,245, pub. 1–2–68. Cl. 29.
Eastern Seaboard Plastics, Inc., Newark, N.J. 846,260, pub. 9–19–67. Cl. 34.
Echolette-Vertrieb Hans Bauer, Munich, Germany. 846,180, pub. 1–2–68. Cl. 21.
Eden Textiles, Inc., New York, N.Y. 846,469, pub. 1–2–68. Cl. 106.
Edgerton, Germeshausen & Grier, Inc., Boston, Mass. 726,990, canc. Cl. 26.
Edwards Home Products: *See*—
Cohen, Edward L.
El-Tronics, Inc., Warren, Pa. 846,177, pub. 1–2–68. Cl. 21.
Emerson Electric Co., St. Louis, Mo. 846,182, pub. 1–2–68. Cl. 21.
Endo Laboratories, Inc.: *See*—
Endo Products Inc.
Endo Products Inc., Richmond Hill, to Endo Laboratories, Inc., Garden City, N.Y. 500,540, ren. 3–19–68. Cl. 18.
English Sewing Ltd.: *See*—
Barlow & Jones, Ltd.
Erda Corp., The, Pine Plains, N.Y. 726,876, canc. Cl. 10.
Etablissements Neyrpic (Ateliers Neyrpetbeylier & Piccard-Pictet), Grenoble, France. 846,206, pub. 8–8–67. Cl. 23.
Etablissements Pierre Angenieux, S.A., Saint-Heand, France. 846,231, pub. 1–2–68. Cl. 26.
Evans, Bob, Farms, Michigan, Inc., Hillsdale, Mich. 846,356–7, pub. 1–2–68. Cl. 46.
Eversharp, Inc., Milford, Conn. 846,416, pub. 1–2–68. Cl. 51.
Exquisite Form Industries, Inc., New York, N.Y. 846,299, pub. 11–8–66. Cl. 39.
FCX Food Products: *See*—
FCX, Inc.
FCX, Inc., d.b.a. FCX Food Products, Raleigh, N.C. 846,372, pub. 1–2–68. Cl. 46.
Fabrics of America, Inc., Charlotte, N.C. 846,232, pub. 1–2–68. Cl. 26.
Famous Recipe Fried Chicken, Inc., Lima, Ohio. 846,374, pub. 1–2–68. Cl. 46.
Famous Recipe Fried Chicken, Inc., Lima, Ohio. 846,431, pub. 1–2–68. Cl. 100.
Fanner Mfg. Co., The, Division of Textron, Inc., Providence, R.I. 846,112, pub. 5–2–67. Cl. 13.
Farfisa S.p.A., Camerano, Ancona, Italy. 846,271, pub. 1–2–68. Cl. 36.
Fashion Tress, Inc., Miami Beach, Fla. 846,332, pub. 1–2–68. Cl. 40.
Federal Enameling & Stamping Co., Pittsburgh, Pa. 726,884, canc. Cl. 13.
Federated Department Stores, Inc.: *See*—
Abraham & Straus, Inc.
Fernstrom Moving System: *See*—
Fernstrom Storage & Van Co.
Fernstrom Storage & Van Co., d.b.a. Fernstrom Moving System, Chicago, Ill. 846,466, pub. 1–2–68. Cl. 105.
Ferro Corp., Cleveland, Ohio. 846,088, pub. 1–2–68. Cl. 1.
Fiber Industries, Inc., Charlotte, N.C. 846,089–90, pub. 1–2–68. Cl. 1.
Fieldcrest Mills, Inc., Spray, N.C. 727,055, canc. Cl. 42.
Firth Sterling Inc.: *See*—
Firth-Sterling Steel Co.
Firth Sterling Steel Co., McKeesport, to Firth Sterling Inc., Pittsburgh, Pa. 238,338, ren. 3–19–68. Cl. 14.
Fischer & Porter Co., Warminster, Pa. 726,982, canc. Cl. 26.
Fisher Pen Co., Forest Park, Ill. 727,034, canc. Cl. 37.
Florists' Transworld Delivery Assn., Detroit, Mich. 846,286, pub. 1–2–68. Cl. 38.
Flying W Ranch, Inc., Colorado Springs, Colo. 846,428, pub. 1–2–68. Multiple Class (Classes 100 and 107).
Fontana, Joseph, Jr., d.b.a. U.F.O.'s, Chicago, Ill. 846,473, pub. 1–2–68. Cl. 107.
Fox River Paper Co., to Fox River Paper Corp., Appleton, Wis. 239,884, ren. 3–19–68. Cl. 37.
Fox River Paper Corp.: *See*—
Fox River Paper Co.
Fox River Paper Corp., Appleton, Wis. 846,281, pub. 1–2–68. Cl. 37.
Frain, Andy, Inc., Chicago, Ill. 846,442, pub. 1–2–68. Cl. 101.
Franconeri, Inc., New York, N.Y. 846,405, pub. 1–2–68. Cl. 50.
G.E.D. Corp., Berkeley, Mich. 726,914, canc. Cl. 19.
Gallo, E. & J., Winery, d.b.a. Gallo Vineyards, Modesto, Calif. 846,396, pub. 1–2–68. Cl. 47.
Gallo Vineyards: *See*—
Gallo, E. & J., Winery.
Gaylife of Calif.: *See*—
Roback, Ida.
General Aniline & Film Corp., New York, N.Y. 433,577, ren. 3–19–68. Cl. 26.
General Aniline & Film Corp., New York, N.Y. 434,709, ren. 3–19–68. Cl. 6.
General Cigar Co., Inc.: *See*—
Sanchez & Haya Co.
General Electric Co., Schenectady, N.Y. 726,962, canc. Cl. 24.
General Electric Co., Pittsfield, Mass. 846,481. Cl. 26.
General Fireproofing Co., The, Youngstown, Ohio. 846,255, pub. 1–2–68. Cl. 32.
General Foods Corp., White Plains, N.Y. 846,426, pub. 1–2–68. Cl. 52.
General Instrument Corp., from General Instrument Corp., Newark, N.J. 846,173, pub. 1–2–68. Cl. 21.
General Mills, Inc., Minneapolis, Minn. 846,360, pub. 8–22–67. Cl. 46.
General Motors Corp., Detroit, Mich. 846,204, pub. 1–2–68. Cl. 23.
General Nutrition Corp., d.b.a. Natural Sales Co., Pittsburgh, Pa. 846,411, pub. 1–2–68. Cl. 51.
General Printed String Co., Milwaukee, Wis. 500,171, ren. 3–19–68. Cl. 7.
General Printed String Co., Milwaukee, Wis. 500,357, ren. 3–19–68. Cl. 7.
General Time Corp., New York, N.Y. 846,289, pub. 5–30–67. Cl. 27.
General Tire & Rubber Co., The, Akron, Ohio. 846,189, pub. 1–2–68. Cl. 22.

Gerber, Joseph R., assor. to Gerber Legendary Blades, to Gerber Legendary Blades, Portland, Oreg. 439,854, ren. 3–19–68. Cl. 23.
Gerber Legendary Blades: *See*—
Gerber, Joseph R.
Gerber Scientific Instrument Co., The, South Windsor, Conn. 846,229, pub. 1–2–68. Cl. 26.
Gerhard, Jean, d.b.a. App-Q Products, Pottsville, Pa. 846,353, pub. 1–2–68. Cl. 46.
Glendinning Companies, Inc., from Glendinning Enterprises, Inc., Westport, Conn. 846,439–40, pub. 1–2–68. Cl. 101.
Glendinning Enterprises, Inc.: *See*—
Glendinning Companies, Inc.
Goldman, Morton D., New York, N.Y. 846,307, pub. 9–12–67. Cl. 39.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 846,267, pub. 1–2–68. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 846,313, pub. 1–2–68. Cl. 39.
Goya Music Corp.: *See*—
Avnet, Inc.
Grace, W. R., & Co., New York, N.Y. 846,420–1, pub. 1–2–68. Cl. 52.
Graham Paper Co., St. Louis, Mo. 846,282, pub. 1–2–68. Cl. 37.
Grand Rapids Die Castings Corp., Grand Rapids, Mich. 846,124, pub. 1–2–68. Cl. 14.
Graphic Controls Corp., Buffalo, N.Y. 846,275, pub. 1–2–68. Cl. 37.
Green Giant Co., Le Sueur, Minn. 846,365, pub. 1–2–68. Cl. 46.
Greenberg, B. B., Co., Cranston, R.I. 846,243, pub. 1–2–68. Cl. 28.
Greenberg, B. B., Co., Cranston, R.I. 846,383, pub. 1–2–68. Cl. 40.
Haas-Davis Packing Co., Inc., Mobile, Ala. 846,349, pub. 12–29–64. Cl. 46.
Haire Publishing Co., Inc., New York, N.Y. 234,274, ren. 3–19–68. Cl. 38.
Hallmark Cards, Inc., Kansas City, Mo. 846,289, pub. 1–2–68. Cl. 38.
Hamm, Theo, Brewing Co., St. Paul, Minn. 846,397, pub. 1–2–68. Cl. 48.
Hargrove, Robert L., d.b.a. Carabob Rents, Lafayette, Calif. 846,429, pub. 1–2–68. Cl. 100.
Hart Schaffner & Marx, Chicago, Ill. 846,324, pub. 1–2–68. Cl. 39.
Hartz Mountain Products Corp., New York, N.Y. 846,377, pub. 1–2–68. Cl. 46.
Hastings Mfg. Co., Hastings, Mich. 846,268, pub. 1–2–68. Cl. 35.
Hat Corp. of America, to Hat Corp. of America, New York, N.Y. 439,627, ren. 3–19–68. Cl. 39.
Hawkeye National Investment Co., Des Moines, Iowa. 846,449, pub. 1–2–68. Cl. 102.
Hecon Corp., New Shrewsbury, from Hengstler Numerics, Inc., Palisades Park, N.J. 846,219–20, pub. 1–2–68. Cl. 26.
Heidenhain, Johannes, Dr., Optics and Electronics, Niles, Ill. 846,221, pub. 1–2–68. Cl. 26.
Heller & Usdan Inc., New York, N.Y. 727,024, canc. Cl. 37.
Hengstler Numerics, Inc.: *See*—
Hecon Corp.
Hershey Chocolate Co., to Hershey Chocolate Corp., Hershey, Pa. 243,477, ren. 3–19–68. Cl. 46.
Hershey Chocolate Corp.: *See*—
Hershey Chocolate Co.
Hilliard Products, Inc., New Holland, Pa. 846,477. Cl. 6.
Hillyard Enterprises, Inc., St. Joseph, Mo. 846,095, pub. 1–2–68. Cl. 4.
Hilton Service Corp., Chicago, Ill. 846,441, pub. 1–2–68. Cl. 101.
Hobart Mfg. Co., The, Troy, Ohio. 846,265, pub. 1–2–68. Cl. 35.
Hodgman Rubber Co., Framingham, to Tyer Rubber Corp., Andover, Mass. 437,835, ren. 3–19–68. Cl. 32.
Hole-Outs, Inc., Rosemont, Ill. 846,111, pub. 1–2–68. Cl. 12.
Holophane Co., Inc., New York, N.Y. 436,607, ren. 3–19–68. Cl. 38.
Holzer, E., Inc., New York, N.Y. 846,083, pub. 1–2–68. Cl. 1.
Home Decorators, Inc., Newark, N.Y. 846,248, pub. 1–2–68. Cl. 30.
Honeywell Inc.: *See*—
Minneapolis-Heat Regulator Co.
H3 Products Co.: *See*—
Platoff, Raphael P.
Hunter Douglas Ltd., Pointe Claire, Quebec, Canada. 846,108, pub. 1–2–68. Cl. 12.
Idea Development Co., Dallas, Tex. 846,346, pub. 1–2–68. Cl. 44.
Illini Electric Contractor Inc., Champaign, Ill. 846,459–60, pub. 1–2–68. Cl. 103.
Imperial Knife Associated Companies, Inc., Providence, R.I. 846,199, pub. 1–2–68. Cl. 23.
Indian Head Inc.: *See*—
Linen Thread Co., Inc., The.
Inelco, Inc., and Western Fabricators, Inc., d.b.a. National Compressor Rentals, Houston, Tex. 846,494. Cl. 100.
Insurance Co. of North America, Philadelphia, Pa. 846,471, pub. 1–2–68. Cl. 107.
Interchemical Corp., New York, N.Y. 846,133, pub. 1–2–68. Cl. 16.
International Latex & Chemical Corp., Dover, Del. 846,134, pub. 1–2–68. Cl. 16.
International Paper Co., New York, N.Y. 846,287, pub. 1–2–68. Cl. 38.
Israel Purchasing Service, Inc., New York, N.Y. 727,050–1, canc. Cl. 39.
Itek Corp., Lexington, Mass. 846,230, pub. 1–2–68. Cl. 26.
Jacobs, Eddie, Ltd., Baltimore, Md. 846,409, pub. 1–2–68. Cl. 51.
Jetronic Industries, Inc., Philadelphia, Pa. 846,234, pub. 1–2–68. Cl. 26.
Johns, H. W., -Manville Co., to Johns-Manville Corp., New York, N.Y. 68,137, ren. 3–19–68. Cl. 12.
Johns-Manville Corp.: *See*—
Johns, H. W., -Manville Co.
Jorgensen, Roger L., d.b.a. River Town Clothing Co., Omaha, Nebr. 846,302, pub. 1–2–68. Cl. 39.
K.P.B., Inc., New York, N.Y. 726,867, canc. Cl. 6.
K-S-H, Inc., from K-S-H Plastics, Inc., St. Louis, Mo. 846,109, pub. 1–2–68. Cl. 12.
K-S-H Plastics, Inc.: *See*—
K-S-H, Inc.
Kangol Magnet Ltd., London, England. 846,159, pub. 1–2–68. Cl. 19.
Kawecki Chemical Co., New York, N.Y. 846,123, pub. 3–21–67. Cl. 14.
Kayser-Roth Corp., New York, N.Y. 846,325–8, pub. 1–2–68. Cl. 39.
Keebler Co., Elmhurst, Ill. 846,384, pub. 1–2–68. Cl. 46.
Kelco Co., San Diego, Calif. 435,904, ren. 3–19–68. Cl. 46.
Kelley Co., Inc., Milwaukee, Wis. 846,175, pub. 1–2–68. Cl. 21.
Kellogg Co., Battle Creek, Mich. 727,089, canc. Cl. 46.
Kentile Floors, Inc., Brooklyn, N.Y. 846,166–8, pub. 1–2–68. Cl. 20.
Kimberly-Clark Corp., Neenah, Wis. 846,082, pub. 1–2–68. Cl. 1.
Knudsen Creamery Co.: *See*—
Knudsen Creamery Co. of California.
Knudsen Creamery Co. of California, d.b.a. Knudsen Creamery Co., Los Angeles, Calif. 846,483. Cl. 46.
Koehler-Dayton, Inc., Dayton, Ohio. 846,115, pub. 1–2–68. Cl. 13.
Kondo Products, Inc., Woodside, N.Y. 727,009, canc. Cl. 26.
Lamar Life Insurance Co., The, Jackson, Miss. 846,452, pub. 1–2–68. Cl. 102.
Lamb Industries, Inc., Toledo, Ohio. 846,187, pub. 1–2–68. Cl. 21.
Landers, Frary & Clark, New Britain, Conn. 726,927, canc. Cl. 21.
Landry Pharmaceuticals, Inc., Houston, Tex. 846,142, pub. 1–2–68. Cl. 18.
Lane Ltd., New York, N.Y. 846,139, pub. 1–2–68. Cl. 17.
Lanning Equipment Corp., Akron, Ohio. 846,457, pub. 1–2–68. Cl. 103.
Lennon Co., Solon, Ohio. 846,119, pub. 1–2–68. Cl. 13.
Lever Bros. Co., New York, N.Y. 846,394, pub. 1–2–68. Cl. 46.
Liberty Lobby, Inc., Washington, D.C. 846,295, pub. 1–2–68. Cl. 38.
Linde Air Products Co., The, to Union Carbide Corp., New York, N.Y. 486,405, ren. 3–19–68. Cl. 2.
Linde Air Products Co., The, to Union Carbide Corp., New York, N.Y. 438,655, ren. 3–19–68. Cl. 26.
Lindell Drop Forge Co., Lansing, Mich. 846,121, pub. 1–2–68. Cl. 14.
Linen Thread Co., Inc., The, to Indian Head Inc., New York, N.Y. 437,275, ren. 3–19–68. Cl. 43.
Link-Belt Co., Chicago, Ill. 846,211, pub. 1–2–68. Cl. 23.
Litton Business Systems, Inc., New York, N.Y., from Royal Typewriter Co., Inc., Greenwich, Conn. 846,236, pub. 1–2–68. Cl. 26.
Living Care Publishers, Inc., Chicago, Ill. 846,285, pub. 1–2–68. Cl. 38.
London Winery Ltd., London, Ontario, Canada. 846,395, pub. 1–2–68. Cl. 47.
Lorna Fashions, Inc., Dallas, Tex. 846,319, pub. 1–2–68. Cl. 39.
Lotman, S., & Son, Inc., Philadelphia, Pa. 846,370, pub. 1–2–68. Cl. 46.
Lowenthal-Berg, Ltd., New York, N.Y. 727,048, canc. Cl. 39.
Lull Engineering Co., Inc., St. Paul, Minn. 846,214, pub. 1–2–68. Cl. 23.
Luwa Ltd., Zurich, Switzerland. 846,261, pub. 1–2–68. Cl. 34.
Mag-Knit Fabrics Corp., New York, N.Y. 846,340, pub. 1–2–68. Cl. 42.
Magnetics, Inc., East Butler, Pa. 846,122, pub. 1–2–68. Cl. 14.
Maimin, H., Co., Inc., New York, N.Y. 242,748, ren. 3–19–68. Cl. 23.
Management Research Associates: *See*—
Rauseo, Michael J.
Mansfield Industries, Inc., Chicago, Ill. 726,986, canc. Cl. 26.
Marchessault, Fernand, Montreal, Quebec, Canada. 726,936, canc. Cl. 22.
Maremont Corp., Chicago, Ill. 846,162, pub. 1–2–68. Cl. 19.
Marine Midland Corp., Buffalo, N.Y. 846,448, pub. 1–2–68. Cl. 102.
Marken Educational Games, Inc., Daytona Beach, Fla. 726,938, canc. Cl. 22.
Martin, J. B., Co., Norwich, Conn. 436,165, ren. 3–19–68. Cl. 42.
Martin, J. B., Co., Norwich, Conn. 846,388, pub. 1–2–68. Cl. 42.
Martin Mfg. Co. Ltd., Los Angeles, Calif. 846,304, pub. 1–2–68. Cl. 39.
Mas Con Supply Co.: *See*—
Ankortite Co., Inc., The.
Massey Junior College, Inc., Atlanta, Ga. 846,474, pub. 1–2–68. Cl. 107.
Mathatronics, Inc.: *See*—
Wright, Barry, Corp.

Mattel, Inc., Hawthorne, Calif. 846,196–8, pub. 1–2–68. Cl. 22.
Mattingly, C. J., Packing Co., Inc., Glendale, Ariz. 727,082, canc. Cl. 46.
Mayfair Packing Co., d.b.a. Mayfair Packing Co., San Jose, Calif. 846,382, pub. 1–2–68. Cl. 46.
McCrory Corp., New York, N.Y. 846,329, pub. 1–2–68. Cl. 39.
McTague, Edward W., Cornwall-On-Hudson, N.Y. 846,296, pub. 1–2–68. Cl. 38.
Mead Corp., The, Dayton, Ohio. 846,274, pub. 9–12–68. Cl. 37.
Mead Johnson & Co., Evansville, Ind. 846,386, pub. 1–2–68. Cl. 46.
Mercantile Stores Co., Inc., New York, N.Y. 846,331, pub. 1–2–68. Cl. 39.
Mercedes Buromaschinen-Werke Aktiengesellschaft, Frankfurt am Main, Germany. 726,944, canc. Cl. 23.
Mercedes Buromaschinen-Werke Aktiengesellschaft, Frankfurt am Main, Germany. 726,971, canc. Cl. 26.
Merck & Co., Inc., Rahway, N.J. 726,906, canc. Cl. 18.
Metal Industries, Inc., Clearwater, Fla. 846,262, pub. 1–2–68. Cl. 34.
Meyer, Fred, Inc., Portland, Oreg. 846,190, pub. 1–2–68. Cl. 22.
Michigan Fruit Canners, Inc., Chicago, Ill. 846,358, pub. 1–2–68. Cl. 46.
Microlab/FXR, Livingston, N.J. 846,186, pub. 1–2–68. Cl. 21.
Microspheres, Inc., Palo Alto, Calif. 846,235, pub. 1–2–68. Cl. 26.
Midamerica Mutual Life Insurance Co., St. Paul, Minn. 846,454, pub. 1–2–68. Cl. 102.
Midland-Ross Corp., Cleveland, Ohio. 846,163, pub. 1–2–68. Cl. 19.
Milan Art Plastics, Inc., New York, N.Y. 846,086, pub. 1–2–68. Cl. 1.
Miller Tube Corp. of America, Flushing, N.Y. 846,120, pub. 1–2–68. Cl. 13.
Milwaukee Valve Co., to Milwaukee Valve Co., Inc., Milwaukee, Wis. 243,049, ren. 3–19–68. Cl. 13.
Milwaukee Valve Co., Inc.: *See*—
Milwaukee Valve Co.
Minneapolis-Heat Regulator Co., to Honeywell Inc., Minneapolis, Minn. 241,954, ren. 3–19–68. Cl. 21.
Modern Engraving & Machine Corp., Hillside, N.J. 846,202, pub. 1–2–68. Cl. 23.
Mohawk Finishing Products, Inc., Amsterdam, N.Y. 846,130, pub. 1–2–68. Cl. 16.
Molded Fiber Glass Body Co., Union City, Pa. 846,160, pub. 1–2–68. Cl. 19.
Monsanto Co., St. Louis, Mo. 846,334, pub. 1–2–68. Multiple Class (Classes 42 and 106).
Moog Industries, Inc., St. Louis, Mo. 846,158, pub. 6–21–66. Cl. 19.
More Candy Co., Inc., Rochester, N.Y. 846,355, pub. 1–2–68. Cl. 46.
Mosier Harbor Sales Corp., Belmont, Calif. 846,252, pub. 1–2–68. Cl. 32.
Motosacoche Societe Anonyme, Geneva, Switzerland. 436,306, ren. 3–19–68. Cl. 23.
Murray Elevators: *See*—
Nelson, Sterling H., & Sons, Inc.
Murray Envelope Corp., Hattiesburg, Miss. 846,272–3, pub. 10–4–66. Cl. 37.
Muto, Tak, Encinitas, Calif. 726 849, canc. Cl. 1.
Mutual Citrus Products Co., Anaheim, Calif. 846,391, pub. 1–2–68. Cl. 46.
National Compressor Rentals: *See*—
Ineico, Inc., and Western Fabricators, Inc.
National Dairy Products Corp.: *See*—
Sheffield Farms-Slawson-Decker Co.
National Dairy Products Corp., Chicago, Ill. 846,380, pub. 1–2–68. Cl. 46.
National Glass Dealers Association, Washington, D.C. 846,298, pub. 1–2–68. Cl. 38.
National Lead Co., New York, N.Y. 500,496, ren. 3–19–68. Cl. 14.
National Safe Transit Committee, Inc., Washington, D.C. 727,041, canc. Cl. 38.
National Space Club, Washington, D.C. 846,475, pub. 1–2–68. Cl. 107.
Natural Sales Co.: *See*—
General Nutrition Corp.
Naylor, H. W. Co.: *See*—
Naylor, Howard W.
Naylor, H. W., Co., Inc.: *See*—
Naylor, Howard W.
Naylor, Howard W., d.b.a. H. W. Naylor Co., to H. W. Naylor Co., Inc., Morris, N.Y. 500,048, ren. 3–19–68. Cl. 18.
Nelson, Sterling H. & Sons, Inc., d.b.a. Murray Elevators and Silver Cup Fish Feeds, Salt Lake City, Utah. 846,378, pub. 1–2–68. Cl. 46.
New London Mills, Inc., New London, Conn. 846,165, pub. 1–2–68. Multiple Class (Classes 20 and 42).
New Yorker Magazine, Inc., The, New York, N.Y. 439 818, ren. 3–19–68. Cl. 38.
Niemi, William F., Co., d.b.a. Eddie Bauer, Seattle, Wash. 846,314, pub. 1–2–68. Cl. 39.
Novo Industrial Corp., New York, N.Y. 727,016, canc. Cl. 32.
Noxell Corp., Baltimore, Md. 846,406, pub. 1–2–68. Cl. 51.
Nunes Bros. of California, Inc., Salinas, Calif. 846,385, pub. 1–2–68. Cl. 46.
O.K. Tool Co., Inc., The, Milford, N.H. 846,205, pub. 1–2–68. Cl. 23.
Oceanic Equipment Corp., Miami, Fla. 846,193, pub. 1–2–68. Cl. 22.
Oil Well Supply Co., to United States Steel Corp., Pittsburgh, Pa. 144,139, ren. 3–19–68. Cl. 23.
Oneida Ltd., Oneida, N.Y. 437,281–3, ren. 3–19–68. Cl. 28.
Oneida Ltd., Oneida, N.Y. 846,242, pub. 1–2–68. Cl. 28.
O'Neil, John A., d.b.a. Johnny O'Neil Bait Co., Akron, Ohio. 726,939, canc. Cl. 22.
O'Neil, Johnny, Bait Co.: *See*—
O'Neil, John A.
Ortho Pharmaceutical Corp., Raritan, N.J. 846,288, pub. 1–2–68. Cl. 38.
Palisades Pageants, Inc., Palisade, N.J. 846,438, pub. 1–2–68. Cl. 101.
Palmer, Mona, d.b.a. Palmer Publications, New York, N.Y. 846,292, pub. 1–2–68. Cl. 38.
Palmer Publications: *See*—
Palmer, Mona.
Paramount Knitting Co., to Bear Brand Hosiery Co., Chicago, Ill. 69,087, ren. 3–19–68. Cl. 39.
Parke, Davis & Co., Detroit, Mich. 846,157, pub. 1–2–68. Cl. 18.
Pennsalt Chemicals Corp., Philadelphia, Pa. 846,423, pub. 1–2–68. Cl. 52.
Pet Inc.: *See*—
Whitman, Stephen F., & Son, Inc.
Peterson, H. A., Feed & Seed, Inc., Drayton, N. Dak. 846,080, pub. 1–2–68. Cl. 1.
Pezziol, G. B., S.p.A., Milan, Italy. 846,485. Cl. 47.
Pharmacie Nationale Inc., Lewiston, Maine. 846,151, pub. 1–2–68. Cl. 18.
Philadelphia Steel & Wire Corp., Philadelphia, Pa. 726,891, canc. Cl. 13.
Phillft Equipment Sales Co., Inc., San Francisco, Calif. 846,209, pub. 1–2–68. Cl. 23.
Philtex Mfg. Co., Philadelphia, Pa. 846,320, pub. 1–2–68. Cl. 39.
Piazza, L., Wholesale Florists, Inc., Oakland, Calif. 846,084–5, pub. 1–2–68. Cl. 1.
Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. 846,383, pub. 1–2–68. Cl. 46.
Plant Protection Ltd., Yalding, Kent, England. 726,871, canc. Cl. 6.
Plastics, Inc., St. Paul, Minn. 846,093, pub. 1–2–68. Cl. 2.
Platoff, Raphael P., d.b.a. H3 Products Co., Studio City, Calif. 726,899, canc. Cl. 18.
Plyworld, Inc., Pascagoula, Miss. 846,446, pub. 1–2–68. Cl. 101.
Poor & Co., Chicago, Ill. 846,116, pub. 1–2–68. Cl. 13.
Pratt & Whitney Inc., West Hartford, Conn. 846,201, pub. 1–2–68. Cl. 23.
Professional Bowlers Association of America, Akron, Ohio. 846,434, pub. 1–2–68. Cl. 100.
Professional Portrait Service, Inc., Minneapolis, Minn. 846,468, pub. 1–2–68. Cl. 106.
Publ, John, Products Co., The, Chicago, Ill., to Purex Corp., Ltd., Lakewood, Calif. 500,741, ren. 3–19–68. Cl. 6.
Purepac Corp., Elizabeth, N.J. 435,111, ren. 3–19–68. Cl. 18.
Purex Corp., Ltd.: *See*—
D.D.D. Corp.
Publ, John, Products Co., The.
Quaker City Chocolate & Confectionery Co., Philadelphia, Pa. 243,197, ren. 3–19–68. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 67,485, ren. 3–19–68. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 846,390, pub. 1–2–68. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 846,392–3, pub. 1–2–68. Cl. 46.
Quickie Mfg. Corp., Philadelphia, Pa. 846,244, pub. 1–2–68. Cl. 29.
R.K.S. Co., Los Angeles, Calif. 846,456, pub. 1–2–68. Cl. 103.
R-W Service System, Inc., Dearborn, Mich. 846,467, pub. 1–2–68. Cl. 105.
Radio Rentaset Products Ltd., Wembley, Middlesex, England. 846,171–2, pub. 1–2–68. Cl. 21.
Ramsey Laboratories, Inc., Cleveland, Ohio. 846,375, pub. 1–2–68. Cl. 46.
Randolph Mfg. Co., Inc., Randolph, Mass. 846,310, pub. 1–2–68. Cl. 39.
Rap Industries, Inc., from The Rap-In-Wax Co., Minneapolis, Minn. 727,036, canc. Cl. 37.
Rapid-American Corp.: *See*—
Cohen, Joseph H. & Sons, Inc.
Rap-In-Wax Co., The: *See*—
Rap Industries, Inc.
Rauseo, Michael J., d.b.a. Management Research Associates, Arlington, Va. 846,470. pub. 1–2–68. Cl. 107.
Raybestos-Manhattan, Inc.: *See*—
Charleston Metallic Packing Co.
Raybestos-Manhattan, Inc., Passaic, N.J. 438,541, ren. 3–19–68. Cl. 35.
Raybestos-Manhattan, Inc., Passaic, N.J. 500,396, ren. 3–19–68. Cl. 35.
Redken Laboratories, Inc., Van Nuys, Calif. 846,418, pub. 1–2–68. Cl. 51.
Resiflex Laboratory, Los Angeles, Calif. 846,344, pub. 1–2–68. Cl. 44.
Revlon, Inc., New York, N.Y. 846,482. Cl. 29.
Revlon, Inc., New York, N.Y. 846,487–92. Cl. 51.
Rexall Drug & Chemical Co., d.b.a. Vanda Cosmetics Co., Los Angeles, Calif. 846,412–15, pub. 1–2–68. Cl. 51.
Rhythm Productions: *See*—
White, Ruth S.
Rich, Louis, Foods, Inc., West Liberty, Iowa. 846,387, pub. 1–2–68. Cl. 46.
Richardson Co., The, Melrose Park, Ill. 846,081, pub. 1–2–68. Cl. 1.

Richardson-Merrell Inc.: *See*—
Vick Chemical Co.
Riegel Textile Corp.: *See*—
Ware Shoals Mfg. Co.
Riker Laboratories, Inc., Northridge, Calif. 726,901, canc. Cl. 18.
Ringoot, M. L., d.b.a. Select Foods Co., Riverside, Calif. 846,368, pub. 1–2–68. Cl. 46.
River Town Clothing Co.: *See*—
Jorgensen, Roger L.
Rixson Inc., Frank in Park, Ill. 846,114, pub. 1–2–68. Multiple Class (Classes 13, 21, and 26).
Rob Roy Co., Inc., New York, N.Y. 846,322, pub. 1–2–68. Cl. 39.
Roback, Ida., d.b.a. Superior Cloak & Suit Manufacturers, to Martin Roback, d.b.a. Gaylife of Calif., Oakland, Calif. 436,506, ren. 3–19–68. Cl. 39.
Roback, Martin: *See*—
Roback, Ida.
Robins, A. H., Co., Inc., Richmond, Va. 846,152, pub. 1–2–68. Cl. 18.
Roehr Products Co., Inc.: *See*—
Becton, Dickinson & Co.
Rohm & Haas Co., Philadelphia, Pa. 237,407, ren. 3–19–68. Cl. 6.
Ronan & Kunzl, Inc., Marshall, Mich. 846,113, pub. 1–2–68. Multiple Class (Classes 13 and 22).
Rosner, A., & Sons Ltd., London, England. 434,305, ren. 3–19–68. Cl. 39.
Roussel-UCLAF, Paris, France. 846,149, pub. 1–2–68. Cl. 18.
Royal Typewriter Co., Inc.: *See*—
Litton Business Systems, Inc.
Rosinsky's Inc., Hartford, Conn. 846,445, pub. 1–2–68. Cl. 101.
Rutherford Laboratories, Inc., Hackensack, N.J. 846,141, pub. 1–2–68. Cl. 18.
Sanchez & Haya Co., Tampa, Fla., to General Cigar Co., Inc., New York, N.Y. 238,627, ren. 3–19–68. Cl. 17.
Sani-Wax Co., Dallas, Tex. 846,096, pub. 1–2–68. Cl. 4.
Sanna Dairies, Inc., Madison, Wis. 727,083, canc. Cl. 46.
Sawyer Associates, Inc., Chelmsford, Mass. 846,183, pub. 1–2–68. Cl. 21.
Scheele, Wm., & Sons Co., Inc., Fort Wayne, Ind. 846,347, pub. 1–2–68. Cl. 45.
Schering Corp., Bloomfield, N.J. 846,156, pub. 1–2–68. Cl. 18.
Schonbrunn, S. A., & Co., Inc., Palisades Park, N.J. 846,381, 1–2–68. Cl. 46.
Scientific Anglers, assor. by mesne assignments, to Sun Chemical Corp., New York, N.Y., a corporation of Delaware, Midland, Mich., to Sun Chemical Corp., New York, N.Y. 435,963, ren. 3–19–68. Cl 6.
Scott Paper Co., Delaware County, Pa. 846,276, pub. 11–14–67. Cl. 37.
Seagram, Joseph E., & Sons, Inc., New York, N.Y. 846,399, pub. 1–2–68. Cl. 49.
Sealy, Inc., Chicago, Ill. 435,867, ren. 3–19–68. Cl. 32.
Sears, Roebuck & Co., Chicago, Ill. 726,923–4, canc. Cl. 21.
Sears, Roebuck and Co., Chicago, Ill. 727,062–4, canc. Cl. 42.
Select Foods Co.: *See*—
Ringoot, M. L.
Senack Shoes, Inc.: *See*—
Consolidated Retail Stores, Inc.
Seneca Tackle Co., Inc., New York, N.Y. 846,188, pub. 1–2–68. Cl. 22.
Serbin, Inc., Miami, Fla. 846,311, pub. 1–2–68. Cl. 39.
Shakespeare Co., Kalamazoo, Mich. 846,194, pub. 1–2–68. Cl. 22.
Sharp, Edward, & Sons Ltd., Kent, England. 846,348, pub. 2–23–65. Cl. 46.
Shaw, Elizabeth, Ltd., London, England. 846,363, pub. 1–2–68. Cl. 46.
Sheard, Geo., & Co. (1964) Ltd., Coaticook, Quebec, Canada. 846,400, pub. 1–2–68. Cl. 50.
Sheffield Farms-Slawson-Decker Co., to National Dairy Products Corp., New York, N.Y. 67,165, ren. 3–19–68. Cl. 46.
Sheffield Watch, Inc.: *See*—
Sheffield Watch of New York, Inc.
Sheffield Watch of New York, Inc., from Sheffield Watch, Inc., New York, N.Y. 846,240, pub. 9–26–67. Cl. 27.
Shell Chemical Co.: *See*—
Shell Oil Co.
Shell Oil Co., d.b.a. Shell Chemical Co., New York, N.Y. 727,074, canc. Cl. 46.
Shenango Ceramics, Inc., New Castle, Pa. 846,247, pub. 1–2–68. Cl. 30.
Shepherd Casters, Inc., Benton Harbor, Mich. 846,117–18, pub. 1–2–68. Cl. 13.
Sherman Underwear Mills, Inc., New York, N.Y. 846,300, pub. 1–2–68. Cl. 39.
Shulton, Inc., Clifton, N.J. 846,419, pub. 1–2–68. Cl. 51.
Siart Originals, Inc., New York, N.Y. 727,052, canc. Cl. 39.
Sico Inc., Minneapolis, Minn. 846,251, pub. 1–2–68. Cl. 32.
Silver Cup Fish Feeds: *See*—
Nelson, Sterling H., & Sons, Inc.
Simplot, J. R., Co., Boise, Idaho. 846,389, pub. 1–2–68. Cl. 46.
Sims Saddle & Leather Co., Inc., Chattanooga, Tenn. 846,094, pub. 1–2–68. Cl. 3.
Sinclair, Donald C., d.b.a. Westfield Air-Motive, Westfield, Mass. 846,279, pub. 1–2–68. Cl. 37.
Singer, Irving D., Chicago, Ill. 846,309, pub. 5–30–67. Cl. 39.
Skyway Products, Inc., Brooklyn, N.Y. 846,195, pub. 1–2–68. Cl. 22.
Smidth, F. L., & Co., New York, N.Y. 846,210, pub. 1–2–68. Cl. 23.
Smith Welding Equipment Corp., to Tescom Corp., Minneapolis, Minn. 240,926–7, ren. 3–19–68. Cl. 34.
Societe Civile de Recherches et d'Etudes Industrielles, Dieppe, France. 846,253–4, pub. 1–2–68. Cl. 32.
Sondra Mfg. Co., Inc., New York, N.Y. 846,303, pub. 1–2–68. Cl. 39.
Sony Corp., Shinagawa-ku, Tokyo, Japan. 846,227, pub. 1–2–68. Cl. 26.
Spaugh Mfg. Inc., Elkhart, Ind. 726,912, canc. Cl. 19.
Speaker, J. W., Corp., Milwaukee, Wis. 500,947, ren. 3–19–68. Cl. 6.
Speed Check Co., Inc., The, Atlanta, Ga. 846,250, pub. 10–17–67. Cl. 32.
Spiratone, Inc., Flushing, N.Y. 846,222–3, pub. 1–2–68. Cl. 26.
Sprinter-Pack Aktiebolag, Laholmsvagen, Halmstad, Sweden. 846,091, pub. 1–2–68. Cl. 2.
Standard-Coosa-Thatcher Co., Chattanooga, Tenn. 500,826, ren. 3–19–68. Cl. 45.
Standard Scientific Supply Corp., New York, N.Y. 726,859, canc. Cl. 2.
Stanley, Lynne, Originals, Inc., New York, N.Y. 846,305, pub. 1–2–68. Cl. 39.
Stauffer Chemical Co., New York, N.Y. 846,339, pub. 1–2–68. Cl. 42.
Stevens, J. P., & Co. Inc., New York, N.Y. 846,337, pub. 1–2–68. Cl. 42.
Stiefel Laboratories, Inc., Oak Hill, N.Y. 846,422, pub. 1–2–68. Cl. 52.
Stonetree Chemical Corp., Chicago, Ill. 846,132, pub. 1–2–68. Cl. 16.
Strato-Valet Service, Inc., Nashville, Tenn. 846,330, pub. 1–2–68. Cl. 39.
Street & Smith Publications, Inc., New York, N.Y. 727,118, canc. Cl. A.
Stromberg-Carlson Corp., Rochester, N.Y. 846,176, pub. 1–2–68. Cl. 21.
Summers, Charles G., Jr., Inc, New Freedom, Pa. 434,211, ren. 3–19–68. Cl. 46.
Sun Chemical Corp.: *See*—
Scientific Anglers.
Sun Chemical Corp., New York, N.Y. 846,107, pub. 1–2–68. Cl. 11.
Sun Oil Co., Philadelphia, Pa. 436,018, ren. 3–19–68. Cl. 15.
Sunbeam Corp., Chicago, Ill. 846,184–5, pub. 1–2–68. Cl. 21.
Sunbeam Corp., Chicago, Ill. 846,238, pub. 5–16–67. Cl. 27.
Sunday School House, The, Glendale, Calif. 727,043, canc. Cl. 38.
Superior Cloak & Suit Manufacturers: *See*—
Roback, Ida.
Superior's Brand Meats Inc., Massillion, Ohio. 846,351, pub. 3–8–66. Cl. 46.
Surf-Ball, Inc., Clarendon Hills, Ill. 846,191, pub. 1–2–68. Cl. 22.
Sutone Corp., Los Angeles, Calif. 726,915, canc. Cl. 19.
Suzanna's Kitchen Inc., Doraville, Ga. 846,366, pub. 1–2–68. Cl. 46.
Swingline Inc., Long Island City, N.Y. 846,129, pub. 1–2–68. Cl. 15.
Swiss Colony, Inc., The, Monroe, Wis. 846,388, pub. 1–2–68. Cl. 46.
Sykes Laboratory: *See*—
Sykes, Thelma.
Sykes, Thelma, d.b.a. Sykes Laboratory, Homestead, Fla. 846,493. Cl. 51.
Synanon Foundation, Inc., Santa Monica, Calif. 846,436–7, pub. 1–2–68. Cl. 100.
Synanon Foundation, Inc., Santa Monica, Calif. 846,461–2, pub. 1–2–68. Cl. 103.
Szekely, Edmond B., d.b.a. Edmond S. Bordeaux, San Diego, Calif. 846,478. Cl. 13.
TV Time Foods, Inc., Chicago, Ill. 846,369, pub. 1–2–68. Cl. 46.
Taco Bell, Torrance, Calif. 846,432, pub. 1–2–68. Cl. 100.
Tambour, Inc., Dallas, Tex. 846,308, pub. 1–2–68. Cl. 39.
Tapco Products Co., Inc., Detroit, Mich. 846,213, pub. 1–2–68. Cl. 23.
Taylor, Wes, Cupertino, Calif. 846,174, pub. 1–2–68. Cl. 21.
Teledyne, Inc., d.b.a. Teledyne Systems Co., Micronetics Division, San Diego, Calif. 846 228, pub. 1–2–68. Cl. 26.
Teledyne Systems Co., Micronetics Division: *See*—
Teledyne, Inc.
Tension Envelope Corp., New York, N.Y. 727,029, canc. Cl. 37.
Tescom Corp.: *See*—
Smith Welding Equipment Corp.
Tessco, Inc., d.b.a. Bud Type Cleaner Co., Timonium, Md. 846,427, 1–2–68. Cl. 52.
Texaco Inc., New York, N.Y. 846,127, pub. 6–6–67. Cl. 15.
Texaco Inc., New York, N.Y. 846,249, pub. 1–2–68. Cl. 31.
Texaco Inc., New York, N.Y. 846,249, pub. 1–2–68. Cl. 21.
Thomas Industries Inc., Louisville, Ky. 846,169, pub. 1–2–68. Cl. 21.
Tiffany & Co., New York, N.Y. 846,241, 1–2–68. Cl. 27.
Tilden, S. G., Inc., Garden City, N.Y. 846,455, pub. 1–2–68. Cl. 103.
Tootsie Roll Industries, Inc., Hoboken, N.J. 846,376, pub. 1–2–68. Cl. 46.
Tornado-France, Paris, France. 727,012, canc. Cl. 29.
Towmotor Corp., Cleveland, Ohio. 846,203, pub. 1–2–68. Cl. 23.
Towne, Paulsen & Co., Inc., Monrovia, Calif. 846,155, pub. 1–2–68. Cl. 18.
Trade Winds Campers, Inc.: *See*—
Trade Winds Co., Inc.
Trade Winds Co., Inc., from Trade Winds Campers, Inc., Manawa, Wis. 846,164, pub. 1–2–68. Cl. 19.
Traid Corp., Encino, Calif. 726,999, canc. Cl. 26.

Transistor Sound Laboratory Inc., Corona, N.Y. 727,022, canc. Cl. 36.
Transpace, Inc., San Fernando, Calif. 726,920, canc. Cl. 21.
Tru-Bloc & Chem-Stress Decorative-Structural-Concrete Products Research and Development Laboratory, San Diego, Calif. 726,878–9, canc. Cl. 12.
Tyer Rubber Corp.: *See*—
Hodgman Rubber Co.
U.F.O.'s: *See*—
Fontana, Joseph, Jr.
Ulay Export Corp., Miami, Fla. 846,410, pub. 1–2–68. Cl. 51.
Uncle Ben's, Inc.: *See*—
Converted Rice, Inc.
Underwood, John L., Co., Inc., Atlanta, Ga. 846,258, pub. 1–2–68. Cl. 34.
Union Camp Corp.: *See*—
Write Right Mfg. Co.
Union Carbide Corp.: *See*—
Linde Air Products Co., The.
United Merchants and Manufacturers, Inc., New York, N.Y. 727,061, canc. Cl. 42.
United Merchants & Manufacturers, Inc., New York, N.Y. 846,335–6, pub. 1–2–68. Cl. 42.
United States Borax & Chemical Corp., Los Angeles, Calif. 846,104, pub. 1–2–68. Multiple Class (Classes 6 and 10).
United States Rubber Co., New York, N.Y. 846,079, pub. 1–2–68. Cl. 1.
United States Steel Corp.: *See*—
Oil Well Supply Co.
Universal Controls, Inc., New York, N.Y. 726,969, canc. Cl. 26.
Universal OEM Products Inc., St. Louis, Mo. 846,179, pub. 1–2–68. Cl. 21.
University Microfilms, Inc.: *See*—
Xerox Corp.
Univis, Inc., Fort Lauderdale, Fla. 846,216, pub. 9–12–61. Cl. 26.
Vanda Cosmetics Co.: *See*—
Rexall Drug & Chemical Co.
Vesta Foods, Inc.: *See*—
Vesta, Inc.
Vesta, Inc., from Vesta Foods Inc., New York, N.Y. 727,072, canc. Cl. 46.
Veterinary Research Institute, from Veterinary Supply Depot Inc., Dallas, Tex. 846,154, pub. 1–2–68. Cl. 18.
Veterinary Supply Depot Inc.: *See*—
Veterinary Research Institute.
Vick Chemical Co., Philadelphia, Pa., to Richardson-Merrell Inc., New York, N.Y. 241,961, ren. 3–19–68. Cl. 18.
Viobin Corp., Monticello, Ill. 846,153, pub. 1–2–68. Cl. 18.
Vistron Corp., Cleveland, Ohio. 846,087, pub. 1–2–68. Cl. 1.
Vitricon Inc., Woodside, N.Y. 846,138, pub. 1–2–68. Cl. 16.
Vocational Industrial Clubs of America, Inc., Washington, D.C. 846,176, pub. 1–2–68. Cl. 200.
Voss Engineering Co., Callery, Pa. 846,207, pub. 1–2–68. Cl. 23.
Vy Lactos Laboratories, Inc., Des Moines, Iowa. 846,148, pub. 1–2–68. Cl. 18.
Wagner Electric Corp., St. Louis, Mo. 726,926, canc. Cl. 21.
Walsh, A. E., & Partners Ltd., London, England. 727,122. canc. Cl. 38.
Walterisation Co., Ltd., The, Croydon, Surrey, England. 846,103, pub. 1–2–68. Cl. 6.
Ware Shoals Mfg. Co., Ware Shoals, S.C., to Riegel Textile Corp., New York, N.Y. 240,780, ren. 3–19–68. Cl. 42.
Webb & Lipow, Los Angeles, Calif. 846,458, pub. 1–2–68. Cl. 103.
Well Completions, Inc., Denver, Colo. 846,099, pub. 1–2–68. Cl. 6.
Wellcome, Henry S., London, England, to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. 67,607, ren. 3–19–68. Cl. 18.
Wells Lamont Corp., Chicago, Ill. 846,321, pub. 1–2–68. Cl. 39.
Wells Lamont Corp., Chicago, Ill. 846,323, pub. 1–2–68. Cl. 39.
West Garment Co., Inc., San Antonio, Tex. 846,312, pub. 1–2–68. Cl. 39.
Western Union Telegraph Co., The, New York, N.Y. 846,463, pub. 1–2–68. Cl. 104.
Westfield Airmotive: *See*—
Sinclair, Donald C.
Wexler, David, & Co., Chicago, Ill. 434,001, ren. 3–19–68. Cl. 36.
White, Ruth S., d.b.a. Rhythms Productions, Los Angeles, Calif. 846,270, pub. 1–2–68. Cl. 36.
Whitman, Stephen F., & Son, Inc., Philadelphia, Pa., to Pet Inc., St. Louis, Mo. 242,245, ren. 3–19–68. Cl. 46.
Williams, B. E., La Grange Park, Ill. 846,101, pub. 1–2–68. Cl. 6.
Wilson & Co., Inc., from Wilson & Co., Inc., Chicago, Ill. 846,484. Cl. 46.
Windbreaker, Inc., Danville, Ill. 846,317, pub. 1–2–68. Cl. 39.
Wisconsin Gasket & Mfg. Co., Milwaukee, Wis. 846,266, pub. 1–2–68. Cl. 35.
Wiseman, Eugene A., d.b.a. Wiseman Ranch Service, Walnut Grove, Calif. 846,105, pub. 1–2–68. Cl. 6.
Wiseman Ranch Service: *See*—
Wiseman, Eugene A.
Witt, Basil F., Jr., d.b.a. Witts Auto Painting, Canon City, Colo. 846,137, pub. 1–2–68. Cl. 16.
Witts Auto Painting: *See*—
Witt, Basil F., Jr.
Wolf & Vine, Inc., Los Angeles, Calif. 846,402–4, pub. 1–2–68. Cl. 50.
Wolfe, Ernest E., Jr., d.b.a. Wolfe Travel Service, Los Angeles, Calif. 846,464, pub. 1–2–68. Cl. 105.
Wolfe Travel Service: *See*—
Wolfe, Ernest E., Jr.
Wolverine World Wide, Inc., Rockford, Mich. 846,224, pub. 1–2–68. Cl. 26.
Wood Conversion Co., to Conwed Corp., St. Paul, Minn. 500,283, ren. 3–19–68. Cl. 12.
Wood Industries, Inc.: *See*—
Wood Newspaper Machinery Corp.
Wood Newspaper Machinery Corp., New York, N.Y., to Wood Industries, Inc., Plainfield, N.J. 240,675, ren. 3–19–68. Cl. 23.
Wrather Corp., Beverly Hills, Calif. 846,472, pub. 1–2–68. Cl. 107.
Wright, Barry, Corp., Watertown, from Mathatronics, Inc., Waltham, Mass. 846,218 pub. 1–2–68. Cl. 26.
Wrigley, Wm., Jr., Co., Ltd., Toronto, Ontario, Canada. 727,075, canc. Cl. 46.
Write Right Mfg. Co., Atlanta, Ga., to Union Camp Corp., New York, N.Y. 436,611, ren. 3–19–68. Cl. 37.
Wyeth, John, & Bro. Inc., Philadelphia, Pa., to American Home Products Corp., New York, N.Y. 68,110, ren. 3–19–68. Cl. 18.
Wyner, I. A., & Co., Inc., New York, N.Y. 727,057–8, canc. Cl. 42.
Xerox Corp., Rochester, N.Y., from University Microfilms, Inc., Ann Arbor, Mich. 846,283, pub. 1–2–68. Cl. 38.
Young, Leo, d.b.a. Leo Young & Co., Freeport, N.Y. 846,373, pub. 1–2–68. Cl. 46.
Young, Leo, & Co.: *See*—
Young, Leo.

U.S. GOVERNMENT PRINTING OFFICE 0—1968

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

March 26, 1968 Volume 848 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of February 1968

Examiner affirmed	147
Examiner affirmed in part	20
Examiner reversed	44
Total	211

Foreign Patents Received in the Scientific Library as of February 29, 1968

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Feb. 13, 1968	29,351/67
(*Patents*)	Feb. 5, 1968	276,877
Austria	Feb. 6, 1968	258,550
Belgium	Jan. 4, 1968	672,000
Canada	Feb. 26, 1968	778,985
Czechoslovakia	Feb. 12, 1968	123,200
Denmark	Nov. 15, 1967	108,185
East Germany	Feb. 26, 1968	60,007
Egypt	June 28, 1967	6,873
Finland	Dec. 4, 1967	36,456
France:		
(*Patents*)	Feb. 29, 1968	1,500,700
(*Additions*)	Feb. 8, 1968	90,100
(*Medicaments*)	Feb. 29, 1968	4,850 M
(*Additions*)	May 24, 1967	112 CAM
Germany:		
(*Auslegeschriften*)	Feb. 2, 1968	1,256,590
(*Patents*)	Nov. 8, 1967	1,235,193
Great Britain	Feb. 26, 1968	1,101,900
India	Aug. 17, 1967	100,376
Ireland	Feb. 29, 1968	26,959
Italy	Aug. 30, 1967	660,000
Japan	Feb. 26, 1968	2,280/68
Netherlands:		
(*Octrooiaanvragen*)	Nov. 8, 1967	10,414/67
(*Patents*)	Feb. 29, 1968	123,617
Norway	Jan. 26, 1968	112,140
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Feb. 16, 1968	54,314
Rumania	Dec. 21, 1967	48,496
Sweden	Jan. 23, 1968	216,927
Switzerland	Feb. 12, 1968	441,956
U.S.S.R.	Feb. 1, 1968	201,981

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1[illegible]52 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: First received 10,000/1929
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,916,486, J. C. Babcock, J. A. Campbell and J. A. Hogg, 6-FLUORO STEROIDS AND INTERMEDIATES THEREFOR, decided Nov. 29, 1967. Interference No. 95,452, claims 1, 2, 3, 4, 5, 6, 8, 10, 11 and 13.

Patent No. 3,039,993, L. Friedman, POLYETHYLENE STABILIZERS, decided Nov. 13, 1967, Interference No. 95,216, claim 1.

Patent No. 3,140,305, J. G. Lowenstein, PREPARATION OF DIISOCYANATES, decided Jan. 23, 1968, Interference No. 95,201, claim 2.

Patent No. 3,146,486, H. J. Gerber, STEPPING MOTOR DRIVE, decided Jan. 26, 1968, Interference No. 95,342, claims 1, 2, 3, 4, 6 and 9.

Patent No. 3,155,478, W. D. O'Brien, ADJUSTMENT OF SEALED REED CONTACTS, decided Jan. 25, 1968, Interference No. 95,974, claims 1, 2, 4, 5, 6, 7, 8 and 9.

Patent No. 3,188,758, B. A. Denton, LIQUID SPRAY IRON, decided Feb. 7, 1968, Interference No. 95,728, claims 1, 2, 3, 4, 5, 6 and 8.

Patent No. 3,200,901, M. T. Hassechus, LOUD-SPEAKER, decided Jan. 23, 1968, Interference No. 95,722, claims 1, 2 and 3.

Patent No. 3,201,520, J. Bereznak, ELECTRONIC SWITCHING MATRIX, decided Feb. 2, 1968, Interference No. 95,601, claims 1 and 3.

Patent No. 3,225,264, I. F. Weiss, WIRE WAY FOR ELECTRICAL CONTROL PANEL, decided Jan. 25, 1968, Interference No. 95,622, claims 4 and 7.

Patent No. 3,230,215, T. Komeno, 2,3-EPITHIO-STEROIDS AND PRODUCTION THEREOF, decided Jan. 3, 1968, Interference No. 95,555, claims 12, 13, 14, 16 and 17.

Patent No. 3,234,924, M. G. May, PROCESS AND APPARATUS FOR REDUCING THE AMOUNT OF INCOMPLETELY BURNED PRODUCTS OF COMBUSTION IN THE EXHAUST GASES OF INTERNAL COMBUSTION ENGINES, decided Jan. 12, 1968, Interference No. 96,014, claim 11.

Patent No. 3,241,124, V. L. Newhouse, RANKING MATRIX, decided Jan. 12, 1968, Interference No. 96,009, claims 1 and 2.

Patent No. 3,244,965, F. W. Gutzwiller, PHASE CONTROLLED ALTERNATING CURRENT CIRCUITS, decided Jan. 19, 1968, Interference No. 94,817, claims 1, 2 and 3.

Patent No. 3,275,090, C. Weiland, METHOD AND APPARATUS FOR INCREASING THE EFFECTIVENESS OF AIR CUSHION VEHICLES, decided Jan. 23, 1968, Interference No. [illegible]5,996, claim 13.

New Applications Received During February 1968

Patents	7342
Designs	406
Plant Patents	10
Reissues	20
Total	7778

Issue—March 26, 1968

Patents	1042—No. 3,[illegible]74,487 to No. 3,375,[illegible]8, incl.
Designs	81—No. 210,567 to No. 210,[illegible]47, incl.
Total	1123

Disclaimers and Dedications

2,990,774.—*Lester W. Toelke*, Houston, Tex. RETRIEVABLE CARRIER FOR A SHAPED CHARGE PERFORATOR. Patent dated July 4, 1961. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,013,491.—*Thomas C. Poulter*, Palo Alto, Calif. MULTIPLE-JET SHAPED EXPLOSIVE CHARGE PERFORATING DEVICE. Patent dated Dec. 19, 1961. Disclaimer and dedication filed Nov. 14, 1967, by the assignees, *Borg-Warner Corporation* and *Halliburton Company*.

Hereby disclaim and dedicate to the Public the terminal portion of the term of the patent subsequent to Dec. 21, 1966.

3,021,784.—*Lorrain D. Meddick*, Whittier, Calif. SHAPED CHARGE UNIT FOR WELL PERFORATORS. Patent dated Feb. 20, 1962. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,027,838.—*Lorrain D. Meddick*, Whittier, Calif. SHAPED CHARGE. Patent dated Apr. 3, 1962. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Borg-Warner Corporation*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,075,462.—*Bliss Adamson, Jr.*, Houston, Tex. COMBINATION PROJECTILE AND SHAPED CHARGE WELL PERFORATING APPARATUS. Patent dated Jan. 29, 1963. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,077,834.—*Blake M. Caldwell*, Fort Worth, Tex. LINED SHAPED EXPLOSIVE CHARGE AND LINER THEREFOR. Patent dated Feb. 19, 1963. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Jet Research Center, Inc.*

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,100,445.—*Thomas C. Poulter*, Palo Alto, Calif. SHAPED CHARGE AND METHOD OF FIRING THE SAME. Patent dated Aug. 13, 1963. Disclaimer and dedication filed Nov. 14, 1967, by the assignees, *Borg-Warner Corporation* and *Halliburton Company*.

Hereby disclaim and dedicate to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,107,611.—*Blake M. Caldwell* and *Harrold D. Owen*, Fort Worth, Tex. WELL PERFORATING ASSEMBLY. Patent dated Oct. 22, 1963. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,107,612.—*Blake M. Caldwell* and *Harrold D. Owen*, Fort Worth, Tex. WELL PERFORATING ASSEMBLY. Patent dated Oct. 22, 1963. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

3,116,689.—*Cyril R. Sumner*, Fort Worth, Tex. WELL PERFORATING APPARATUS AND SWITCH. Patent dated Jan. 7, 1964. Disclaimer and dedication filed Nov. 14, 1967, by the assignee, *Halliburton Company*.

Hereby disclaims and dedicates to the Public the terminal portion of the term of the patent subsequent to Dec. 31, 1966.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JANUARY 15, 1968

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager	7-28-64	6-28-62
Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.		
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager	11-27-64	7-23-62
Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.		
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Manager	3-22-65	5-15-62
Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.		
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager	12-30-64	7-12-62
Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.		
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager	6- 1-64	9-26-62
Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.		
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager	5- 4-65	9-12-63
Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.		
SECURITY, GROUP 220—S. BOYD, Manager	2- 5-65	8-19-64
Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.		
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager	6-25-64	6- 1-62
Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.		
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager	9- 2-64	3-14-62
Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.		
PHYSICS, GROUP 280—R. L. EVANS, Manager	4-14-65	6-24-63
Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.		
DESIGNS, GROUP 290—S. BOYD, Manager	1- 9-67	11-15-67
Industrial Arts; Household, Personal and Fine Arts.		

Total number of pending applications (excluding Designs)	175,238
Total number of Design applications pending	3,722
Total number of applications awaiting action (excluding Designs)	124,993
Total number of Design applications awaiting action	1,562
Date of oldest new application awaiting action	June 1, 1964
Date of oldest amended application awaiting action	March 14, 1962

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during March 1968, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1968*.

Patents ..... Numbers 2,543,744 to 2,546,957, inclusive

Plant Patents ..... Numbers 1,007 to 1,009, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	10- 3-66	11-23-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks.	4- 1-66	3-27-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	8- 6-65	5-14-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	8- 8-66	4-26-65
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-11-66	1-16-64
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	10-23-65	4-19-63

DECISIONS IN PATENT AND TRADEMARK CASES

In the United States Patent Office Before the Board of Appeals

EX PARTE ALEXANDER D. ARGOUDELIS, CLARENCE DE BOER, THOMAS E. EBLE, AND ROSS R. HERR

Appeal No. 717—71. Decided December 11, 1967

1. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE—DEPOSIT OF CULTURE IN DEPOSITORY.

"The question in cases of this kind is not whether any particular deposit [of a culture] or type of deposit has or has not been made, but is the same fundamental question presented by the statute for all cases, of whether a person skilled in the art can reproduce the invention from the written description at the time the application is filed. The person skilled in the art is supposed to have before him whatever is known and available to such persons skilled in the art. There is no requirement in the statute or in any Patent Office rule or order for any deposit or any particular type of deposit. The practice has developed of depositing microorganisms in a stock culture collection prior to filing an application for patent. These culture collections are maintained by various types of organizations, including universities and some governmental organizations and exist in foreign countries as well as the United States. The objective in applicants making such deposits is to put themselves into a position where they would have evidence conveniently at hand to show that a person skilled in the art could reproduce the invention."

2. SAME—SAME—SAME—SAME.

"If an applicant can show that at the time of filing the application the organisms involved were known and available to persons skilled in the art then the question of sufficiency of disclosure of the type here involved would not arise. This is a question of fact, subject to proof by evidence. Applicants may have recourse to any competent evidence to show this fact with or without having made any deposit. Of course making a certain character of deposit in a stock culture collection prior to filing the application would greatly simplify the problem of proof."

3. SAME—SAME—SAME—SAME—35 U.S.C. 112.

"Apparently appellants seem to consider that they have made the substance deposited elsewhere a part of the disclosure of the application in this case as filed. There is no authority in 35 U.S.C. 112 for anything but a written description as the disclosure in an application for patent, and certainly there is no authority for either the Patent Office or an applicant to modify the requirements of the statute."

4. SAME—SAME—SAME—SAME—EX PARTE SCHMIDT-KASTNER AND HACKMANN OVERRULED.

"Appellants refer to *Ex parte Schmidt-Kastner and Hackmann*, 153 USPQ 473, published after the first two decisions in this case and apparently inconsistent therewith. This decision will not be followed and is over-ruled to the extent that it may have reference to a deposit [of a culture] not publicly available at the time the application is filed * * *."

5. PATENTABILITY—REFERENCE—ENABLING DISCLOSURE.

"Claims 4 through 8 stand rejected on the Anzai reference. This rejection was affirmed in the first two decisions [in a prior appeal on the case] but it is evident that the rejection was maintained in the case purely as cumulative. In the prior appeal appellants urged, among other matters, that the reference did not contain a sufficient description of the organism mentioned. In Appeal No 717–72, in a commonly assigned application, which was heard at the same time as the first hearing in the present appeal, the question involved was the utilization against the applicants of a disclosure in a foreign specification which contained such description of the organism and was otherwise similar to the disclosure in *Ex parte Kropp*. Counsel argued in the brief that such a disclosure is meaningless, 'just as meaningless as if a "philosopher's stone" were recited as usable to make' the antibiotic. In that case the rejection of the Examiner was reversed, predicated upon the insufficiency of the disclosure 'in

the absence of any evidence of what may have been known or available to the public on the date involved,' citing *Ex parte Kropp* and *In re LeGrice*, 49 CCPA 1124, 301 F.2d 929, 1962 CD 707, 785 OG 741, 133 USPQ 365. In view of this, therefore, we believe that the rejection on the Anzai publication should not be pressed and this rejection will not be affirmed."

APPEAL from the Examiner (Sam Rosen) of Group 120. Serial No. 147,873.*

AFFIRMED.

Eugene O. Retter, George T. Johannesen, and Roman Saliwanchik for appellants.

Before FEDERICO and ROSA, *Examiners-in-Chief* and STONE, *Acting Examiner-in-Chief*

FEDERICO, *Examiner-in-Chief*.

This is the second appeal in this application and involves all the claims in the case, 1 through 8 and 10 through 15. The first appeal involved claims 4 through 8 only, rejected by the Examiner on the Anzai publication, the other claims having been allowed by the Examiner. In the first decision the rejection on the reference was affirmed and a new ground of rejection was made. This new ground was based on the finding that the specification was insufficient. Appellants requested reconsideration of both grounds of rejection of the involved claims and the matter was gone into again in a second decision which maintained the position previously taken. The Examiner then reopened the case, entering a rejection on the basis of insufficient disclosure of the claims which stood allowed and repeating the rejections which had been affirmed by the Board. Following the reopening, appellants have appealed a second time, from the rejection of all the claims. The anomalous situation of claims 4 through 8 is ignored and as to these claims the present appeal is in effect a further reconsideration. After a hearing was held in the present appeal it was decided that a second hearing would be held before an augmented panel in view of the importance of the principal issue involved and the possibility that consideration thereof might involve disagreement with some other decision.

The entire case has been considered by the presently constituted panel of the Board of Appeals as a new decision on the issues. However, matters stated in the previous two decisions will not be repeated and these prior decisions are incorporated by reference and considered a part of the present decision except to the extent that changes are pointed out.

The issue of insufficient disclosure is of the same character as that involved in *Ex parte Kropp*, 143 USPQ 148. With the exception of the particular point raised by appellants, the specification of the present application is of substantially the same character as the specification involved in the *Kropp* case. Appellants acknowledge that such a specification does not comply with 35 U.S.C. 112.

Appellants have filed an affidavit by a microbiologist purporting to show that the invention can be reproduced by a person skilled in the art from the present specification. However, this affidavit confirms that the invention cannot be reproduced from the written description since it specifically refers to the fact that access to the microorganism used is necessary. It is obvious that, with the microorganism at hand, the invention can be reproduced.

* This decision is being appealed to the U.S. Court of Customs and Patent Appeals.

Appellants' position is that the fact of having made a particular type of deposit, which is referred to in the specification, relieves the disclosure of the deficiency and hence the rejection cannot be maintained.

[1] The question in cases of this kind is not whether any particular deposit or type of deposit has or has not been made, but is the same fundamental question presented by the statute for all cases, of whether a person skilled in the art can reproduce the invention from the written description at the time the application is filed. The person skilled in the art is supposed to have before him whatever is known and available to such persons skilled in the art. There is no requirement in the statute or in any Patent Office rule or order for any deposit or any particular type of deposit. The practice has developed of depositing microorganisms in a stock culture collection prior to filing an application for patent. These culture collections are maintained by various types of organizations, including universities and some governmental organizations and exist in foreign countries as well as the United States. The objective in applicants making such deposits is to put themselves into a position where they would have evidence conveniently at hand to show that a person skilled in the art could reproduce the invention. As stated in *Ex parte Kropp*, in holding that the specification there involved did not comply with 35 U.S.C. 112:

"If appellant were dealing with a known organism which had a well defined source and which had been obtained and used by others before, or even with an organism which was merely known and available to persons skilled in the art, the present question of the sufficiency of the disclosure would not arise."

[2] If an applicant can show that at the time of filing the application the organisms involved were known and available to persons skilled in the art then the question of sufficiency of disclosure of the type here involved would not arise. This is a question of fact, subject to proof by evidence. Applicants may have recourse to any competent evidence to show this fact with or without having made any deposit. Of course making a certain character of deposit in a stock culture collection prior to filing the application would greatly simplify the problem of proof. Attention may be called to a recent decision of a District Court: *Merck and Co., Inc.* v. *Chase Chemical Co. et al.*, 155 USPQ 139, (D.C., New Jersey, 1967). This suit involved a patent directed to vitamin B_{12} which was produced through the action of a microorganism. This was stated to be the strain of *Streptomyces griseus* which produced the antibiotic *grisein*. The specification was attacked in the suit as allegedly insufficient in accordance with the reasoning involved in *Ex parte Kropp*. The court apparently accepted the decision and after quoting the same passage quoted above, found that the patent was dealing with a known and available organism. There had been a deposit with the stock culture collection of Rutgers University where the microorganism was available and could be obtained by anyone for any purpose, prior to the filing of the application, and the identification of the particular strain had also been published, prior to the filing of the application. These findings were based upon uncontradicted testimony in the case. A second patent involved in the same suit related to the production of vitamin B_{12}-active compsitions. The court merely states that the testimony established that microbiologists following the teachings of the specification would be able to produce the particular compositions. The specification of the patent indicates that a strain of *Streptomyces griseus* producing the antibiotic *grisein* was used, and

also disclosed a number of known species of organisms with a description of how the strains utilized could be produced from them.

Appellants do not in fact show or attempt to show that at the time of filing the application the microorganism used was known and available to the public; it is clear from the record that the deposit was secret or confidential and was not available to anyone without appellants' permission. The statement in the specification referring to the deposit and stating that the organism could be obtained does not state and was not intended to mean that at the time of filing the application the organism could be obtained freely (meaning without appellants' permission or dispensation) by any one or any person skilled in the art.

[3] Apparently appellants seem to consider that they have made the substance deposited elsewhere a part of the disclosure of the application in this case as filed. There is no authority in 35 U.S.C. 112 for anything but a written description as the disclosure in an application for patent, and certainly there is no authority for either the Patent Office or an applicant to modify the requirements of the statute.

It is noted that the particular stock culture collection utilized by appellants is an agency in the Department of Agriculture. In response to a specific inquiry, appellants do not take the position that being a government agency is *per se* material, but that the particular (according to appellants) manner of making deposits in any suitable depository would be sufficient. To contend otherwise would involve considerable anomalies since such collections are maintained by various universities here and abroad and also by agencies of various foreign governments, and no distinction could be made.

[4] Appellants refer to *Ex parte Schmidt-Kastner and Hackmann*, 153 USPQ 473, published after the first two decisions in this case and apparently inconsistent therewith. This decision will not be followed and is over-ruled to the extent that it may have reference to a deposit not publicly available at the time the application is filed, nor do we agree with the analogy in this decision.

Appellants question the use of the word "agent" in the second decision. The word was used only figuratively and had reference to the statement by the depository that it would refrain from distributing the culture (until after a patent was issued) except "upon receipt of written authorization from your company." These depositories are not parts of the Patent Office nor agents of the Patent Office, nor are any of their contents parts of patent applications and could hardly be unilaterally made so by anyone without the consent of the statute.

[5] Claims 4 through 8 stand rejected on the Anzai reference. This rejection was affirmed in the first two decisions but it is evident that the rejection was maintained in the case purely as cumulative. In the prior appeal appellants urged, among other matters, that the reference did not contain a sufficient description of the organism mentioned. In Appeal No. 717—72, in a commonly assigned application, which was heard at the same time as the first hearing in the present appeal, the question involved was the utilization against the applicants of a disclosure in a foreign specification which contained such description of the organism and was otherwise similar to the disclosure in *Ex parte Kropp*. Counsel argued in the brief that such a disclosure is meaningless, "just as meaningless as if a 'philosopher's stone' were recited as usable to make" the antibiotic. In that case the rejection of the Examiner was reversed, predicated upon the insufficiency of the disclosure "in the absence of any evidence of what may have been known or available to the public on the date involved," citing *Ex parte Kropp* and *In re LeGrice*, 49 CCPA 1124, 301 F.2d 929, 1962 CD 707, 785 OG 741, 133 USPQ 365. In view of this, therefore, we believe that the rejection on the Anzai publication should not be pressed and this rejection will not be affirmed.

The rejection of the claims on the ground of insufficient disclosure is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

Notices under 35 U.S.C. 290; Patent Act of 1952

2,625,335, R. Atwood, TEXTILE SPOOL DRIVING CONNECTION; **2,953,317**, Atwood and L'Allemand, SPOOL; **3,095,161**, same, ANTI-SLOUGHING BOBBIN; **3,107,067**, same, SLIP SLEEVE TEXTILE BOBBIN; **3,132,817**, same, TEXTILE BOBBIN AND DRIVE SHAFT THEREFOR, **filed** June 29, 1966, D.C. Del. (Wilmington), Doc. 3226, *Cocker Machine & Foundry Company* v. *The Dyson-Kissner Corporation*. Dismissed without prejudice, Aug. 18, 1967.

2,657,618, W. Eisbein, DEVELOPING APPARATUS, **filed** Nov. 9, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c2084, *American Photocopy Equipment Co.* v. *A. B. Dick Co.* Plaintiffs complaint; defendants counterclaims are dismissed with prejudice, Dec. 6, 1967.

2,713,447, G. L. Maner, PORTABLE PACKING STAND, **filed** Sept. 24, 1963, D.C., E.D. Calif. (Fresno), Doc. 41781, *Maner Packers, Inc.* v. *Arrowhead Farms, Inc. et al.* Patent is vested in Maner Packers, Inc.; defendants have infringed the claims; plaintiff is not awarded any damages; Dec. 8, 1967.

2,750,314, C. W. Bemmels, ADHESIVE TAPES, **filed** Dec. 6, 1967, D.C.N.J. (Newark), Doc. C1241–67, *Johnson & Johnson* v. *Kasen Industries, Inc.*

2,774,087, J. D. Boz[illegible], METHOD FOR SECURING TOGETHER MOCCASIN VAMPS AND PLUGS; **2,946,069**, same, METHOD OF MANUFACTURING MOCCASINS, **filed** Feb. 6, 1961, D.C. Minn. (Minneapolis), Doc. 4–61–C–31, *The Jo-An Shoe Manufacturing Co., Inc.* v. *Minnetonka Moccasin Co., Inc. and Phillip W. Miller*. Consent judgment for injunction, Nov. 13, 1962.

2,802,448, D. H. Young, FOUNTAIN PEN CONSTRUCTION AND INK CARTRIDGE THEREFOR, **filed** Apr. 23, 1965, D.C., S.D.N.Y., Doc. 65–C–1236, *Waterman-Bic Pen Corp.* v. *David Kahn, Inc.* Stipulation and order dismissing action, Dec. 7, 1967.

2,884,039, W. L. Hicks, VEHICLE TIRE BALLAST, **filed** Nov. 29, 1967, D.C., E.D. Calif. (Sacramento), Doc. S–579, *Curtis Dyna-Products Corporation* v. *Larry's Tire Mart, Inc., and Sovereign Resources, Inc.*

2,932,368, H. E. Schell, Jr., STRUCTURAL LOCK; **3,102,641**, Konstant and Schell, STORAGE RACK, **filed** Nov. 15, 1967, D.C., E.D. Calif. (Sacramento), Doc. S–558, *Speedrack Inc.* v. *Fred L. Baybarz, doing business as F. L. Baybarz Enterprises and Lodi FAB Industries, Inc.*

2,946,069. (See 2,774,087.)

2,953,317. (See 2,625,335.)

2,988,848, J. H. Lemelson, NOISEMAKING TOYS, **filed** Feb. 6, 1967, D.C. Conn. (New Haven), Doc. 11804, *Jerome H. Lemelson* v. *W T. Grant Company, McCrory-McLellan-Green Stores*. Stipulation for dismissal, Oct. 17, 1967.

3,012,323, E. O. Thompson, METHOD OF DENTISTRY AND APPARATUS THEREFOR, **filed** Feb. 28, 1966, D.C., S.D. Calif. (San Diego), Doc. 3492–SD–K, *Vacudent Mfg. Co. and Zions 1st National Bank* v. *U.S. General Vacuum Corporation*. Consent judgment, Dec. 7, 1967.

3,025,085, S. A. Young, SPOUT CONSTRUCTION, **filed** Jan. 7, 1966, D.C., N.D. Ohio (Cleveland), Doc. C66–23, *Stephen A. Young* v. *Gerber Plumbing Fixtures Corp. and M. Volk Supply Co.* Stipulation of dismissal, dismissed with prejudice, Dec. 8, 1967.

3,095,161. (See 2,625,335.)

3,102,641. (See 2,932,368.)

3,107,067. (See 2,625,335.)

3,132,817. (See 2,625,335.)

3,160,361, W. C. Monahan, UNITARY PAPER TOWELLING RACK, **filed** Apr. 7, 1965, D.C. Conn. (New Haven), Doc. 10906, *Monaplastics, Inc.* v. *Caldor, Inc.* Stipulation for dismissal, Oct. 31, 1967.

3,303,588, F. O. Krause, ROTARY SNOW PLOW, **filed** Dec. 7, 1967, D.C., N.D.N.Y. (Utica), Doc. 67–C–379, *Wausau Iron Works* v. *Frink Sno-Plows, Inc. and Frederick O. Krause.*

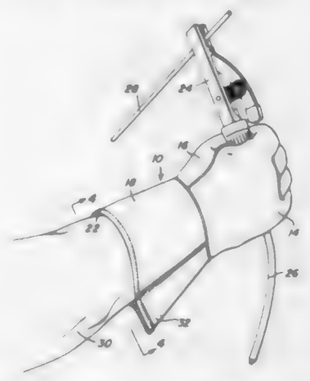
3,315,041, S. O. Sampson, TRACK SELECTION CONTROL MEANS FOR MAGNETIC SIGNAL RECORDING AND REPRODUCING SYSTEMS, **filed** Sept. 18, 1967, D.C., S.D.N.Y., Doc. 67–C–3595, *Sidney O. Sampson* v. *Sony Corporation of America.*

PATENTS

GENERAL AND MECHANICAL

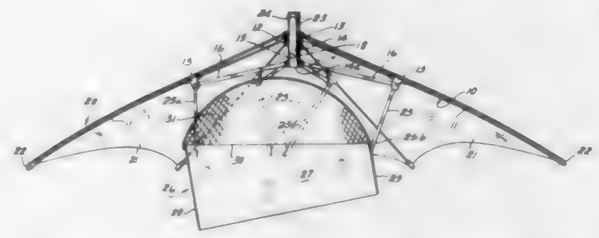
GRANTED MARCH 26, 1968

3,374,487
WELDER'S GLOVE
Morris L. Slimovitz, P.O. Box 219, Newbern, Tenn. 38059
Filed Feb. 3, 1967, Ser. No. 613,841
1 Claim. (Cl. 2—161)



A glove especially adapted for use by welders and includes a relatively large protective cuff that is retained in a snug engagement with the sleeve of a garment of a welder by employing strips of fastening material known as "Velcro" which retain the cuff in the desired snug engaging condition but also enables the glove to be readily removed from the hand of the welder by the welder moving his arm and hand in a rapid arcuate manner such that the glove will be slung off of the hand with the outward forces exerted on the glove being sufficient to overcome the retention forces of the "Velcro" so that the cuff of the glove will automatically expand to its full size so that the glove may be slung off without requiring the use of the other hand to release fastener devices such as are conventionally employed for retaining the cuff of a glove in snug engagement with the sleeve of a garment of a wearer.

3,374,488
COLLAPSIBLE HEADGEAR
Ruth C. Erbb, 2 Sutton Place S., New York, N.Y. 10022
Filed Oct. 23, 1965, Ser. No. 503,257
3 Claims. (Cl. 2—177)

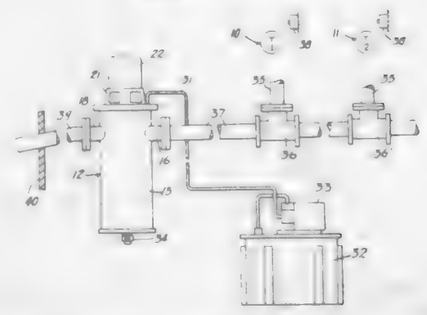


A collapsible headgear comprising a conventional umbrella-like frame having a flexible cover secured to a plurality of ribs hinged to a central stem, hinge mountings centrally of said ribs, a plurality of radial brace members hingedly secured to said hinge mountings at one of their ends and at the other of their ends to an elongated central ferrule adapted for slidable engagement and disengagement with respect to said stem, said ferrule and brace members when in full engagement with said stem being above the plane of said hinge mountings and being yieldably supported in said locked position by the tension of said flexible cover, each of said hinge mountings also hingedly supporting a strut member downwardly extending from each rib, said strut members being of substantially uniform length and being fixedly secured to the upper edge portion of a resiliently flexible head encircling band, said band being gradually tapered from a wide front portion to a relatively narrow rear portion, at least two of said struts at the front of said band extending substantially straight down from said hinge mountings and engaging said band at positions widely spaced from each other and from adjacent side struts, and spaced pairs of struts at the side and rear of said band extending downwardly from said hinge mountings at convergent angles to dispose the band engaging ends of each of said pairs in close proximity to each other, whereby said band in extended head engaging position is disposed in a forwardly offset position with respect to the center of said frame, and is supported against relative rotary movement with respect to said frame. A preferred adaptation of the device has eight ribs and eight struts with two of said struts extending straight down from the hinge mountings and the other six being arranged in three convergent pairs.

3,374,489
ARTIFICIAL HEART VALVE
Francisco R. Alvarez Diaz, Antonio Arias 12, Madrid, Spain
Filed Mar. 26, 1965, Ser. No. 442,897
Claims priority, application Spain, Apr. 7, 1964, 298,382
12 Claims. (Cl. 3—1)

An artificial mitral valve for intracardiac implantation includes a ring constituting a valve seat having an outer portion for suturing in position, and a disc-shaped valve member loosely connected with said ring to oscillate between open and closed positions.

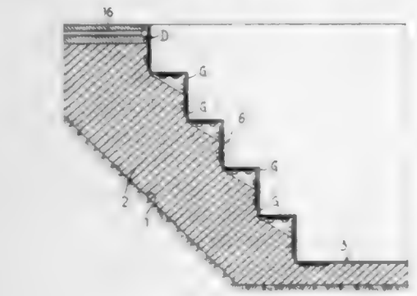
3,374,490
APPARATUS FOR CHLORINATION OF DISPOSAL FROM A SERIES OF TOILET BOWLS
Gordon R. Carlson, 19 James Place, Metuchen, N.J. 08840
Filed Sept. 1, 1965, Ser. No. 484,246
11 Claims. (Cl. 4—115)

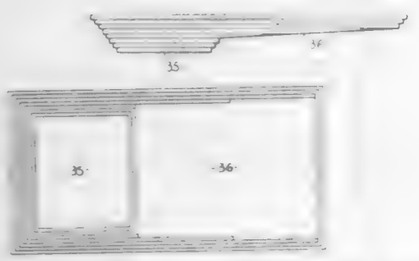


This invention relates to apparatus for chlorination of disposal from a series of toilet bowls onboard ships or

any vessel containing two or more toilets by delivery of the disposal from the several toilets to a treatment tank or unit. More particularly, the invention deals in arranging a macerator tube centrally of the tank, into the upper portion of which the disposal or waste is delivered and in arranging a plurality of blades on a shaft arranged longitudinally of said tube in providing an efficient breaking-up of the solids and mixture thereof with the treatment material or agent injected into the waste material just prior to entrance into said tube.

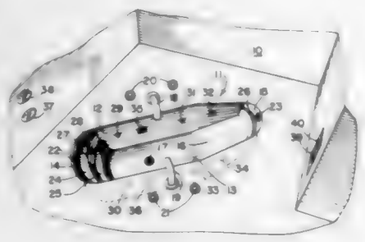
3,374,491
SUNKEN SWIMMING POOL
Pierre Patin and René Chautru, Paris, France, assignors to Thermacier, Paris, France, a French corporation
Filed June 30, 1965, Ser. No. 468,236
Claims priority, application France, July 3, 1964, 980,598
9 Claims. (Cl. 4—172)





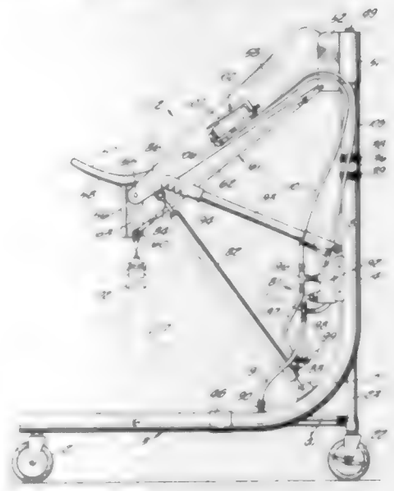
Sunken swimming pool comprising lining means which define the water-receiving basin and include side walls having a plurality of substantially horizontally extending steps in superimposed relation to each other substantially throughout the vertical extent of the side walls, the steps having a mean slope which is downwardly inclined inwardly of the pool.

3,374,492
THERAPEUTIC BATHTUB
Max J. Ruderian, Santa Monica, Calif., assignor to American Physical Fitness Research Institute, Inc., a corporation of California
Filed Oct. 23, 1965, Ser. No. 503,494
5 Claims. (Cl. 4—178)



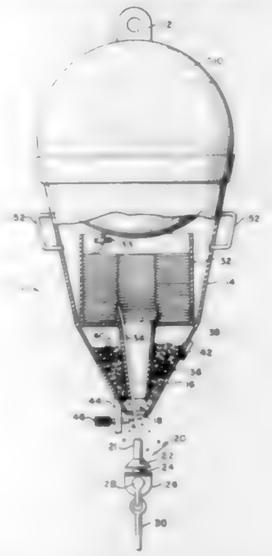
This disclosure relates to a therapeutic bathtub designed with a sloping back surface and steps for the comfort of the user and having dual centrally located fill spouts. The sides and at at least one end wall of the tub include built in water jets through which water is circulated by an external timer means and pump arrangement. There is thus provided an automatically controlled hot water massaging of a user in the tub.

3,374,493
DEVICE FOR LIFTING INVALIDS
Albert M. Herrera, 7828 Cucamonga Ave., Sacramento, Calif. 95826
Filed Sept. 27, 1966, Ser. No. 582,450
8 Claims. (Cl. 5—86)



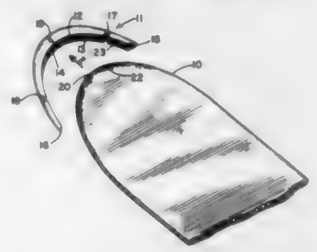
A castered framework includes a pair of vertically movable arms actuated by hydraulic mechanism controlled by the user, the user being supported by a depending sling seat and a pair of armpit crutch supports on the arms.

3,374,494
VARIABLE BUOYANCY MESSENGER BUOY
William H. Hunley, 449 Argyle Drive, Alexandria, Va. 22305
Filed Nov. 16, 1966, Ser. No. 595,319
10 Claims. (Cl. 9—8)



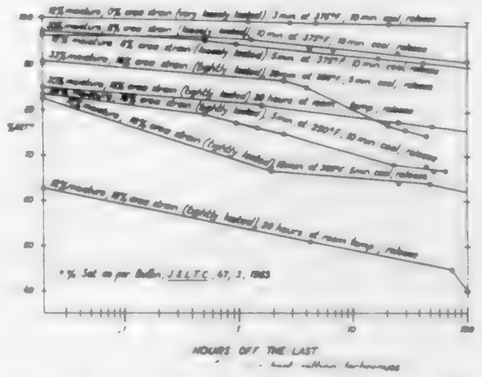
1. A messenger buoy for carrying a messenger line from a position on a submerged wreck to the surface, comprising:
a buoyant portion;
a messenger line;
a first compartment portion for containing said messenger line attached to the buoyant portion;
a quantity of particulate material heavier than water;
a second compartment portion attached to the buoyant portion for containing said quantity of particulate material; and
a connector-plug attached to said messenger line and removably secured to said second compartment for plugging both said first and second compartment portions to retain said particulate material.

3,374,495
SURFBOARD NOSE BUMPER
William P. Joyce, 18702 Pacific Coast Highway, Malibu, Calif. 90265
Filed Aug. 22, 1967, Ser. No. 662,400
3 Claims. (Cl. 9—310)



This disclosure relates to a guard or protecting sheath for the nose portion of a surfboard in the form of an integrally molded plastic member defining a curved channel receivable over the front curved nose portion of the surfboard.

3,374,496
METHOD OF LASTING LEATHER UPPERS
Robert Stubbings, 7721 N. Regent Road, Milwaukee, Wis. 53217
Filed Nov. 3, 1965, Ser. No. 506,250
7 Claims. (Cl. 12—145)

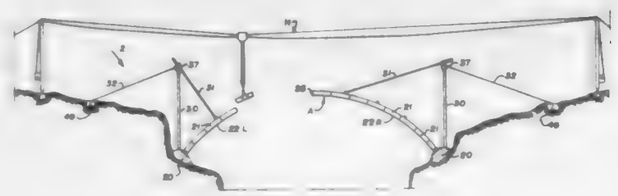


Process of shoemaking wherein a leather upper is assembled on a last without substantial stretching so that the upper assumes the general contour of the last, drying the unlasted upper (if not already moisture free when assembled on the last and heating the upper to between 250° and 450° F. to shrink the upper and cause it to last itself.

3,374,497
APPARATUS FOR ERECTING A BRIDGE ARCH
Homayoun J. Meheen, 6464 N. 14th Ave., Denver, Colo. 80214
Filed June 1, 1965, Ser. No. 460,170
11 Claims. (Cl. 14—26)

A method and apparatus for erecting an arch bridge, wherein each half of the arch is erected separately as a self supporting, cantilevered structure by holding it with rods extending from the top of an erection tower upstanding from the bridge abutment. Each tower is laterally stabilized and held by a tie back cable extending to an anchor behind its abutment. Completion of the erection is effected by bringing the arch halves together at the crown of the arch.

Each half of the arch is formed by erecting and joining sequentially an array of segments commencing with a first segment at the abutment at the base of the tower. A tie rod extends from the top of the tower to hold the completed arch portion of segments in place and to permit the next segment in the outward sequence to be erected and secured to the completed segments to cantilever outwardly therefrom. Another tie rod is then extended to this outward segment and pulled to lift the



completed arch portion to permit the first mentioned tie rod to be released. The operation is repeated by the construction of another outward segment and replacement of ties until the arch half is completed.

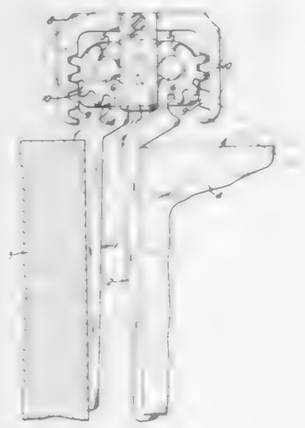
As a structural feature, the tower is provided with a head having a jack supporting saddle, to hold the several tie rods in predetermined positions and to permit easy shifting of a pulling jack from one tie rod to another. The saddle is arranged to direct the resultant pull forces of the tie rods and the tie back cable downwardly and in alignment with the tower insofar as possible to produce a minimum of eccentricity of compressive loading on the tower when a maximum pull is occurring, with the completed arch half.

3,374,498
MOP FOR CLEANING OR WAXING
Roy A. Bailey, P.O. Box B, Northvale, N.J. 07647
Filed Mar. 15, 1967, Ser. No. 623,318
2 Claims. (Cl. 15—119)

A sponge mop of elongated shape having an axial bore and end faces with an abutment plate fixedly secured to each end face of the sponge mop and a central opening in each abutment plate coaxial with the axial bore. The sponge mop is mounted on a rod support that extends through the registering openings and axial bore of the abutment plates and sponge mop, respectively.

The rod has an integral shank attached to a handle member there being on the shank, a manually operated pusher knob and a flexible pusher sleeve engaging the pusher knob at one end and at its other end the abutment plate at the inner end of the sponge pad. A retainer element on the outer free terminal end of the rod serves to lock the parts in assembled relation on the rod and shank as well as to receive the thrust when the pusher knob and flexible sleeve are pushed up along the shank and rod to axially compress the sponge mop.

3,374,499
HINGE WITH A PAIR OF PARALLEL PIVOTS
Robert L. Horstman, Clarks Summit, Pa., assignor to McKinney Manufacturing Company, Scranton, Pa., a corporation of Pennsylvania
Filed Sept. 12, 1966, Ser. No. 578,650
5 Claims. (Cl. 16—163)



1. A hinge comprising a channel having a web and side flanges, the inner sides of said flanges being provided with longitudinal rack teeth, a pivot bar disposed inside the channel lengthwise thereof and spaced therefrom, the bar having cylindrical edge portions adjacent said flanges forming parallel pivot pins, a pair of opposed hinge leaves extending outwardly away from the open side of the channel, and a transversely arcuate barrel segment extending lengthwise along the inner edge of each hinge leaf and joined thereto, the barrel segments being disposed in said channel between said flanges and pivot bar and fitting part way around said pivot pins for rotation thereon, and the outside of said barrel segments being provided with longitudinal gear teeth meshing with said rack teeth, whereby when said hinge leaves are swung apart the barrel segments will move the channel web away from the segments.

3,374,500
APPARATUS FOR MAKING THIN WALL FOAMED POLYMERIC ARTICLES
John W. Drenning, Baltimore, Md., assignor to Sinclair-Koppers Company, a partnership
Filed July 8, 1966, Ser. No. 563,869
8 Claims. (Cl. 18—5)

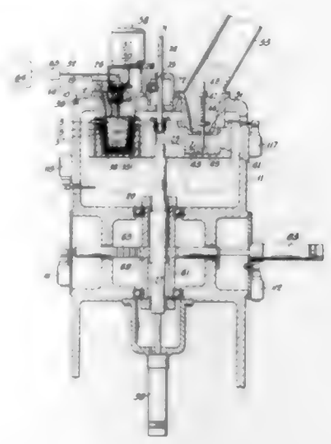
1. Apparatus for expanding and fusing expandable bead-like thermoplastic materials into self-sustaining articles comprising

complementary core and cavity mold elements adapted, when closed, to define a molding space therebetween,

means for applying an electrical potential to said core mold element,

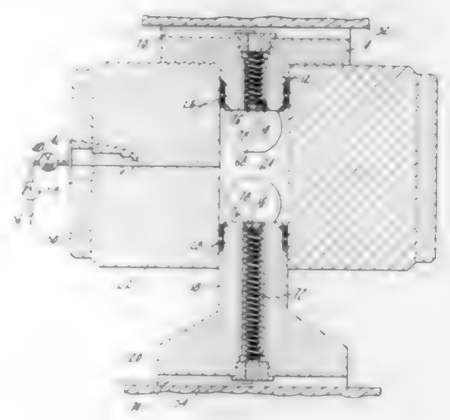
means for contacting said core mold element with a surplus of beads to coat the wall of the core with adhering beads,

means for closing said mold, and



means for subjecting the beads retained on said core mold element to heat whereupon said beads expand and fuse together to form a foamed structure corresponding to the configuration of the space between said mold elements.

3,374,501
HIGH PRESSURE PRESS
Donald H. Newhall, Walpole, Mass., assignor to Harwood Engineering Company, Walpole, Mass., a corporation of Massachusetts
Filed May 21, 1965, Ser. No. 457,700
7 Claims. (Cl. 18—16.5)



The disclosure of the invention comprises a high pressure press assembly having, in combination, a pair of opposed anvil elements,

each comprising a cylindrical base of large cross sectional area for supporting a maximum axially directed load imposed on said high pressure press assembly, and

adjacent said base converging surfaces terminating in a specimen engaging work face of relatively smaller area concentrating said axially directed load therein,

a support cylinder having an internal cylindrical wall extending between and overlying each of said cylindrical bases,

fluid pressure containing seals between said internal cylindrical wall and each of said cylindrical bases,

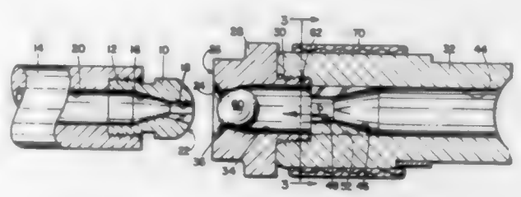
providing with said support cylinder and anvil elements a pressure fluid containing enclosure,

means for subjecting said anvil elements to an axially directed compression pressure, and

means directing fluid under pressure into said fluid pressure containing enclosure providing an evironmental pressure against any included specimen and exposed surface of said anvil elements between said seals including said converging surfaces and specimen engaging work faces, including means for controlling the fluid pressure within said enclosure to establish a desired relationship of said environmental fluid pressure to axial thrust which is independent of volumetric variation of said enclosure.

A layer of plastic material may overlie said specimen between the anvil elements for protection from said pressure fluid. The specimen may be engaged by a supporting ring of high tensile strength with a sealing ring between the ring and each adjacent anvil element. The construction may also include an anvil tip of transparent material and a supporting anvil base formed with a visual inspection channel therein.

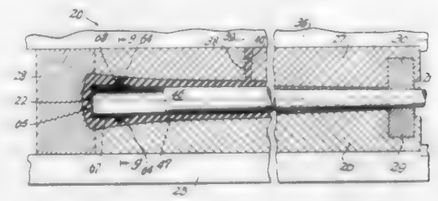
3,374,502
SPRUE BUSHING AND NOZZLE ASSEMBLY
Ralph P. Lazzara, Westfield, Mass., assignor to Osley & Whitney, Inc., Westfield, Mass., a corporation
Filed Oct. 12, 1965, Ser. No. 495,206
1 Claim. (Cl. 18—30)



In an injection molding machine of the type wherein an injection nozzle is engageable in a recess of a bored sprue bushing on a heated sprue extension having a bore which communicates with the bore of the sprue bushing whereby molten thermoplastic material fed under pressure into the injection nozzle is directed through the sprue bushing and sprue extension, the improvement in means for precluding leakage of thermoplastic material from the sprue bushing comprising: a pair of valve seats, one adjacent the recess in the sprue bushing and one adjacent the bore of the sprue extension, and a shut-off ball valve freely mounted in the bore of the sprue bushing for limited movement between said valve seats, said shut-off ball valve when seated against the valve seat adjacent the bore of the sprue extension permitting the introduction of molten thermoplastic material into the bore of the sprue extension and when seated against the valve seat adjacent the recess in the sprue bushing precluding the leakage of thermoplastic material from the sprue bushing following removal of the injection nozzle from engagement in the recess.

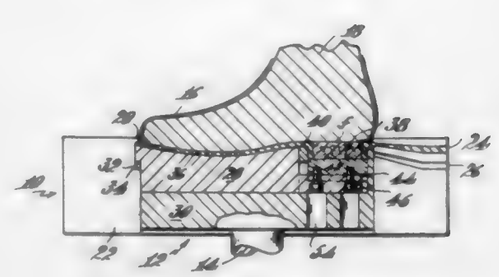
3,374,503
MEANS FOR MOLDING A GRIP OR THE LIKE
Richard M. Boniger, Westfield, Mass., assignor to A. G. Spalding & Bros., Inc., Chicopee, Mass., a corporation of Delaware
Filed May 5, 1964, Ser. No. 364,903
11 Claims. (Cl. 18—36)

An apparatus for injection molding a grip on the end of a hollow golf shaft wherein a free end of the shaft is inserted in a mold and is oriented and held against longitudinal movement and has a cap closing the end of the shaft, which cap is provided with a skirt overlying the side of the shaft and having projections for engaging the mold to prevent lateral movement of the end of the shaft with the projections providing passages for the moldable material as it is forced into the mold cavity to enable a



completely closed grip to be molded thereon while the end of the shaft is held against longitudinal and lateral movement under the pressures of the injected material.

3,374,504
MOLD ASSEMBLY WITH COMPOSITE SOLE PLATE FOR DOUBLE INJECTION
Herbert Ludwig, Desmastr. 112, Usen, near Bremen, Germany
Filed Apr. 11, 1966, Ser. No. 547,060
14 Claims. (Cl. 18—42)

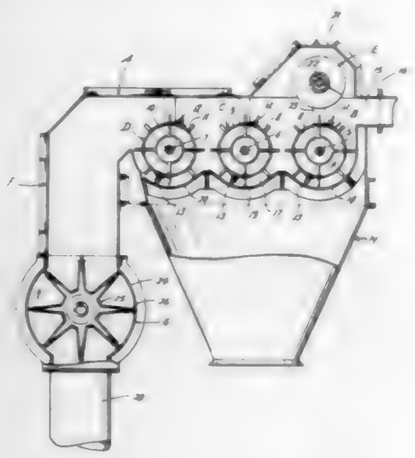


14. A mold assembly comprising a side ring and a composite sole plate, said sole plate embodying parts which have surfaces confronting the bottom, said surfaces collectively corresponding in area to the bottom of the shoe, and said parts being relatively movable in each of two positions to form with the bottom cavities of different depth for receiving a first injection of an elastomer of one kind and a second injection of an elastomer of another kind, in one position to place two of the surfaces at the same distance from the bottom and the other at a different distance and in the other position to place one of the two and the other at the same distance from the bottom and the other one of the two at a different distance.

3,374,505
AIRLINE SEPARATOR FOR SEED COTTON
Joseph C. Neitzel, Dallas, and G. W. Dickson, Mesquite, Tex., assignors to The Murray Company of Texas, Inc., Dallas, Tex., a corporation of Texas
Filed July 13, 1965, Ser. No. 471,518
2 Claims. (Cl. 19—93)

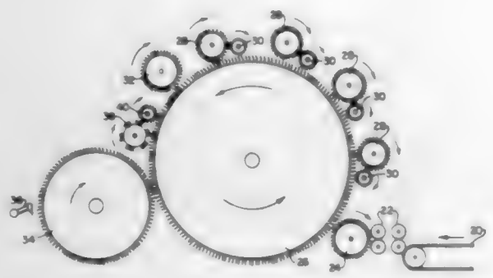
A machine for separating air from seed cotton being fed into a gin house including a distributor at the entrance of the machine and a plurality of pronged rollers arranged side by side in the path of flow for keeping the cotton suspended in the feed passage, while the vehicle air passes

downwardly through screens beneath the pronged rollers. The pronged rollers also carry wipers which pass over the



screens to keep them clear of waste which may be caught thereby.

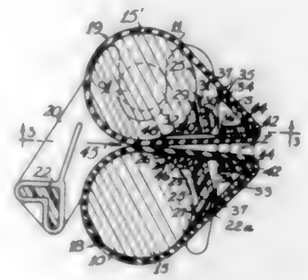
3,374,506
SPLASH YARN
Alden J. MacKay, Rochester, N.H., assignor to Baxter Woolen Co., Inc., East Rochester, N.H., a corporation of New Hampshire
Filed Sept. 2, 1966, Ser. No. 577,123
2 Claims. (Cl. 19—99)



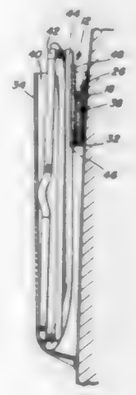
The production of splash yarn on a carding set by subjecting the fibers on a main carding cylinder to an intermittent drawing action to elongate and reduce the section of portions of the fibers.

3,374,507
CRADLE FOR FIBER SUPPORTING APRONS
Richard K. Whitehead, Sr., Richard K. Whitehead, Jr., and Harry C. Whitehead, all of 1202 Zonolite Road, Atlanta, Ga. 30306
Filed May 27, 1966, Ser. No. 553,507
10 Claims. (Cl. 19—245)

1. In a cradle for a fiber drafting system; a pair of side walls, a first drafting roll and a second drafting roll rotatably positioned between said side walls with their axes of rotation substantially parallel, a continuous first apron enclosing said first drafting roll and a continuous second apron enclosing said second drafting roll, and a first apron support positioned within said first apron with said first drafting roll and a second apron support positioned within said second apron with said second drafting roll; said first apron support and said second apron support each comprising: (*a*) an apron positioning means for fixedly positioning an apron in a predetermined path between a line of tangency with a drafting roll and a second line parallel to and remote from said line of tangency, (*b*) an apron tensioning means for maintaining substantially constant tension in an apron by motion of the apron in other than said predetermined path, (*c*) a first cleaning means for scraping debris from a drafting roll for passage of said debris with an apron along said predetermined path, and (*d*) a second cleaning means for scraping debris from an apron laterally outward toward said side walls as the apron passes along said predetermined path; said side walls being open adjacent said second cleaning means of said first apron support and adjacent said second cleaning means of said second apron support to provide for discharge of debris from between said side walls, and the predetermined path provided by the apron positioning means of said first apron support and the predetermined path provided by the apron positioning means of said second apron support being positioned relative to each other to define a fiber handling zone.

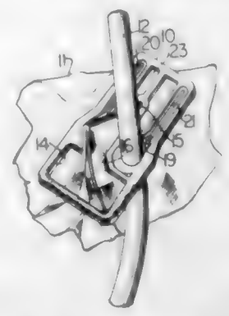


3,374,508
FASTENER ASSEMBLY
Morris L. Slimovitz, % Morris Manufacturing Co., P.O. Box 219, Newbern, Tenn. 38059
Filed Sept. 2, 1966, Ser. No. 576,983
5 Claims. (Cl. 24—3)



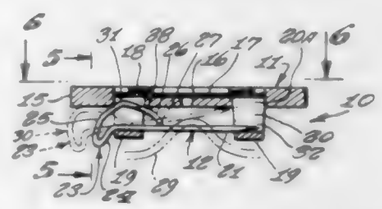
A two member fastener assembly for attaching articles to a garment, one member including a backing plate with a loop which provides a means for retaining a safety pin therein. One surface of the backing plate includes a strip of Velcro bonded thereto. The pin may be attached to a garment thereby providing a means for swivelling the Velcro covered backing plate about the pin. This Velcro covered plate is adapted to mate with an object to which a strip of Velcro has been directly attached. Likewise, the pinned plate is adapted to mate with a second Velcro covered plate including a clip fastener attached thereto, one arm of the clip including a straight pin connected thereto which enables the connection of the second Velcro plate with a fabric-like article.

3,374,509
CLAMP
Earl A. Logan, Hazelwood, Mo., and George T. Maloney, North Plains, and Ralph Carson, Kearney, N.J., assignors to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York
Filed May 27, 1966, Ser. No. 553,550
1 Claim. (Cl. 24—81)



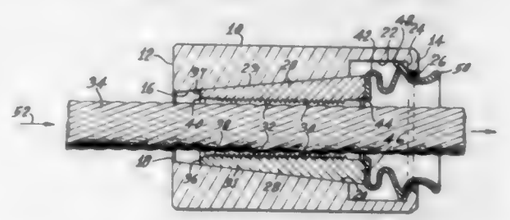
A one-piece clamp, normally of rigid plastic material, having key-hole shaped openings one of which is adapted to receive and engage a part of a bed covering and at least one other of which is adapted to receive a flexible drainage tube, the larger portion of the latter opening permitting the tube to function without restriction and the smaller portion of said opening being proportioned to pinch the tube closed when the tube is moved into said latter portion.

3,374,510
QUICK REMOVABLE AND ATTACHABLE BUTTON
Joseph A. Freed, 849 Beck St., Bronx, N.Y. 10459
Filed Aug. 23, 1965, Ser. No. 481,462
1 Claim. (Cl. 24—103)



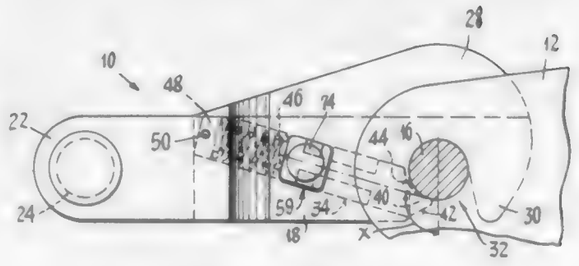
A garment button including a button member having a depression on its rear side to hold slidably captive a configurated pin member used to secure the assembly to a garment.

3,374,511
CABLE GRIP
Arthur Kenneth Barker, Alwoodley, Leeds, England, assignor to Cable Cover Limited, London, England, a company of Great Britain
Filed Jan. 10, 1966, Ser. No. 519,490
10 Claims. (Cl. 24—126)



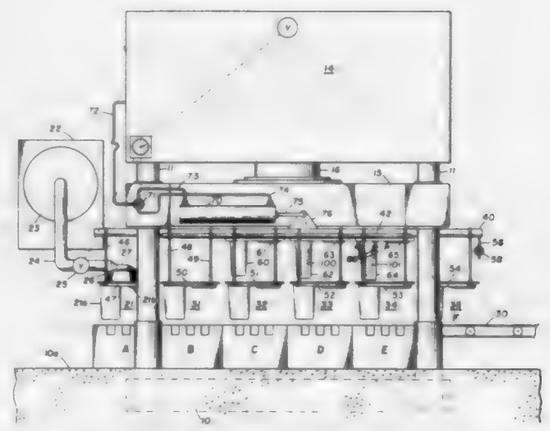
A strand chuck including a unitary barrel having a centrally disposed and tapered bore through the barrel and a plurality of circumferentially arranged jaws slidably mounted in the bore and correspondingly tapered to engage the tapered walls in an axial direction of the bore, with the larger end of the bore being sufficiently large in dimension such that the jaws may pass freely therethrough. The barrel of the chuck has a shoulder generally facing the narrow end of the bore and being positioned closely adjacent the larger end of the bore. The strand chuck further includes a generally conical shaped resilient member in the form of a coil spring or rubber bellows positioned within the bore and having its larger end abutting the shoulder and its smaller end abutting the larger ends of the jaws to forcibly urge the jaws toward the narrow end of the bore and to maintain the jaws within the bore.

3,374,512
RELEASABLE CLASP
Joseph R. Metz, Ridgefield, Conn., assignor to Norco, Inc., Ridgefield, Conn., a corporation of Connecticut
Filed Jan. 3, 1966, Ser. No. 518,063
10 Claims. (Cl. 24—241)



Heavy duty releasable clasp comprising a hook formation having a spring-charged locking slide bolt to close the gap of the hook. A cross release bolt has a cam connection with the locking bolt and is adapted to be struck a hammer blow from either side of the hook formation to retract the locking bolt and release a part held captive in said formation.

3,374,513
PRESSURE FORMING SYSTEM
Cornelius J. Kelleher, Dallas, Tex., assignor to Verson Manufacturing Co., Dallas, Tex., a corporation of Texas
Original application Jan. 14, 1963, Ser. No. 251,166. Divided and this application Oct. 22, 1965, Ser. No. 509,673
5 Claims. (Cl. 25—23)

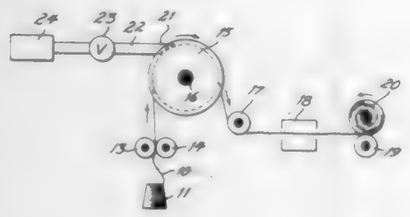


4. A system for forming deep ceramic containers having relatively thin walls from semi-dry granular clay charges which comprises:

(a) a base,

(b) a hydraulic ram platen powered for movement with multi-ton force toward and away from said base,
(c) at least one rigid mold having an open-topped cavity mounted on said base under said platen having inner walls sloping downwardly and inwardly from said top at angles of but a few degrees,
(d) at least one metallic mold liner having continuous unbroken wall and bottom surfaces and shaped to nest in said mold and adapted to contain said charge,
(e) at least one die mounted on said platen and positioned for mating with said at least one mold, with substantially uniform clearance from the bottom and the side walls of a mating mold liner to mold said charge, and
(f) means operable in synchronism upon retraction of said platen to extract said at least one liner from said at least one mold.

3,374,514
STRAND TREATMENT
Charles A. McClure, R.D. 2, Malvern, Pa. 19355
Filed Apr. 20, 1966, Ser. No. 543,957
8 Claims. (Cl. 28—72)



This invention relates to treatment of textile strands, concerning especially strand-crimping. A process is provided for directing hot fluid obliquely onto one side of a textile strand, the opposite side of which is maintained relatively cool. The strand so treated subsequently assumes a crimped configuration upon being forwarded away from the treating location.

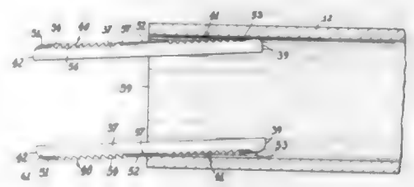
3,374,515
METHOD OF MAKING AN ELECTRICAL CAPACITOR
Arthur L. Girard, North Adams, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed June 3, 1966, Ser. No. 555,188
1 Claim. (Cl. 29—25.42)

A capacitor of non-speared metallized thin-film dielectrics is produced by metallizing a base, then forming a film on the metal, then heating to cure the film and produce an adhesion between the film and the metal that is greater than the adhesion between the metal and the base, and then stripping the metal and film from the base.

3,374,516
HONING TOOLS AND METHOD
Windell Matthew, Rte. 1, Campbellsburg, Ind. 47108
Filed Jan. 28, 1966, Ser. No. 523,751
14 Claims. (Cl. 29—76)

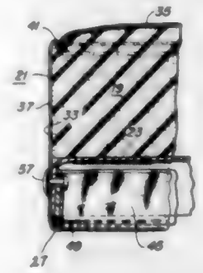
1. In a honing machine, the combination comprising: an elongated bar;

a plurality of outwardly projecting teeth along the top of said bar;



a plurality of bearing surfaces on the top of said bar, said bearing surfaces being at a level below the crests of said teeth but above the bases of said teeth.

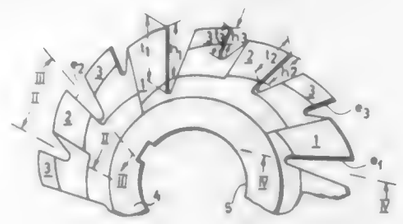
3,374,517
BICYCLE SADDLE CUSHION CONSTRUCTION METHOD
George W. Worley, Bolivar, Tenn., assignor to Troxel Manufacturing Company, a corporation of Tennessee
Filed Dec. 27, 1965, Ser. No. 516,333
6 Claims. (Cl. 29—91.1)



1. A method of constructing a bicycle saddle cushion component utilizing a base member including a substantially planar horizontal main portion and a substantially thin flanged portion depending from and circumferentially extending about said main portion and with said flanged portion having a circumferentially extending downwardly directed distal edge portion; a pad member of resilient material having oppositely facing generally planar upper and lower surfaces and a circumferentially extending edge surface; and a cover member including a substantially planar horizontal main portion, a skirt portion depending from and extending circumferentially about said main portion and including a circumferentially extending distal portion and a retainer band confrontingly arranged relative to and extending circumferentially contiguous the inward side surface of said skirt portion and with the lower edge of said skirt portion and the lower edge portion of said retaining band being securely conjoined in a circumferentially extending seam and with the upper edge portion of said band being unattached and substantially freely displaceable away from said skirt portion of said cover member; the method comprising:
(a) positioning in stacked order said base, pad and cover members with the upper surface of said pad member engaging the main portion of said cover member and with the lower surface of said pad member engaging the main portion of said base member with said skirt portion substantially closely surrounding said pad member edge surface and with said skirt portion and said retaining band of said cover member substantially closely surrounding respectively said pad member edge surface and said base member flanged portion;
(b) exerting a compressive force on and moving relatively together said base member main portion and said cover member main portion thereby compressing said pad member and causing said cover member skirt portion and conjoined retaining band

to move downwardly along the outward side of said base member flanged portion;
(c) continuing the movement respectively of said base and cover member main portions until the upper edge portion of said retaining band is substantially contiguous the lower edge portion of said base flanged portion;
(d) holding said pad member compressed and with the relative arrangement of parts arranged as recited in the immediately preceding step, and while holding thusly
(e) working the upper edge portion of said band inwardly along the circumferential extension of said band and inwardly underneath and past the distal edge portion of said base member flanged portion and thereby disposing the base member flanged portion substantially between the upper edge portion of said band and the depending skirt portion of said cover member, and then
(f) releasing the compressive force on said base member and cover member main portions and on said pad member, thereby allowing the resiliency of said pad member to move said base and cover member main portions apart and cause the distal edge portion of said base member flanged portion to substantially seat against the circumferentially extending conjoined seam portions of said retaining band and said skirt portion of said cover member.

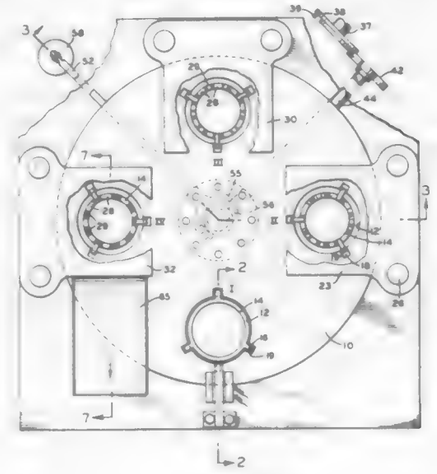
3,374,518
HOB
Bernd Bentjens, Schwarzenbek, near Hamburg, Germany, assignor to Fa. Wilhelm Fette Prazisionswerkzeug-Fabrik, Schwarzenbek, near Hamburg, Germany
Filed Sept. 16, 1965, Ser. No. 487,825
Claims priority, application Germany, Sept. 18, 1964, F 44,004
11 Claims. (Cl. 29—103)



A rotary milling cutter includes a plurality of teeth which define a helix about the periphery of the cutter and which are arranged in a plurality of substantially axially extending rows. Some of the rows consist of teeth having a first length and others of the rows consist of teeth having a length which is less than the first length, and all teeth of all rows have a top land provided with a cutting edge and two mutually inclined side faces which flank the cutting edge. The mutual inclination of the side faces is the same for all of the teeth of the cutter.

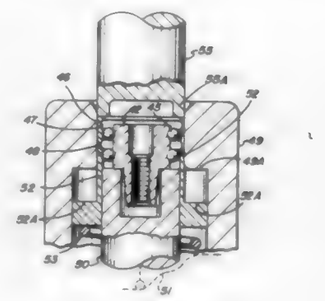
3,374,519
MACHINE AND METHOD OF FORMING SHEET METAL ARTICLES
Warren D. Anderson, Stamford, Conn., assignor to Norma-Hoffmann Bearings Company, Division of Universal American Corporation, a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,644
9 Claims. (Cl. 29—148.4)

Method and apparatus for die forming ring-like workpieces where the diameter of the piece gets smaller as successive operations are performed, which consists in forming radial tabs on the piece and placing them in radial



slots, which are sufficiently long to retain the tabs during the forming operations and finally cutting off the tabs.

3,374,520
PROCESS FOR ASSEMBLING BALL BEARING DEVICES
Walter S. Sutowski, 6976 Crestview Drive, Brecksville, Ohio 44141
Original application Feb. 11, 1965, Ser. No. 431,852, now Patent No. 3,337,937, dated Aug. 27, 1967. Divided and this application Mar. 13, 1967, Ser. No. 622,719
5 Claims. (Cl. 29—148.4)



Process for assembling race members together with ball bearings positioned therebetween, the outer race member being split and resiliently biased toward closed position, which includes the supporting of the inner race member and positioning balls in a circle disposed in a horizontal plane in the raceway of the inner race member, temporarily confining the balls in position in the raceway of the inner race member, and pressing the outer race member downwardly over the balls so as to position them in the raceway of the outer race member as said temporary confinement is progressively withdrawn.

3,374,521
TAPPING APPARATUS AND METHOD
Frederick Clarke, Lafayette, La., assignor to Tenneco Inc., Houston, Tex., a corporation of Delaware
Filed Jan. 20, 1964, Ser. No. 338,751
20 Claims. (Cl. 29—157)

1. The method of performing a hot tapping operation on a container having a first fluid under pressure contained therein, comprising the steps of:
forming an enclosed chamber adjacent to and in communication with a portion of the external wall of said container,

positioning a fluid pressure actuated drilling means with a drill bit within said chamber and holding said bit in drilling engagement with said wall,

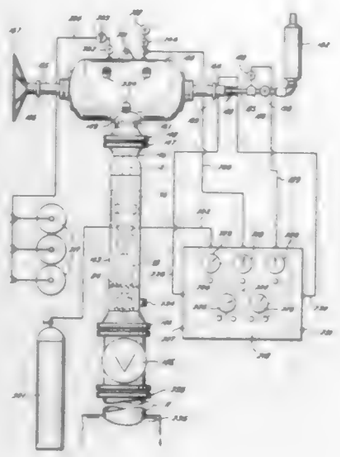
applying a second fluid under pressure to said chamber to thereby operate said drilling means,

advancing said bit into said wall during operation of said drilling means,

continuing the application of said second fluid until said bit initially penetrates said wall, to thereby permit the escape of said first fluid from said container into said chamber,

applying said first fluid to operate said drilling means to complete the cutting of an opening into said container.

5. An apparatus for performing a hot tap operation on a container having a fluid under pressure contained therein, comprising:



an elongate fluid tight housing having an open end adapted for securing to said container and enclosing the section of the wall of said container which is to be tapped,

a cutting means disposed within said housing with the cutting surface thereof adapted to engage said wall,

driving means connected to said cutting means for rotating said cutting means during operation of the apparatus,

releasable anchor means connected to said driving means and releasably engaging the inside wall of said housing in a fixed relationship during operation of the apparatus, and

means for advancing said cutting means toward said wall while said anchor means is engaged.

3,374,522
METHOD OF MAKING DIAPHRAGM VALVE BODIES
Henry W. Boteler, East Greenwich, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Continuation of application Ser. No. 50,670, Aug. 19, 1960. This application Jan. 22, 1965, Ser. No. 432,043
1 Claim. (Cl. 29—157.1)

1. A method of fabricating from metal stocks which:

(A) are flat,

(B) are of substantially uniform thickness, a diaphragm valve body having a pair of end openings, walls extending between said end openings along either side of a longitudinal seam and with interior surfaces defining a flow passageway, a diaphragm opening through one side of said walls between said end openings and communicating with said flow passageway, a flange around said opening and a raised weir opposite said diaphragm opening and having a diaphragm seating thereon, said method comprising:

(I) cutting each of two identical pieces of said stock with:

(a) an end opening edge,

(b) at least one diaphragm opening edge segment,

(c) at least one weir engaging edge segment,

(d) two wall seam edges,

(II) wrapping each said piece:

(a) until said wall seam edges abut each other,

(b) until each point which,

(1) is on a diaphragm opening edge segment,

(2) is on one side surface of said piece, remains on at least one straight line which:

(3) is completely within said one side surface of said piece,

(4) extends to a point on one section of said end opening edge,

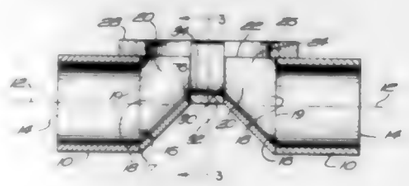
(c) until each point which:

(1) is on a weir engaging edge segment,

(2) is on said one side surface of said piece,

also remains on at least one straight line which:

(3) is completely within said one side surface,



(4) extends to a point on the remaining section of said end opening edge,

(III) butt welding together one wall seam of each said piece to the other wall seam of said piece,

(IV) cutting a third piece of said stocks:

(a) a pair of diaphragm half openings separated by weir strip,

(b) an outer edge spaced from said openings and strip,

(V) bending depressing said weir strip into a curved diaphragm seating surface,

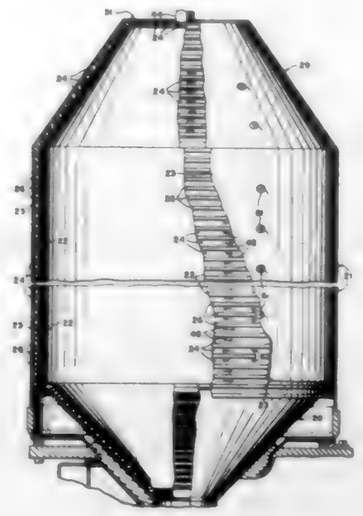
(VI) welding the weir engaging edge segment of each wrapped piece to the edge of said weir strip for one half-opening,

(VII) welding the diaphragm opening edge segment of each wrapped piece to the third piece around the remainder of said half opening.

3,374,523
HIGH POWER ELECTRON TUBE APPARATUS
Albert D. La Rue, Los Altos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Continuation of application Ser. No. 299,001, July 31, 1963. This application Nov. 16, 1966, Ser. No. 595,309
2 Claims. (Cl. 29—157.3)

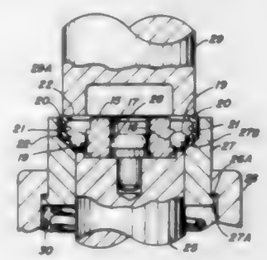
A collector assembly for large high power electron tubes such as klystrons. The collector assembly is formed

of simple geometrical sections such as cones and cylinders brazed together at their edges. Each of the sections is formed by rolling a composite sheet comprising a layer



of stainless steel brazed to a layer of copper, into the abutting side of which fluid coolant passages have been formed.

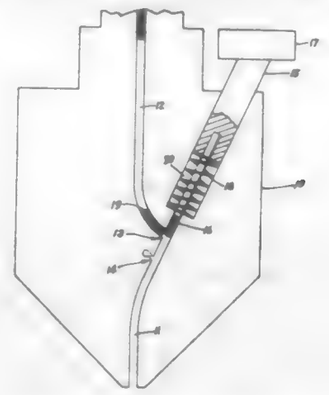
3,374,524
APPARATUS FOR ASSEMBLING BALL BEARING DEVICES
Walter S. Sutowski, 6976 Crestview Drive, Brecksville, Ohio 44141
Original application Feb. 11, 1965, Ser. No. 431,852, now Patent No. 3,337,937, dated Aug. 27, 1967. Divided and this application Mar. 13, 1967, Ser. No. 622,720
5 Claims. (Cl. 29—201)



Apparatus having opposed parts one movable in an axial direction relative to the other for moving ball bearing race members together, the outer race member being split, and to position the ball bearings between the race members in opposed raceways provided therein in the moving of the race members together, to form the assembly of race members with the ball bearings positioned in place in the opposed raceways.

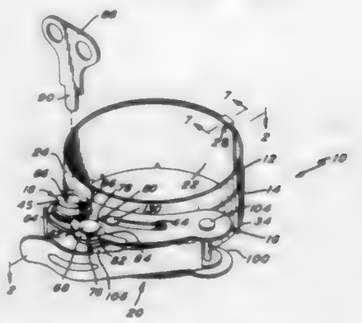
3,374,525
COMPONENT PLACEMENT APPARATUS
Eduard C. Petry, Hopkins, Minn., assignor to Fabri-Tek Incorporated, Minneapolis, Minn., a corporation of Wisconsin
Filed Oct. 14, 1965, Ser. No. 496,028
18 Claims. (Cl. 29—203)

Magnetic core placement apparatus having a block including a pair of intersecting channels, one of the channels opening out of the block to receive cores, and the other channel opening out of the block at a different location for placement of the core. A fluid jet port is provided at a point between the channel intersection and the channel opening for placement. A plunger, including a magnetic tip for releasably holding the cores, is mounted within the placement channel, and is movable between the intersection and the jet port, so that on reciprocation of the plunger the magnetic tip carries a single magnetic core



from the intersection to the jet port where the core is knocked off the magnetic tip by a fluid jet, to fall through the channel and out the placement opening. The apparatus is rotatably mounted to provide for programmed angular placement of the cores.

3,374,526
PISTON RING COMPRESSOR
Smith Kyser, Ionia County, Mich., assignor to Aircraft Specialties, Inc., Lapeer, Mich., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,868
9 Claims. (Cl. 29—222)

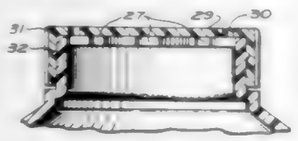


A piston ring compressor which includes a spring compression band, a housing and a tension band associated with the housing which embraces and limits the diameter of the compression band. Adjusting means are also provided which are attached to the tension band for adjusting the diameter of the compression band. Lever means are also connected to the tension band for quickly expanding and restoring the diameter of the compression band to facilitate placement on and removal from a piston without requiring further adjustment.

3,374,527
METHOD OF MAKING DISPENSING CONTAINER
Carl L. Jarrett, Kansas City, Mo., assignor to Consolidated Thermoplastics Company, Los Angeles, Calif., a corporation of Delaware
Original application Oct. 15, 1963, Ser. No. 316,327, now Patent No. 3,255,937, dated June 14, 1966. Divided and this application Sept. 18, 1964, Ser. No. 404,997
1 Claim. (Cl. 29—434)

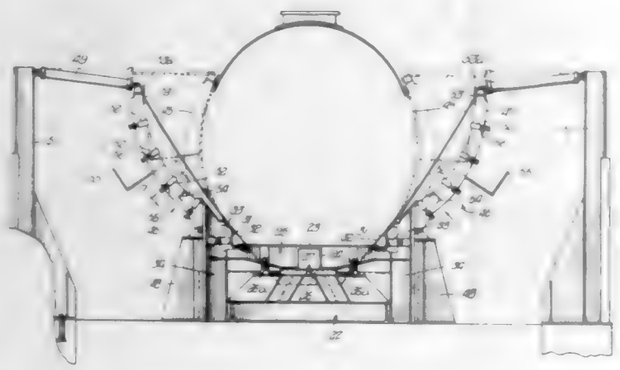
A method for fabricating a plastic container having a body portion and a cap portion wherein a seal is effected

between the body portion and cap portion by flexing flanges on the upper end of the body portion inwardly



thereof when the cap is attached to the body portion.

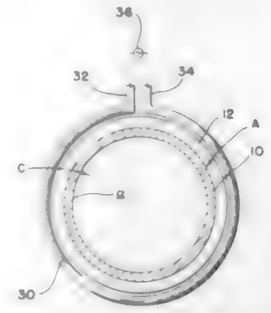
3,374,528
HOPPER CAR FABRICATION
Alvin A. Bowcutt, Park Forest, Ill., David J. Bolliker, Gary, Ind., and Bronius Polikaitis, Chicago, Ill., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Apr. 1, 1965, Ser. No. 444,737
4 Claims. (Cl. 29—471.1)



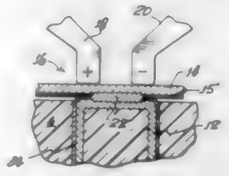
4. In the manufacture of hopper cars, the method comprising the steps of: mounting a bottom support assembly on a fabricating jig; attaching end and intermediate bulkhead assemblies in place on said bottom support assembly; attaching a roof assembly atop of said end and intermediate bulkhead assemblies; affixing the bottom edge portions of a pair of elongate one piece metal sheets to the respective sides of said bottom support assembly with the main portions of said sheets supported respectively on a plurality of forming arms having forward edge portions compatible with the curved side edges of said end and intermediate bulkhead assemblies; simultaneously moving said forming arms to force said side sheets against said side edges of said end and intermediate bulkhead assemblies so as to fit said side sheets to the curvature of said end and intermediate bulkhead assemblies; and affixing said side sheets in place against said end and intermediate bulkhead assemblies to semi-complete said hopper car.

3,374,529
METHOD OF BUTT WELDING
Harry B. Osborn, Jr., University Heights, and Harry V. Beronius, Kenton, Ohio; said Osborn assignor to Park-Ohio Industries, Inc., a corporation of Ohio
Filed Feb. 7, 1963, Ser. No. 256,939
4 Claims. (Cl. 29—482)

There is provided a method of butt welding the matching, peripheral joining flanges of two generally hollow workpieces, such as the housing portions of a sealed compressor. Ribs are provided around the flanges adjacent the outside thereof, and the ribs are inductively heated to a temperature below the melting point of the material forming the ribs without heating the flange to a great extent. Thereafter, the ribs are pressed together to weld them by pressure.



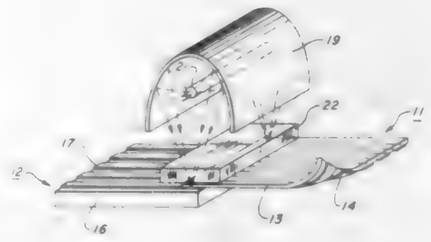
3,374,530
PROCESS FOR THE JOINDER OF METALLIC MEMBERS
Andrew E. Flanders, Pomona, and Claude E. Feighner, Ontario, Calif., assignors to General Dynamics Corporation (Pomona Division), Pomona, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 294,644, July 12, 1963. This application July 16, 1965, Ser. No. 477,075
19 Claims. (Cl. 29—484)



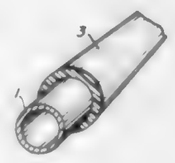
This disclosure relates to transmission or conductive material suitable for welding applications, particularly surface welding applications, and to a solution from which the transmission material is coated. The conductive or transmission material in the as-plated condition is constructed of a base metal with a layer or coating of at least indium and gold. The base metal may be, for example, nickel, copper, silver, chromium, or nickel-iron alloy such as Kovar, each having atomic radii compatible with welding techniques. A surface welding technique in conjunction with the coating effects an interface bond between joined members. At least one of the two members to be welded is coated and the members are positioned face to face with the coated surface or surfaces in abutment. The two electrodes of the welding machine are positioned on one side and in contact with the exposed surface of one of the positioned members to be welded with a predetermined pressure applied thereto. Energy is then rapidly applied in predetermined quantity through the electrodes, as a result of which heat is rapidly applied to an area localized to the material disposed intermediate the members being joined. The metal of the material being interconnected is thereupon caused to diffuse, fuse and coact, creating a bond between the members which is strong in the shear direction but which may be broken by peeling, and may be rewelded a number of times without degradation of the rewelded joint.

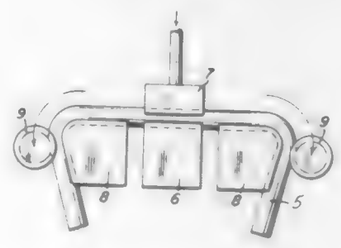
3,374,531
METHOD OF SOLDERING WITH RADIANT ENERGY
David Vernon Bruce, Ewing Township, Mercer County, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 21, 1965, Ser. No. 449,768
8 Claims. (Cl. 29—498)

Radiant energy, such as infrared, is employed to effect a given process, such as soldering a workpiece, without damage to heat sensitive materials were the process is carried out at a temperature deleterious to the heat sensitive materials and the radiant energy is passed through the heat sensitive materials. This is accomplished by employing a radiation transparent heat sink in contact with the heat sensitive material which permits the radiant energy to be passed through the heat sensitive material while conducting sufficient heat away from the heat sensitive material to prevent damage thereto.



3,374,532
METHOD OF MAKING A WALL-RUNG
Heinrich Zenhausern, Birmensdorferstrasse 134, Urdorf, Switzerland
Filed Oct. 5, 1962, Ser. No. 228,521
3 Claims. (Cl. 29—505)

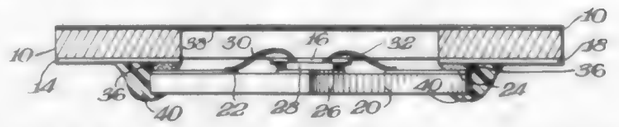




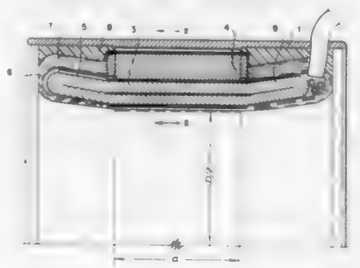
1. A method of making a wall-rung from a metal tube covered with a sleeve of synthetic material comprising the steps of loosely mounting the sleeve in a cold state on the tube, holding the tube and sleeve at the middle between the ends thereof, and bending the tube into a wall-rung shape and at the same time lengthwise stretching the sleeve to cause the same to grip the tube.

3,374,533
SEMICONDUCTOR MOUNTING AND ASSEMBLY METHOD
Darnall P. Burks, Williamstown, Mass., and John H. Fabricius, Stamford, Vt., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed May 26, 1965, Ser. No. 458,930
5 Claims. (Cl. 29—577)

A semiconductor device is mounted on a mounting chip of insulating material. Elements of the semiconductor device are in electrical contact with spaced discrete conductive pads on the mounting chip. The mounting chip is secured to a circuit substrate with the conductive pads in conductive contact with circuit lands on the substrate.



3,374,534
METHOD OF MAKING STATOR WINDINGS OF ELECTRIC MOTORS IN VIBRATORY-BATTING DEVICES
Reinhold P. Kuska, Kuznia Raciborska, and Dionizy Simson and Eugeniusz Makowski, Solec Kujawski, Poland, assignors to Zaklady Sprzetu Budowlanego Nr 2, an enterprise of the Polish State
Filed Oct. 23, 1963, Ser. No. 318,248
2 Claims. (Cl. 29—605)



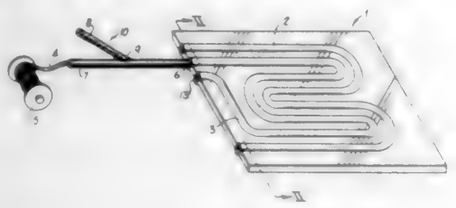
1. A method for manufacturing a stator assembly for vibrating and vibrating-percussive equipment having a stator core and associated winding wires, a portion of said wires extending axially from said core, said method comprising the steps of:

(a) surrounding said stator core and said associated winding wires with a metal sleeve, said portion of said winding wires being spaced from the inner surface of said sleeve,
(b) heating the whole assembly to a uniform temperature,
(c) impregnating the whole heated assembly with a first liquid comprised of a mixture of a resin, an initiator, and an activating agent,
(d) cooling said impregnated assembly to harden said first liquid,
(e) binding the outside periphery of said portion of said winding wires with glass cloth impregnated with a second liquid comprised of a mixture of a resin, an initiator, and an activating agent,
(f) filling the spaces between said binding and said winding wires with said first liquid and an addition of a filler,
(g) allowing the whole assembly to harden,
(h) covering the windings with glass cloth impregnated with said second liquid, and
(i) filling the remainder of said space between the covered outside of said portion of said winding wire and said inner surface of said sleeve, with said second liquid and an addition of a filler.

3,374,535
METHOD OF MAKING ELECTRIC HEATERS
Lester J. Tranel, St. Louis, Mo., assignor to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia
Filed Mar. 9, 1960, Ser. No. 13,836
11 Claims. (Cl. 29—611)

8. The method of installing a heater wire in a serpentine passage, comprising the steps of: providing a coil

of heater wire; disposing the end of the coil of heater wire adjacent an outlet end of the passage; and forcibly pulsating fluid against the wire and into the outlet end

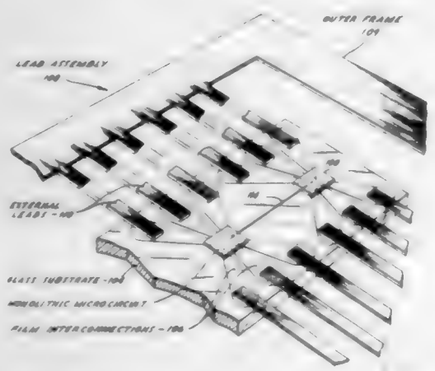


of the passage to carry the wire therewith longitudinally into the passage.

3,374,536
INCAPSULATION OF ELECTRICAL UNITS
Walter W. Schroeder, Williamstown, Mass., John H. Fabricius, Stamford, Vt., and Alphonse E. Will, Adams, Mass., assignors to Sprague Electric Company, Adams, Mass., a corporation of Massachusetts
Filed Oct. 29, 1964, Ser. No. 407,490
8 Claims. (Cl. 29—613)

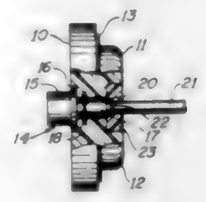
An electrical unit is encased in a moldable material by mounting wire terminals in a spaced relation on a support and preformed resin shells are carried on the wire terminals in such a manner that successively electrical units can be constructed on the ends of the terminals and the shells then move around the units.

3,374,537
METHOD OF CONNECTING LEADS TO A SEMICONDUCTIVE DEVICE
Walter L. Doelp, Jr., Chalfont, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,621
1 Claim. (Cl. 29—627)



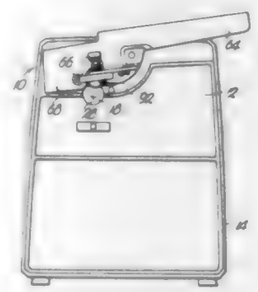
Packaged semiconductor device and assembly method utilizing semiconductor chip with surface contact areas joined to respective contact leads by respective interconnection films on substrate which supports chip and leads. Substrate, chip, and inner ends of leads are epoxy-encapsulated. All leads are attached to substrate simultaneously by means of discardable outer frame member from which leads extend inwardly.

3,374,538
METHOD FOR MAKING CAPACITOR END CAP
Myles N. Murray, Chagrin Falls, Ohio, assignor to Industrial Electronic Rubber Company, Twinsburg, Ohio, a corporation of Ohio
Filed May 3, 1965, Ser. No. 452,490
8 Claims. (Cl. 29—627)



Method and apparatus for making a capacitor end cap having a major body part molded about a terminal, with one end of the latter projecting from one end of this body part and the other terminal end exposed in a recess at the other end of the part. A connector wire is welded to the terminal end within the recess, and the recess is then filled with settable composition to form a minor part of the cap fully imbedding the welded joint and being substantially flush with the end of the major part.

3,374,539
AUTOMATIC CAN OPENER APPARATUS
Jack E. Briar, Mission, and Foster Lisle Talge, Jr., Overland Park, Kans., and Henry J. Talge, Kansas City, Mo., assignors to Dazey Products Company, Kansas City, Mo., a corporation of Missouri
Filed Mar. 23, 1966, Ser. No. 536,697
14 Claims. (Cl. 30—4)

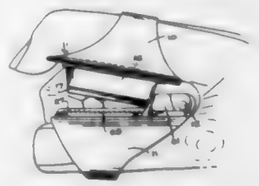


An automatic electric can opener having an improved cutting wheel and supporting linkages therefor, in which the wheel configuration prevents undue penetration of the cutting portion of the wheel into the lid of a can even under strong spring forces used to maintain the desired cutting relationship, and the linkages are so arranged as to utilize the engagement between the cutter wheel and a can lid as a fulcrum facilitating positive automatic control over operation of the drive motor responsive to the positioning of the cutting wheel and linkages and without damage or undue wear to the parts or danger to a user upon release of the wheel from one position to another under strong spring forces as the lid being cut becomes completely severed from the can.

3,374,540
RAZOR
Ernst de Longuyon, Pullach, Munich, Germany, assignor to Climar A.G., Zug, Switzerland
Original application June 24, 1964, Ser. No. 377,621, now Patent No. 3,311,975, dated Apr. 4, 1967. Divided and this application Feb. 27, 1967, Ser. No. 641,072
Claims priority, application Switzerland, July 31, 1963, 9,535/63
3 Claims. (Cl. 30—62)

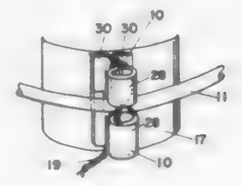
In a safety razor having a pair of resiliently pressed blade clamping plates, one of which forms a gripping member for coaction with a separate gripping member having a centrally disposed slot therein. The gripping members are assembled together in a lengthwise direction into a tapered socket or sleeve functioning as a handle. A bayonet-type lock or a snap or spring-type catch operates to secure the interconnection between the gripping members and the casing.

3,374,541
DEVICE FOR CUTTING FLOWER STEMS AND THE LIKE
Frank W. Earnest III, Williamsport, and Albert H. Torongo, Jr., Yardley, Pa., assignors to Frank W. Earnest, Jr., doing business as Frank Earnest Company, Williamsport, Pa.
Continuation-in-part of application Ser. No. 541,157, Apr. 8, 1966. This application Jan. 27, 1967, Ser. No. 612,152
5 Claims. (Cl. 30—232)



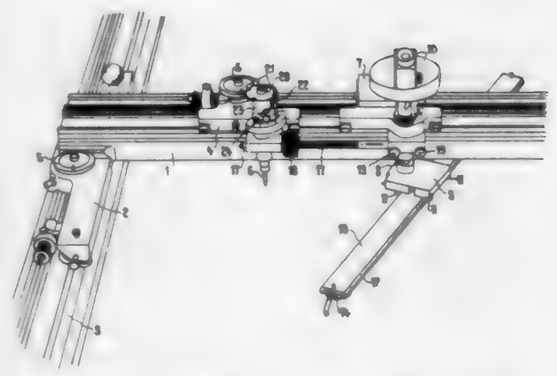
The device embodying the present invention is a gardening tool characterized by the provision of a pair of pivotally connected members which are respectively provided with shearing elements, the pivoted members being designed to be respectively engaged and held by the thumb and a finger of the hand of a user so that upon conjoint movement of the thumb and finger the members are moved relatively to one another in a scissors-like manner to sever and trim flower stems and effect light pruning of shrubbery and the like.

3,374,542
ORTHODONTIC BRACKET
George P. Moylan, Jr., Orchard Beach Road, R.D. 1, North East, Pa. 16428
Filed Oct. 23, 1965, Ser. No. 502,822
11 Claims. (Cl. 32—14)



The orthodontic device disclosed herein provides caps for teeth having brackets with knife edges that engage the arch wire in both occlusal and gingival. This knife edge contact does not depend on a pin but is a function of the bracket. Because of the nature of forces imposed by the device, the arch wire tends to remain seated in its slot and, therefore, the pin or cap is used to prevent accidental displacement.

3,374,543
COORDINATOGRAPH
Bernhard R. Bachmann, Koniz, Switzerland, assignor to Haag-Streit A.G., Liebefeld-Bern, Switzerland
Filed Oct. 10, 1966, Ser. No. 585,341
Claims priority, application Germany, Oct. 22, 1965, H 57,495
7 Claims. (Cl. 33—18)



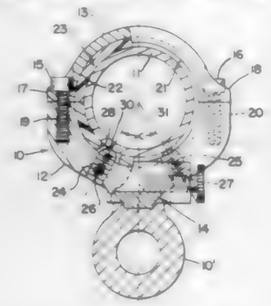
A coordinatograph having a carriage adjustable according to rectangular coordinates, a ruler firmly attachable to the drawing table of the coordinatograph, guide means associated with said carriage and removably engaging said ruler for guiding said carriage along said ruler, and an angle-measuring instrument indicating the angle of said ruler relatively to said rectangular coordinates.

3,374,544
FRONT GUN TELESCOPE MOUNT
Richard L. Pitchford, Brockport, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 16, 1966, Ser. No. 580,079
5 Claims. (Cl. 33—50)

1. In a front gun telescope mount having a ring-like frame composed of upper and lower substantially semicircular parts wherein a clearance opening is formed for the telescope and having retaining means for securing one of said parts in aligned engagement with the other and further having a ring of resilient material held within said opening in contact with the boundary surface thereof,

the improvement consisting of two rigid telescope seating elements which are secured in said lower part at angularly spaced positions which lie in the same plane along said boundary surface and are located substantially symmetrically of the vertical transverse center line of said opening, said ring having openings through which said elements extend, the seating surfaces of said elements lying normally slightly below the inner surface of the resilient ring,

whereby the compressive force caused in the resilient ring during clamping of the telescope causes a reaction force which firmly seats the telescope on said elements regardless of small pivotal adjusting movements of the telescope about the front mount.

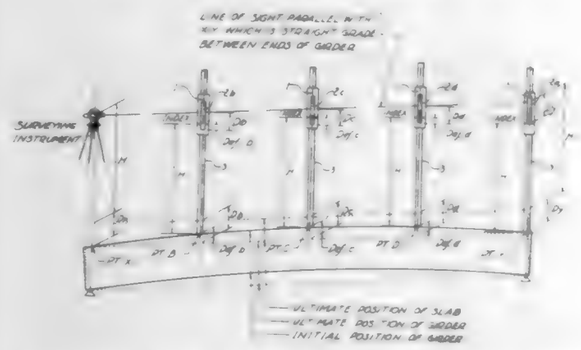


5. A front and rear gun telescope mount which cooperate to hold an aiming telescope on a gun, said rear mount including orthogonally arranged elevation and windage adjusting abutment members, said front mount being composed of mating upper and lower semi-circular parts which are clamped together, said parts having inner surfaces which cooperate to form a cylindrical opening in which the telescope is held,

an elastic ring mounted on and clamped by said inner surfaces of said parts against said telescope, said elastic ring having an outer cylindrical surface in contact with said inner surfaces of said parts and having an inner cylindrical surface in contact with said telescope, the axis of said inner cylindrical surface being inclined relative to the axis of said outer cylindrical surface and lying in a radial plane extending substantially midway between said abutment members so that the thickest portion of the rear edge of said ring lies substantially angularly opposite to said members,

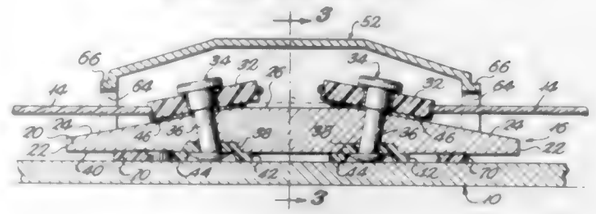
whereby said thick portion of the ring forces the telescope against said abutment members when the telescope is clamped in place.

3,374,545
CAMBER GAUGE
Lloyd I. Monroe, 15 Belmont St., Danbury, Conn. 06810
Filed May 3, 1965, Ser. No. 452,529
2 Claims. (Cl. 33—74)


LINE OF SIGHT PARALLEL WITH KEY WHICH IS STRAIGHT GRADE BETWEEN ENDS OF GIRDER
SURVEYING INSTRUMENT
ULTIMATE POSITION OF SLAB
ULTIMATE POSITION OF GIRDER
INITIAL POSITION OF GIRDER

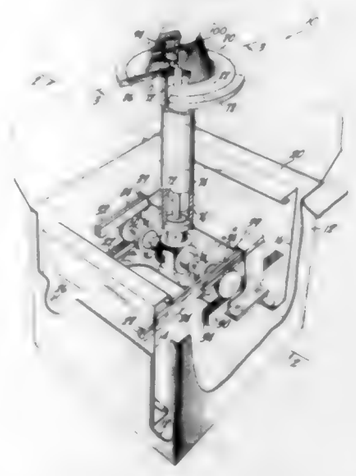
A camber gauge having a staff on which is slidably mounted a slide having a plurality of adjustable scales. This camber gauge is used for determining the true relationship of a finished deck slab and the supporting girders of bridges taking into account allowance which must be made for deflections, offsets and vertical curves.

3,374,546
MOBILE DRAFTING APPARATUS WITH SUPPORT SKIDS AND REMOVABLE CORD PULLEYS
Charles E. Justis, Sr., 825 Greenwood Road, Jenkintown, Pa. 19046
Filed Dec. 22, 1966, Ser. No. 603,869
6 Claims. (Cl. 33—80)



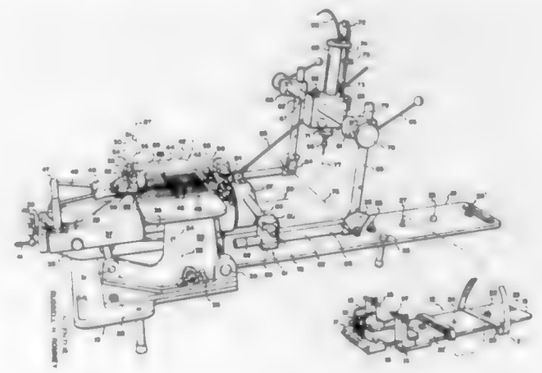
A straightedge blade body having parallel guiding edges includes two pulleys at each end thereof which engage the fixed guide cable. These guide pulleys may be mounted either in a substantially parallel relationship to the underlying drafting board or at an angle thereto. In a first form, the mounting means for the pulleys includes a rivet having a head thereof disposed within a cup washer the undersurface of which slides on the supporting surface to provide a skid means to facilitate movement. In another form of the invention, mounting means includes a headed member having a threaded bore therewithin and a stud member threaded into this threaded bore, the head of the stud member engaging an underlying surface. In further modifications, a tapered wedge-shaped pedestal is provided for supporting the pulleys substantially parallel with the drafting board. Additional skid members are attached to the undersurface of the blade body. In a further modified form, a snap-on skid member is provided including integral depending skid portions and having opposite ends adapted to snap onto the associated blade body.

3,374,547
CASE MEASURING DEVICE
Horace P. Abbott, Old Greenwich, Conn., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed June 6, 1966, Ser. No. 555,454
7 Claims. (Cl. 33—143)



Case measuring device in which a knob drives through torque-limiting mechanism a shaft driving a pair of spaced pinions each meshing with a pair of racks to drive them in opposite directions. The racks meshed with each pinion are each coupled to a respective one of two spaced plates each supported by two spaced racks at locations near the plate perimeter. The knob driving action is converted into a plate separation movement arrested by engagement of the plates with opposite inner sides of a case, the greatest realized separation being indicated by a measuring scale.

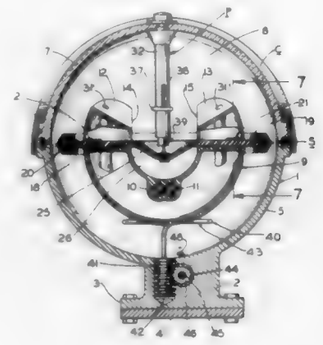
3,374,548
STEREOTAXIC SYSTEM
Russell H. Romney, 3259 Bon View Drive, Salt Lake City, Utah 84109
Filed Mar. 23, 1965, Ser. No. 441,970
14 Claims. (Cl. 33—174)



A stereotaxic system including an instrument positionable in any orientation relative to and for use upon a subject which is secured to a stage, that may be situated upon the stereotaxic base in any one of a plurality of useful orientations and removed when desired from the base to facilitate securing the subject thereon or to reorient the subject relative to the instrument. Comparator structure associated with the instrument for joint movement with the instrument so that displacement of comparator components, such as in response to following of a graphic representation of the subject, will cause duplicate displacement of the instrument.

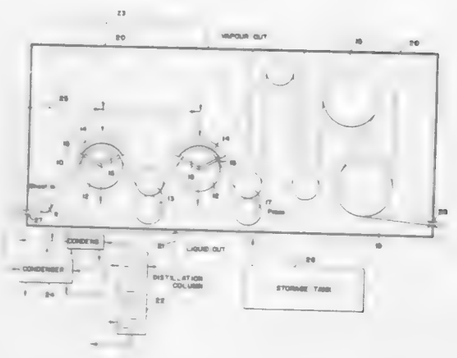
3,374,549
ORIENTATOR
Roy R. Hanson, Maryland Heights, Mo., assignor of one-fourth each to William H. Anderson, Glencoe, the estate of Joseph H. Schierman, late of St. Louis, and George A. Blase, St. Louis, Mo.
Continuation-in-part of application Ser. No. 182,239, Mar. 26, 1962. This application May 9, 1966, Ser. No. 559,666
5 Claims. (Cl. 33—223)

1. An orienting device for use in a vehicle for indicating both the heading and the attitude of said vehicle comprising, in combination, a housing having a heading and an attitude reference, a floating member within the housing and adapted for pivotal mounting therein, a fluid within the housing coordinated with the floating member to render the latter buoyant, a transparent closure member on the housing for viewing a portion of the interior thereof, vertical pivot means extending downward from said housing into the fluid and having vertical resilience, pivot engaging means on the floating member pivotally engaged with the pivot means, said floating member being cut away to permit pivoting around the pivot means, a permanent magnet having a mounting physically mounting it within the floating member beneath the pivot point of the floating member, an azimuth ring related to said floating member in compass coordinated relationship with the permanent magnet within the floating member and the heading reference of the housing and in attitude coordinated relationship with the permanent magnet within the floating member and the attitude reference of the housing, means for adjustably coupling the azimuth ring to the permanent magnet mounting about the east-west axis thereof defined by the azimuth ring and for positionally adjusting the azimuth ring with respect to the permanent magnet mounting to compensate for deviations in the indicated attitude, whereby the azimuth ring serves the twofold purpose of providing magnetic heading and attitude



references, said adjusting means comprising a seating ring oriented beneath the permanent magnet mounting, a cooperating abutment means on the vertical pivot means, the seating ring being movable for temporary engagement with the permanent magnet mounting means for temporary engagement with the permanent magnet mounting to engage the azimuth ring with the abutment means to adjust the relationship between the permanent magnet mounting and the azimuth ring.

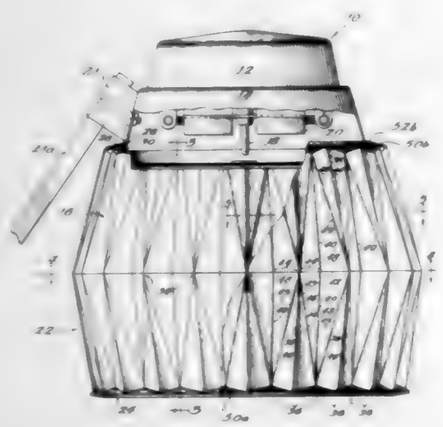
3,374,550
PROCESS AND APPARATUS FOR DRYING PAPER
Jean D. Belleau, Ville St. Laurent, Quebec, Canada, assignor to Dominion Engineering Works, Limited, Lachine, Quebec, Canada, a corporation of Canada
Filed Oct. 20, 1966, Ser. No. 588,076
10 Claims. (Cl. 34—9)



1. A method for drying a continuously moving web of newly formed paper having a high water content comprising the steps of: advancing the web of paper towards a drying station, introducing into the web just prior to the drying station a substitute liquid more volatile than water so that the said liquid replaces a portion of the water originally present in the paper, applying a vacuum to the web simultaneously with the addition of the more

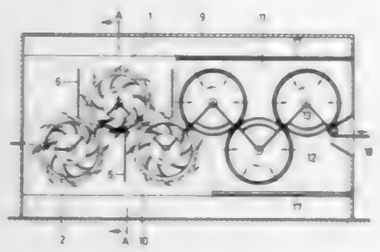
volatile liquid to remove the excess more volatile liquid and water from the web, and subsequently advancing the web to a drying station and removing substantially all of the remainder of the moisture from the web.

3,374,551
HAIR DRYER BONNET
Russell E. Petrick, Park Ridge, Ill., assignor to Bretford Manufacturing, Inc., a corporation of Illinois
Filed Mar. 2, 1966, Ser. No. 531,315
4 Claims. (Cl. 34—99)



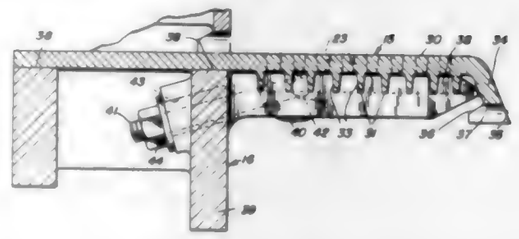
A hair dryer bonnet wherein the wall is defined by a plurality of folded pleats meeting in inwardly and outwardly folded vertices, forming vertical channels in the interior of the bonnet. Also the panels of each pleat are further slightly folded about a diagonally extending line.

3,374,552
SIEVE DRUM DRYER
Heinz Fleissner, Egelsbach, near Frankfurt, Germany, assignor to Anstalt fur Patentdienst, Vaduz, Liechtenstein
Filed May 7, 1965, Ser. No. 453,970
Claims priority, application Switzerland, May 8, 1964, 6,041/64
10 Claims. (Cl. 34—115)



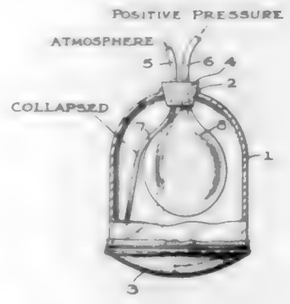
The present disclosure relates to an apparatus for the treatment of materials, for example textile materials, which comprises a substantially closed housing, more than one conveying means rotatably disposed within said housing, said conveying means being disposed in at least two rows which are staggered to each other, partition means dividing the apparatus into a treatment chamber and a fan chamber, radial fan wheel means disposed within said fan chamber, and air guide means disposed in the spaces between at least some of the radial fan wheel means, into which spaces flows the exhausted air from the conveying means.

3,374,553
CLINKER COOLER GRATE PLATES
William J. Gillman, 15800 Rim Rock Road, Apple Valley, Calif. 92307
Filed July 16, 1965, Ser. No. 472,631
4 Claims. (Cl. 34—164)



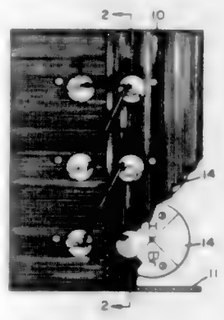
Grate plates for movable type cement clinker coolers having orifices spaced for effective distribution of cooling air, and an underneath grid structure to direct air to orifices and prevent warping of top surfaces of plates.

3,374,554
EDUCATIONAL OR TEACHING DEVICE FOR DEMONSTRATING THE SEVERAL ACTIONS OF THE LUNGS AND BLOOD VESSELS IN A HUMAN BODY
Isabelle D. De Bella, 4105 Wisconsin Ave. NW., Apt. 301, Washington, D.C. 20016
Filed Oct. 22, 1965, Ser. No. 500,715
2 Claims. (Cl. 35—17)



An educational device for teaching and demonstrating the actions of the lungs, blood vessels and diaphragm in a body during the inhaling and exhaling processes.

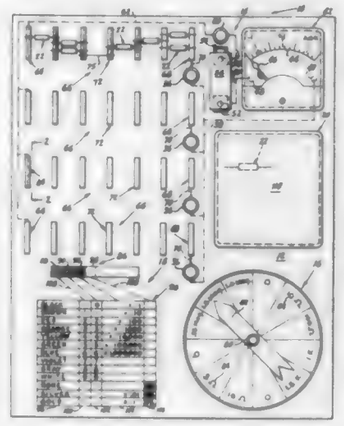
3,374,555
TEACHING DEVICE
James H. Hart, 4 Rocky Hill Road, Andover, Mass. 01810
Filed Nov. 9, 1965, Ser. No. 506,931
6 Claims. (Cl. 35—18)



An apparatus for demonstrating the theory of chemical valence having a support with openings in the support. A plurality of rotatable members having chemical indicia thereon are positioned adjacent the support so that when rotated the chemical indicia is brought into register with

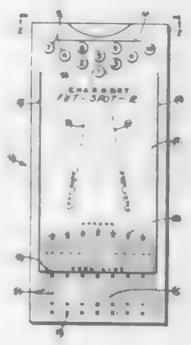
the openings. Elongated adjustable members are provided for connection between opposite valence charges of the chemical indicia to represent satisfaction of the valence charges between reactants.

3,374,556
GAME
Walter P. Brown, Reedsville, Ohio 45772
Filed Nov. 29, 1965, Ser. No. 510,193
6 Claims. (Cl. 35—19)



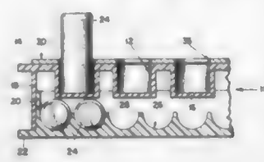
Apparatus including a game board on which are mounted a plurality of electrical components arranged and disposed in a plurality of open electrical circuits including a source of electrical energy and an electrical current indicating means, the components including as parts thereof a plurality of sequences of electrically insulated electrical connector means to releasably receive and electrically connect in series and in parallel randomly selected electrical resistances of differing ohmic values to complete one or more of the circuits, each of the sequences being in parallel with the others, and switch means connecting the current indicating means in the completed electrical circuits to indicate if such completed circuits satisfy Ohm's law.

3,374,557
GAME GUIDE
Charles R. Lotarius, Box 684, Pacific Palisades, Calif. 90272
Filed May 17, 1965, Ser. No. 456,158
4 Claims. (Cl. 35—29)



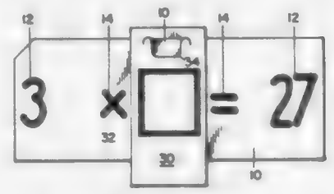
A two-piece game guide is disclosed for assisting a player to hit a remote target with a projectile which includes a base member having indicia representative of targets imprinted on the surface of the member and having a designated starting area imprinted on the surface of the member spaced apart from the target indicia. Aiming marks are imprinted on the surface of the member between the starting area designation and the target indicia. A transparent overlay having a graphic indication composed of straight lines imprinted thereon is arranged in friction-engaging contact with the member and when held in a selected location by the fingers of the user, is adapted to cooperate with the indicia on the member to show a relationship between the target indicia, the aiming marks and the starting designation.

3,374,558
EDUCATIONAL PEG BOARD
Luke J. Smith, Jr., East Longmeadow, Mass., assignor to Milton Bradley Company, Springfield, Mass., a corporation of Massachusetts
Filed Feb. 16, 1966, Ser. No. 527,794
1 Claim. (Cl. 35—31)



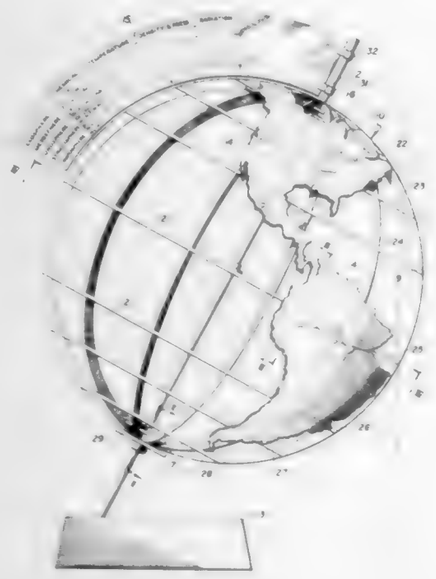
A teaching device comprising a peg board having openings therein, a plurality of opaque overlay cards, each card having sets of openings therein alignable with certain of the openings in the peg board when one of the overlay cards is superposed on the peg board, and a plurality of pegs insertible in the openings in the overlay card and peg board, the sets of openings in the overlay cards being of odd and even number, and the peg board being in the form of an enclosed container having a base wall provided with a plurality of spaced parallel, arcuate grooves separated by upstanding ribs, the grooves being complemental to the pegs for storage of the pegs in an orderly manner when not in use.

3,374,559
TEACHING DEVICE
Luke J. Smith, Jr., East Longmeadow, Mass., assignor to Milton Bradley Company, Springfield, Mass., a corporation of Massachusetts
Filed June 28, 1966, Ser. No. 561,158
2 Claims. (Cl. 35—31)



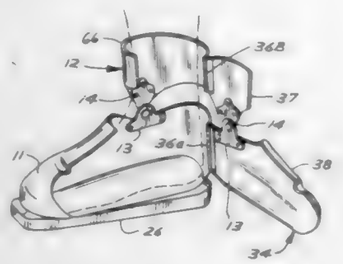
1. A teaching device comprising in combination,
(a) a flashcard;
(b) indicia on the flashcard pertaining to a subject with the indicia on the card appearing on both faces thereof and with the indicia on each face being identical in subject matter.
(c) means slidably related to the flashcard for concealing certain of the indicia thereon and consisting of:
(a) a slide member cut scored to define a tab;
(b) the tab having a sight opening therein;
(c) the tab being engageable with an edge of the flash card with the sight opening therein being registrable with certain of the indicia on one face of the flashcard;
(d) the slide member proper concealing certain indicia on the other face of the flashcard; and
(e) the certain indicia on the other face of the flashcard corresponding to the indicia on the one face appearing through the sight opening in the tab.

3,374,560
TEACHING AID
Maria K. Forsyth, Worcester, Mass. (% American Embassy, APO Box 260, New York, N.Y. 09080)
Continuation of application Ser. No. 413,405, Nov. 24, 1964. This application Mar. 14, 1967, Ser. No. 641,397
1 Claim. (Cl. 35—46)



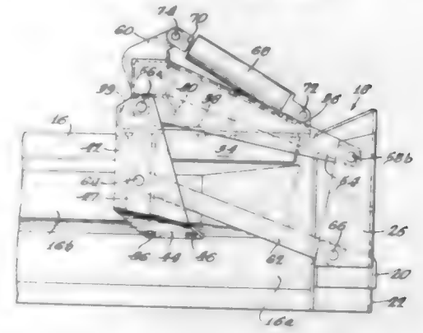
A skeleton globe which is assembled element-by-element from a shaft, a series of elongated semi-circular curved elements, a series of ring-like elements, detachable resilient land mass elements and a planetary ring concentric with the globe.

3,374,561
HYDROSTATIC PAD FOR SKI BOOT
Frank D. Werner, Bloomington, and Paul S. Petersen, Minnetonka, Minn., assignors to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 20, 1965, Ser. No. 498,242
13 Claims. (Cl. 36—2.5)



A ski boot having a base portion and a cuff portion with access means to permit foot insertion and access means that hold the foot of the wearer of the boot securely, and which includes padding in the cuff portion that holds the lower part of the leg of the wearer and which has a quickly conformable pad at the high load portions of the cuff. The quickly conformable pad distributes shock loads caused during skiing along the longitudinal length of the leg to equalize the pressure on the leg and thereby increase its ability to withstand the high load.

3,374,562
BLADE GATE
Herbert C. Glesmann, Omaha, Nebr., assignor to Omsteel Industries, Inc., a corporation of Nebraska
Filed Apr. 30, 1965, Ser. No. 452,172
13 Claims. (Cl. 37—50)

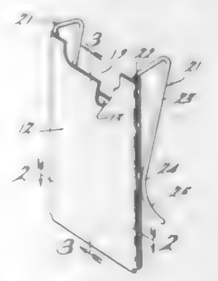


Gate mechanism for a moldboard including mounting means for rigid attachment to a moldboard, a gate adapted to be disposed at one end of a moldboard, a linkage on the order of a parallelogram linkage connecting the gate and a mounting means so that the gate may be raised or lowered relative to the moldboard and a power means mounted on the mounting means and connected to the gate for raising and lowering the same.

3,374,563
ELECTRIC IRON
Anton Schlechter, Box 122, Aylesbury, Saskatchewan, Canada
Filed Jan. 30, 1967, Ser. No. 612,713
4 Claims. (Cl. 38—74)

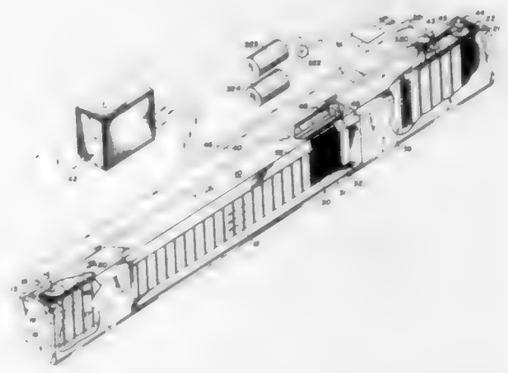
An electric iron having a lint disposing means secured therein, and an electric motor for creating a vacuum to operate the lint disposing means. Included in the sole plot of the iron are uniformly placed perforations for passing the lint.

3,374,564
CARD HOLDER
Philip Balaban, 19500 Sorrento, Detroit, Mich. 48235
Filed May 26, 1965, Ser. No. 458,972
2 Claims. (Cl. 40—11)



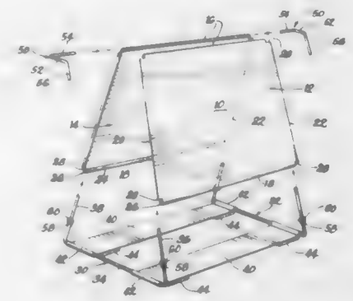
1. A card holder made from a strip of transparent material having a wide section and a narrow section folded adjacent to the junction therebetween to be in abutting relation to each other, tubular edges formed on the wide section which extend over and engage the edges of the narrow section and retain it against the wider section, and clips of U-shape, having a straight leg which extends into the tubular edges and a bent leg which abuts against the tubular edges.

3,374,565
MOVING DISPLAY SYSTEM
Robert L. Woolfolk, Dallas, Tex., assignor to Recognition Equipment Incorporated, Dallas, Tex., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,529
16 Claims. (Cl. 40—37)



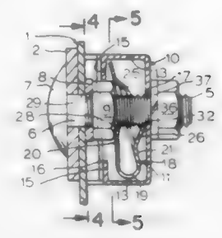
An information display system having a continuous track for supporting and translating a plurality of display panels sequentially past a writing zone and a display zone where each panel has disks mounted for rotation about a horizontal axis having opposite faces which contrast in visual appearance. At the writing zone, air jets selectively directed onto individual disks control the face position of a disk in accordance with input language information. The panel speed may be varied in dependence upon the rate of flow of display information to the system.

3,374,566
DISPLAY AND ADVERTISING DEVICE
Robert R. Snediker, Winnetka, Ill., assignor to Chicago Show Printing Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 29, 1965, Ser. No. 510,209
11 Claims. (Cl. 40—125)



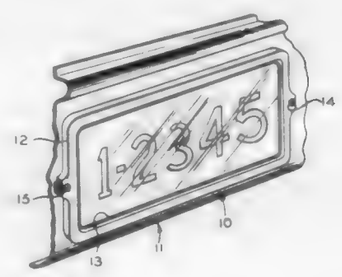
A presentation device to be mounted at the point of sale and it relates more particularly to a device to be used in advertisement and adapted to be mounted in full view on the top of a sales device or other surface.

3,374,567
IDENTIFICATION AND LOCKING MEANS FOR AUTOMOBILE LICENSE PLATE
William S. Salisbury, 3712 25th St., San Francisco, Calif. 94110
Filed June 23, 1965, Ser. No. 466,184
3 Claims. (Cl. 40—203)



A locking member adapted to be secured against the outer face of an automobile license plate by the conventional bolts for securing such plate to the automobile, which locking means is adapted to carry annual identifying data, and require destruction thereof for locking purpose in order to remove it from the bolts preparatory to replacement, thereby giving visible evidence of tampering with the license plate.

3,374,568
LICENSE PLATE HOLDER
Earl M. Trammell, Jr., Ladue, Mo. (P.O. Box 435, St. Louis, Mo. 63166)
Continuation-in-part of application Ser No. 422,648, Dec. 31, 1965. This application June 30, 1965, Ser. No. 468,422
16 Claims. (Cl. 40—209)

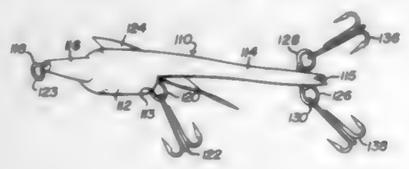


The license plate holder includes a frame for holding a license plate, the frame having a hook at one side and a snap fastener at the opposite side. The hook interfits one of a pair of spaced holes in the bumper and by swinging the frame about the hook connection in one of the spaced holes, the snap fastener may be connected to the other spaced hole. The fasteners include a flange which extends behind the frame, and a resilient pad is secured to each flange. The pad engages the license plate, and thereby accommodates vibration.

3,374,569
FISHING LURE
John Kurlovich, 32225 MacKenzie, Garden City, Mich. 48135
Continuation-in-part of application Ser. No. 411,205, Nov. 16, 1964. This application June 7, 1967, Ser. No. 644,162
5 Claims. (Cl. 43—42.36)

The disclosure includes a fishing lure with a body portion and a thin tail portion extending longitudinally from the top of the body portion which provides a surface on

the under side of the tail portion for the attachment of a spinner blade adjacent the body portion with the spinner

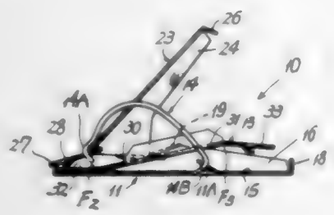


blade extending transversely of the tail portion on each side thereof and mountings for fish hooks below, above and on said tail portion.

3,374,570
FISHHOOK DISGORGER
Erwin C. Lenzen, Carver, Minn. 55315
Filed Dec. 15, 1965, Ser. No. 514,042
10 Claims. (Cl. 43—53.5)

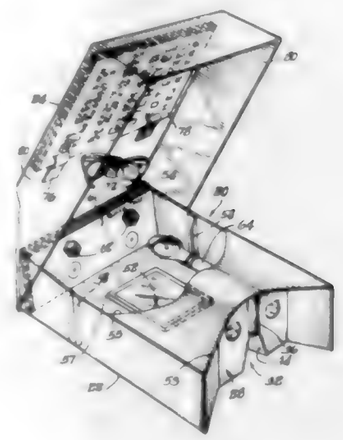
A fishhook disgorger having a linear handle extended between a thumb loop and a working eye. The eye has a pair of connected V-shaped sections both converging in a forward direction. The V-shaped sections are connected with a transverse member having a longitudinal groove on the top side for receiving the shank of a fishhook. The V-sections are longitudinally spaced from each other so that in use the hook engages the bottom of the noses or apex portions of the V-sections and the top of the mid-portion of the transverse member.

3,374,571
TRAP
George W. Oakes, Crystal City, Mo. 63019
Filed July 14, 1965, Ser. No. 471,845
1 Claim. (Cl. 43—83.5)



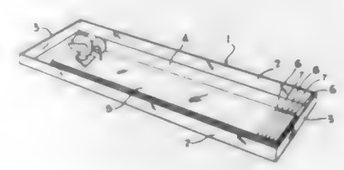
A trap having a fixed jaw member with a jaw end portion and a finger set portion. A movable jaw member is provided also having a jaw end portion and a finger set portion. Each of the jaw members have complementary bearing means intermediate the ends thereof about which the movable jaw member pivots about the fixed jaw member. A trigger is pivotally connected to the fixed jaw member and a C-shaped spring is provided that has its respective end portions anchored to the respective jaw members. Advantageously, the jaw members are maintained in a set open position when the end of the spring anchored to the movable jaw member is disposed below the bearing means of the jaw members.

3,374,572
TOY EYE EXAMINATION KIT
John A. Course, 18025 Dixie Highway, Homewood, Ill. 60430
Filed Oct. 22, 1965, Ser. No. 501,914
8 Claims. (Cl. 46—11)



A toy eye examination kit is disclosed comprising a viewer in the form of a box which is adapted to retain card means and instruments used in the examination.

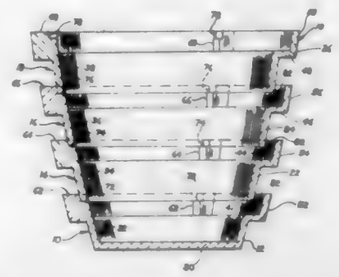
3,374,573
MAGNETICALLY ACTUATED TOY HAVING MOVABLE FEATURES
Gustav H. Bishoff, 7489 Drexel Ave., University City, Mo. 63130
Filed Oct. 24, 1965, Ser. No. 504,307
6 Claims. (Cl. 46—237)



1. An action toy a part of which is moved manually with respect to another part, comprising a base including an elongate strip of magnetic material having a multiplicity of narrow poles each of which has the same polarity along a surface of the strip and successive of which have opposite polarity and all of said poles extending transversely of and across the strip, and an object adapted to be supported by and moved along and relative to the surface of the said base strip, said object carrying a magnet adjacent said strip when said object is resting thereon, said magnet being alternately attracted and repelled as the object is manually translated and being connected to at least one element of said object to produce an alternating movement of the element as the object is moved manually lengthwise of said strip.

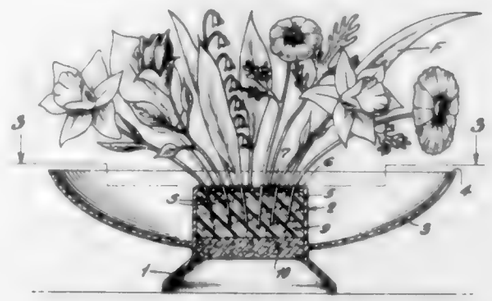
3,374,574
SECTIONAL PLANTER
Ernest Hall, 30 Cadwallader Terrace, Trenton, N.J. 08618
Filed June 21, 1966, Ser. No. 559,192
8 Claims. (Cl. 47—34.12)

A series of separately formed, interfitting, open-bottomed, annular dished sections are stacked one upon another to a selected height, to produce a planter the interior of which is continuous in the sense of being wholly unbroken by dividers or partitions. Earth is thus retained by the planter in a correspondingly continuous and unbroken, solid core. The sections are so formed that when stacked to a selected height, they expose the earth at the



side of the planter throughout its circumference at each of the several levels occurring between adjacent superimposed sections, to permit both side and top planting.

3,374,575
INTEGRALLY MOLDED FLOWER HOLDER
Duncan Tong, 23C Robinson Road, Victoria, Hong Kong
Filed June 29, 1966, Ser. No. 561,503
4 Claims. (Cl. 47—41.12)



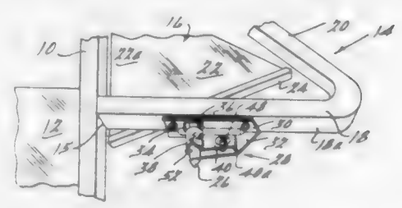
1. An integrally molded flower holder of hardened plastic material, comprising a base and a bowl receptacle diverging upwardly from said base, an open-bottomed housing extending upwardly from said base within the confines of said bowl with the top wall of said housing below the mouth of said bowl, said top wall having a plurality of perforations therein for the reception of the stems of flowers therethrough, said housing containing in its interior a body of flexible porous holding material which is insertable through the bottom thereof for retaining said stems in impaled position while the flowers assume natural positions above the mouth of said bowl, and a mass of solid material heavier than said porous flexible material in said housing below said last-mentioned material to impart stability to said flower holder.

3,374,576
JALOUSIE WINDOW STRUCTURES
Cecil W. Duclon, 834 W. Crestline Ave., Littleton, Colo. 80120, and Conrad J. Morgan, 1300 Kennamer Drive SE., Huntsville, Ala. 35801
Filed Apr. 7, 1966, Ser. No. 540,926
8 Claims. (Cl. 49—81)

1. In a jalousie window, a generally rectangular frame, a plurality of spaced parallel louvers pivotally and slidably mounted by one longitudinal edge portion at their opposite ends in opposed side portions of said frame, an endmost one of said louvers having along its outer longitudinal edge an inwardly projecting flange interhookable in an outwardly projecting flange on a cross-piece in the adjacent end of said frame, all of the other of said louvers having an inwardly projecting flange on the outer longitudinal edge thereof for interhookable engagement on outwardly projecting flanges on the inner or pivoted longitudinal edges of the neighboring louvers including the first endmost one, but excluding the other endmost one, means for turning all of said louvers in one direction about their pivots in one direction for opening and in the opposite direction for closing, said means being operatively connected with all of said louvers alike, excepting

that the last named endmost louver is movable by said means in a direction away from all of the other louvers after the interhooking of the outwardly extending and inwardly extending flanges on neighboring louvers so that the interhooked louvers are all pulled into tighter interhooked relationship for good sealing action and the first endmost louver is similarly pulled into tighter interhooked relationship with the aforesaid cross-piece and means for operating the last mentioned means.

3,374,577
MOUNTING CLIP FOR VENT WINDOW ASSEMBLY
James S. Salloum, Warren, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,752
5 Claims. (Cl. 49—391)



1. A one-piece sheet metal mounting clip for frictionally embracing the lower end of the swivel shaft of a motor vehicle vent window after the shaft has passed downwardly through a longitudinal support member carried by the door of the vehicle, comprising:

(A) a horizontal flange portion adapted to be rigidly secured to the underface of said support member and having an aperture therein to pass said swivel shaft;

(B) a longitudinally extending wall portion extending generally vertically downwardly from one longitudinal edge of said flange portion and bent upon itself about the axis of said shaft on a bend radius approximating the radius of said shaft to form

(1) a socket portion at the bend rotatably receiving the shaft and

(2) a resilient arm portion extending from said socket portion in parallel and confronting relation to the adjacent surface of the unbent section of said wall portion;

(C) means defining aligned openings in said arm portion and in said unbent section of said wall portion;

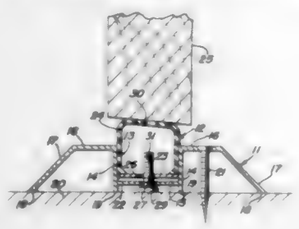
(D) a threaded fastener member adapted to be passed through said aligned openings; and

(E) means at the periphery of one of said openings for adjustably gripping the threads of said fastener element, whereby said element may be selectively turned to adjust the frictional grip of said socket portion on said shaft.

3,374,578
STRIP MEMBERS FOR FORMING SLIDEWAYS FOR GLASS PANES
Francois Mesnel, Neuilly-sur-Seine, France, assignor to Societe Anonyme des Etablissements Mesnel, Colombes, Seine, France
Continuation of application Ser. No. 457,327, May 20, 1965. This application Aug. 31, 1967, Ser. No. 664,892
Claims priority, application France, June 3, 1964, 976,900
4 Claims. (Cl. 49—440)

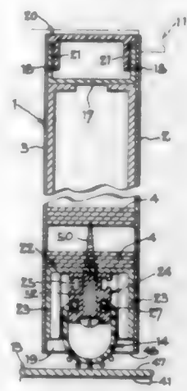
A frame member for a glass pane comprising a holder having a generally U-shaped cross-section in which is force-fitted a slideway for directly receiving the glass pane for sliding displacement therein. The slideway is constituted by an elongated extruded body which is U-shaped in cross section and is of a size to fit into the holder groove. A plurality of independent resilient strips are embedded in the base to extend transversely thereof at spaced intervals. The strips have sharp ends and a length greater than the width of the base and of the groove whereby the body is force-fitted into the groove to the bottom thereof with the retaining strip indening into the walls of the groove to retain the body in position in the groove.

3,374,579
ADJUSTABLE THRESHOLD
Edsel B. Neff, 2513 Park Drive, Roswell, N. Mex. 88201
Filed Apr. 29, 1966, Ser. No. 546,353
8 Claims. (Cl. 49—468)



1. An adjustable threshold comprising in combination, an elongated threshold body adapted to rest upon and be secured to a floor, said body being provided with a central longitudinal channel having an open top, a pair of side walls and a connecting bottom wall, said bottom wall being spaced above the bottom of said body to provide a central longitudinal recess in the bottom of the body below said channel, an adjustable threshold section extending longitudinally in said channel, said adjustable section including a strap-like base member overlying said bottom wall and a deformable door engaging member secured to said base member and projecting upwardly from said channel, said base member being provided with a plurality of screw threaded apertures, said door engaging member and said bottom wall being formed with openings in register with said apertures, and a plurality of adjusting screws engaging the screw threaded apertures in said base member and extending downwardly through the openings in said bottom wall to bear against the floor, said screws being accessible and adjustable through the openings in said door engaging member, whereby the adjustable threshold section may be raised and lowered in said channel relative to the threshold body.

3,374,580
WEATHER SEALING STRIP FOR DOORS
Robert O. Ruff, Cincinnati, Ohio, assignor to The Steelcraft Manufacturing Company, Rossmoyne, Ohio, a corporation of Ohio
Filed Apr. 22, 1965, Ser. No. 449,975
3 Claims. (Cl. 49—482)

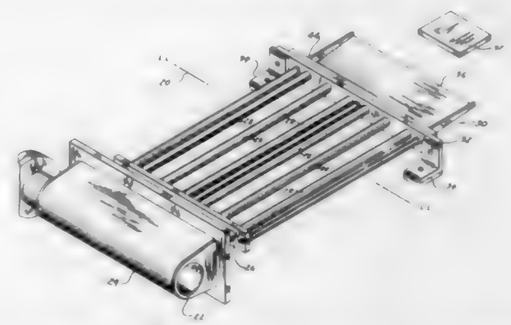


The invention essentially comprises an adjustable sealing strip mounted within a channel-shaped recess formed in the lower edge portion of a sheet metal door, the sealing strip being formed of resilient material and arranged to provide one or a plurality of line seals with reference to the surface of the threshold or sill of the door frame. In order to impart adjustability, the sealing strip, which is generally channel-shaped in cross section and of resilient or deformable material, includes mounting flanges along its free edges engaged in pairs of opposed slots formed in the opposite side portions of a rigid mounting rail secured in the downwardly facing channel-shaped recess of the sheet metal door. The channel-shaped sealing strip is deformable upwardly under pressure and includes flexible fins which extend outwardly a sufficient distance to engage the sill of the door frame. The combination of the mounting rail, the resilient sealing strip and its fins, permits the sealing strip to be selectively mounted in any one of the pairs of slots to compensate for variations in the distance between the lower edge portion of the door and the top surface of the sill, thereby to provide one or more line seals between the surface of the sill and the free end portions of the flexible fins.

3,374,581
NON-CLOGGING TYPE BLAST DEVICE
Robert G. Millhiser, Detroit, and Raymond C. Winger, Livonia, Mich., assignors to Ajen Laboratories, Inc., Livonia, Mich.
Continuation-in-part of application Ser. No. 394,198, Sept. 3, 1964. This application June 14, 1966, Ser. No. 562,420
6 Claims. (Cl. 51—8)

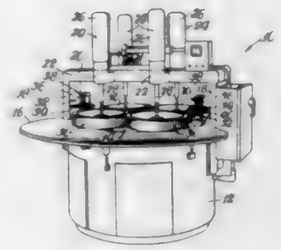
A non-clogging nozzle for liquid grit blasting useful for making minor adjustments in direction of blasts from fixed grit blasting devices and also in converting a spaced

series of blasts into a continuous ribbon blast. In place of the old enclosed nozzles, this novel non-clogging nozzle



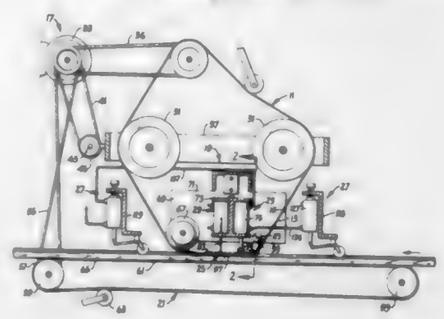
uses an open deflector plate mounted to intersect the liquid grit blast, preferably encroaching on the blast slightly and at an angle of 5° to 15°.

3,374,582
LAPPING MACHINE
Stephen A. Boettcher, Deerfield, Ill., assignor to Speedfam Corporation, a corporation of Illinois
Filed Dec. 8, 1964, Ser. No. 416,825
14 Claims. (Cl. 51—131)



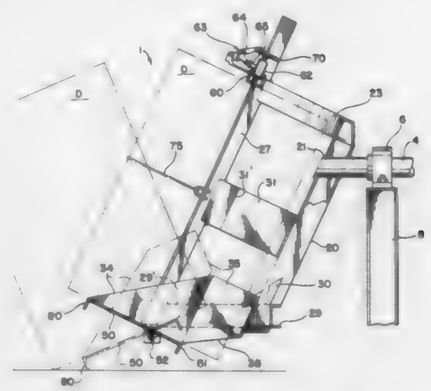
A contour control member positionable with the lower annular surface thereof in engagement with the outer portion of the periphery of a lapping disc between adjacent truing and retaining rings for dressing the lapping surface of the disc.

3,374,583
APPARATUS FOR FINISHING SURFACES
Arno M. Jacobi, Belmont, Calif., assignor to Walter Jacobi & Sons, Inc., Belmont, Calif., a corporation of California
Filed Sept. 20, 1965, Ser. No. 488,375
16 Claims. (Cl. 51—141)



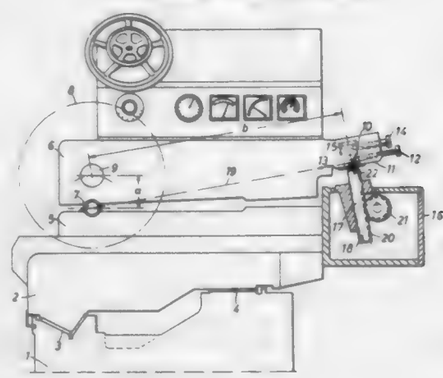
1. Apparatus for finishing surfaces on work pieces comprising a continuous belt having an abrasive surface and a backing surface, means for driving said belt through a work station, means for moving a work piece through said work station with the work piece surface to be finished adjacent said abrasive surface, a backing unit at said work station engaging said backing surface, said backing unit including shaping means for varying the configuration of said belt at said work station, sensing means for sensing the configuration of said work piece surface as the work piece is moved through the apparatus, and actuating means responsive to said sensing means for adjusting said shaping means to cause said belt to assume substantially the same configuration as said work piece surface.

3,374,584
DRUM-TUMBLER HOLDER
Glenn J. Haught, Cuyahoga Falls, Ohio, assignor, by mesne assignments, to U.S. Stoneware Inc., a corporation of Massachusetts
Filed June 30, 1965, Ser. No. 468,350
1 Claim. (Cl. 51—164)



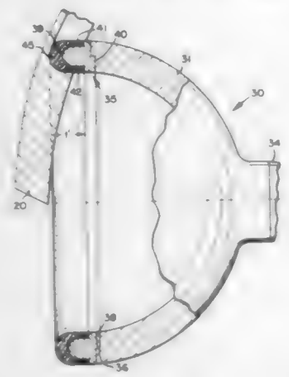
A drum-tumbler holder having a generally hemicylindrical cradle structure tilted in one direction, and a bottom for the holder having a fulcrum pivotally connected to opposite sides of the cradle structure, and two unequal levers extending from the fulcrum, the greater of the levers extending away from the cradle structure so that the bottom, under the influence of gravity, is normally tilted in a direction opposite to the direction in which the cradle structure is tilted.

3,374,585
GRINDING DEVICE
Artur Klein, Austrasse 6a, Netphen, Kreis Siegen, Germany
Filed Feb. 11, 1965, Ser. No. 433,254
Claims priority, application Germany, Feb. 15, 1964, W 36,177/64
4 Claims. (Cl. 51—165)



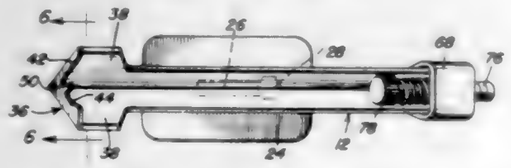
A grinding machine for grinding conical articles is provided with a grinding wheel carrier which is swingable upon an axle parallel to the axis of the workpiece. The rough adjustment is carried out by a shaft while the fine adjustment is carried out by a roller movable relatively to said axis.

3,374,586
LENS-GRINDING WHEEL
Solon Stone, Geneva, N.Y., assignor to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Filed May 3, 1965, Ser. No. 452,575
1 Claim. (Cl. 51—206)



A rotary-type grinding wheel for lenses has an abrasive material sintered around the annular tip portion of the wheel to form an arcuate edge extending on the outside and inside of the wheel for a height greater than the amount of the stock that is to be removed from the lens blank. The abrasive material may be sintered to a metal ring, which is secured to the annular, open end of the wheel.

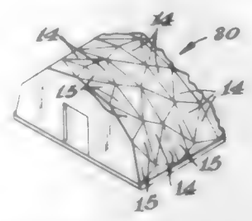
3,374,587
DRILL GRINDING ATTACHMENT
Thomas W. Simpkins, 4605 Leeds St., El Paso, Tex. 79903, and Howard H. Crawford, El Paso, Tex.; said Crawford assignor to said Simpkins
Filed Mar. 16, 1966, Ser. No. 534,894
9 Claims. (Cl. 51—219)



1. A drill grinding attachment comprising an elongated drill receiving trough, said trough having forward and rear ends, a drill guide on the forward end of said trough, said drill guide including an upwardly directed inner edge defined by two generally converging edge portions, an integral upwardly projecting lug positioned substantially at the point of juncture of said edge portions and defining an abutment face at the adjacent end of a first of said edge portions for engagement of the leading edge of a drill thereagainst, the second of said edge portions being above the inner surface of the trough and arcuately concave between said lug and the outer end thereof so as to define a drill edge engaging surface adapted to engage a following edge of different size drills upon the engagement of a leading edge of the corresponding drill against said abutment face.

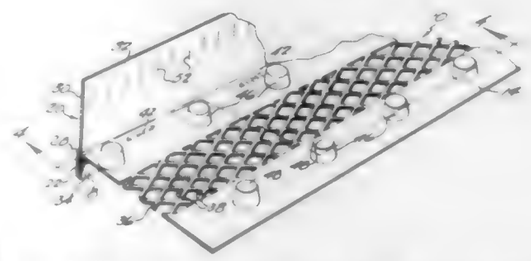
3,374,588
MODULAR, CURVED STRUCTURE AND METHOD OF ASSEMBLY
Turner Alfrey, Jr., and Douglas S. Chisholm, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 30, 1964, Ser. No. 355,715
5 Claims. (Cl. 52—81)

1. A structure comprising a plurality of triangular panels, the triangular panels being of a right unsymmetrical configuration, the structure conforming generally to at least a portion of the cylindrical surface, the structure comprising a plurality of adjacent connected segments prepared from the triangular panels, adjacent segments being composed of triangular panels of opposite hand,



each of the segments comprising panels of like hand wherein panels are joined to similar panels with similar sides common, the hypotenuses of the triangles forming edges of the segments, the edges of the segments being disposed in a generally circumferential manner.

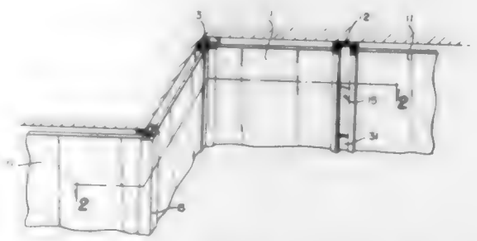
3,374,589
COURSE SPACER AND MORTAR BARRIER
Fred Neal, Jr., Paris, Tex.
(Rte. 2, Box 206, Hallsville, Tex. 75650)
Filed Oct. 12, 1965, Ser. No. 495,076
6 Claims. (Cl. 52—105)



(1) For use in erecting a masonry wall, a course guide comprising: a flat sheet of flexible material; opposed flanges normal to said sheet in opposite directions on the same side of said sheet and rows of spacing means projecting out of said sheet.

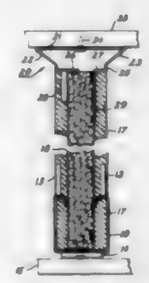
(2) A masonry wall comprising: upper and lower brick courses; a sheet of material positioned between and vertically spacing said courses, said sheet being pervious to mortar, and flanges on said sheet at the rear of said sheet and overlying adjacent courses.

3,374,590
STRUCTURAL WALL MEMBERS
Milton Kessler, 4535 Grove Drive, Youngstown, Ohio 44505
Filed Feb. 26, 1965, Ser. No. 435,439
6 Claims. (Cl. 52—221)



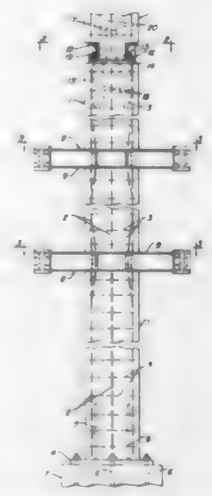
An extruded plastic structural member for retaining and edging wall panels and providing a deep channel between adjacent panels for visual effect and optionally providing concealed ducts for electrical wiring.

3,374,591
RESILIENT PARTITION STRUCTURE
Paul W. Tillisch, George E. Meyer and Rocco Papalia, Antioch, Calif., assignors to Kaiser Gypsum Company, Inc., Oakland, Calif., a corporation of Washington
Continuation of application Ser. No. 247,976, Dec. 28, 1962. This application Jan. 20, 1966, Ser. No. 521,886
9 Claims. (Cl. 52—241)



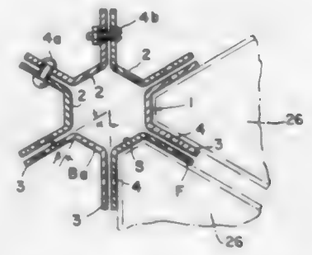
5. A non-loadbearing partition construction comprising a channel ceiling track, a channel floor track vertically yieldably affixed to a floor in vertical alignment with said ceiling track, wall board extending between and supported by said tracks, said ceiling track having a web affixed to a ceiling and a yieldable means adapted to abut the top portion of said wall board and having means to support said wall board in upright position, the bottom portion of said wall board being disposed in said floor track, and a plaster coating disposed on said wall board and maintained out of contact with the interior of said ceiling track and filled into said floor track, said plaster coating on said wall board and in the floor track forming a continuous layer.

3,374,592
PRECAST COLUMN WITH SHEAR-HEAD SECTIONS
David B. Cheskin, 407 S. Dearborn St., Chicago, Ill. 60605
Filed Dec. 24, 1964, Ser. No. 421,000
3 Claims. (Cl. 52—260)



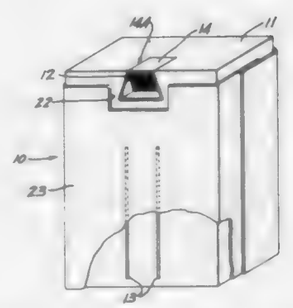
1. A composite precast column with shear-head framing integrated therewith in the casting step, which comprises in combination, a reinforced concrete column section with internally placed longitudinal reinforcing steel and a support-connector means at each end thereof, at least one laterally extending shear-head section spaced along the length of said column section, with each shear-head section comprising at least one laterally projecting steel framing member which is cast into and fixedly connected with the reinforced column section to accommodate shear and bending moments, said steel framing member in turn having a plurality of dowel members projecting therefrom at right angles thereto in two directions and connecting into the body of the column section such that there is a bonding and splicing with said longitudinal steel reinforcing therein, and said steel framing member being positioned to have web portions set back from the periphery of the column to provide thereby a resulting peripheral notched section for at least the depth of said steel framing member entirely around the body of said column at each shear-head section, whereby concrete subsequently being poured around the column over each shear-head section will key into the column periphery at each floor level.

3,374,593
STRUCTURAL ASSEMBLY
Eberhard G. Rensch, Lerchesbergring 24, Frankfurt am Main, Germany
Continuation-in-part of application Ser. No. 309,777, Sept. 18, 1963. This application June 6, 1966, Ser. No. 555,452
Claims priority, application Germany, June 9, 1965, R 40,822; Dec. 21, 1965, R 42,270
5 Claims. (Cl. 52—283)



Structure of the type disclosed in copending application Ser. No. 309,777, with one or more profiled columns supporting a slab composed of triangular plates, the present improvement residing in the provision of a column composed of complementary, rigidly interconnected vertical profile members of constant horizontal cross-section serving as anchorages for the slab plates and for adjoining walls.

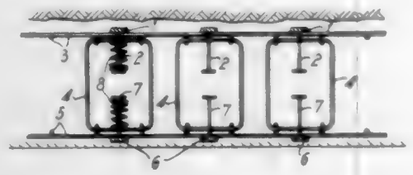
3,374,594
REFRACTORY BRICK FOR USE IN SUSPENDED ROOFS
Carl A. Tate, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 30, 1964, Ser. No. 341,450
2 Claims. (Cl. 52—598)



1. A composite refractory shape comprised of a refractory body having opposed ends and sides extending between the ends, an aperture formed through an intersecting side and end said aperture having a base and sidewalls which converge to form a narrow aperture at one of the ends of said body, a tubular oxidizable metal

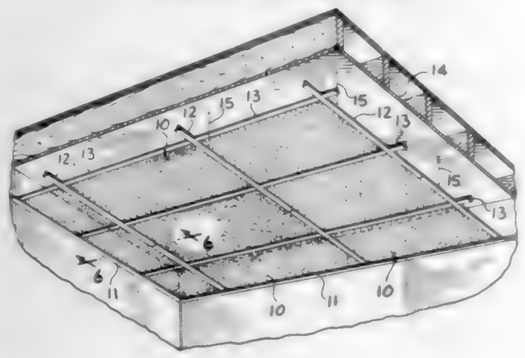
insert of cross-sectional configuration mating the cross-section of said aperture, said insert fixed in said aperture and filling the cross-section thereof, said insert being fixed against upward and downward movement perpendicular to the ends of said body, the said metal insert having at least one planar outer face which is substantially coplanar with the remainder of the end of the shape through which the aperture is formed.

3,374,595
REINFORCED CONCRETE REINFORCEMENT FOR HIGHLY STRESSED STRUCTURAL COMPONENTS
Gerhard Heiwolt, Braunschweig, and Guenter Voss, Wolfenbuttel, Germany, assignors to Salzgitter Industriebau Gesellschaft m.b.H., Salzgitter-Drutte, Germany
Filed Dec. 14, 1965, Ser. No. 513,778
Claims priority, application Germany, Dec. 18, 1964, S 94,695
8 Claims. (Cl. 52—648)



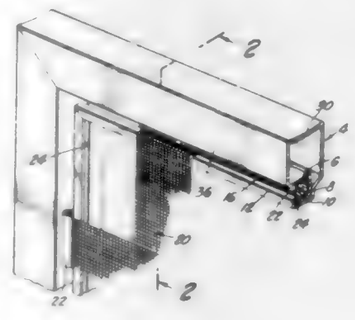
A reinforcement arrangement for concrete bodies, particularly for tunnel arches and the like, comprising in combination, a plurality of longitudinally arrayed outer arched unitary reinforcing elements each provided with inwardly projecting elongated pegs, a plurality of longitudinally arrayed inner arched unitary reinforcing elements each received with spacing within the confines of one of the outer elements and having outwardly projecting elongated pegs, and reinforcing filler means interposed between respective sets composed of an inner and an outer arched element, the pegs meshing with the filler means whereby, when the arrangement is embedded in a body of hardened concrete the pegs interconnect the elements of the sets and the filler means in shear-resistant relationship.

3,374,596
SUSPENDED CEILING SYSTEM
George A. O'Brien and George A. Kochanowski, Chicago, Ill., assignors to Kinkead Industries Incorporated, Chicago, Ill., a corporation of Illinois
Filed May 17, 1965, Ser. No. 456,227
7 Claims. (Cl. 52—664)



An improved frame structure for use in a grid for a suspended ceiling system in which each frame member is provided with a locking tongue projecting from one end of the member and having an aperture near the end of the tongue for forming a vertical locking surface facing rearwardly of the leading edge of the tongue. A pair of opposed longitudinal, vertically spaced tabs project from the vertical fin of the adjacent frame member so as to define a channel for receiving the tongue and holding the tongue firmly against one side of the vertical fin. The tabs are formed from the vertical fin, such as by stamping operation, with the opposed longitudinal edges of the tabs being spaced apart to form a divider web therebetween. One end of the divider web is cut away from the vertical fin so as to form a longitudinal tang between the tabs with an end portion of the tang being bent out of the plane of the fin so as to be biased against the tongue inserted between the tabs. The end of the tang engages the vertical locking surface formed by the aperture in the end portion of the tongue so as to lock the tongue longitudinally and prevent retraction thereof from between the tabs. The entrance end of each of the tabs is beveled longitudinally so as to form a V-shaped mouth for facilitating insertion of the tongue and at the same time strengthening the base portion of the locking and biasing tang.

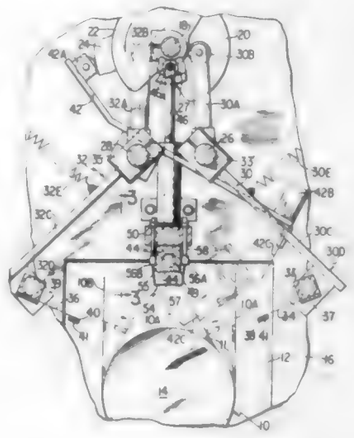
3,374,597
ROLLED METAL SCREEN FRAME
Gary L. Whitener, Long Beach, Calif., assignor to Universal Molding Company, Lynwood, Calif., a corporation of California
Filed Mar. 9, 1965, Ser. No. 438,237
1 Claim. (Cl. 52—738)



1. In a metal screen frame section or the like, a rolled tubular body having a smooth external surface, said body having laterally and thence upwardly extending flanges whose edges terminate in laterally spaced relation to said body to define a spline groove, one flange edge comprising an outer edge portion rolled over the other edge, and terminating in said outer edge portion above the bottom of the spline groove to provide a spline retaining shoulder and a continuous locking groove rolled longitudinally into said first mentioned flange exteriorly of the spline groove and upwardly from the bottom of the spline groove relative to said shoulder and inwardly from said other edge to clamp the rolled over flange edge thereof to said other flange, said face of one flange edge in contact with a face of the other flange edge being knurled along the continuous locking portion provided by said continuous locking groove.

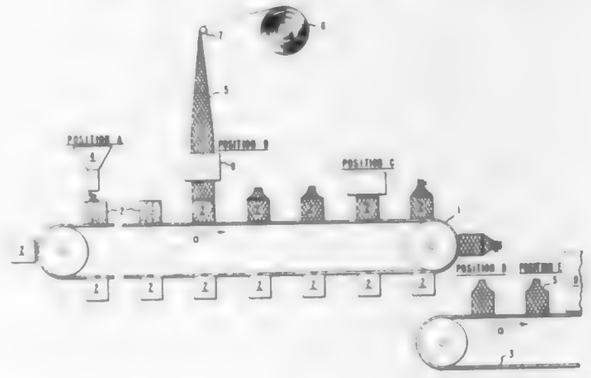
3,374,598
SEAL AND THE METHOD AND APPARATUS FOR MAKING SAME
Miroslav J. Piroutek, Stamford, Conn., assignor, by mesne assignments, to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Nov. 17, 1964, Ser. No. 411,819
10 Claims. (Cl. 53—3)

A seal is made in resilient plastic sheet material held tightly wrapped around articles to be packaged, in regions of plastic material which are unsupported from inside the package, by melt-piercing overlapped edges of the material to leave the edges fastened together by spaced rings of fused plastic. An automatic machine wraps the sheet and holds the overlapped edges of the plastic material



against its resilience while the seal is formed by groups of melt-pierced holes located at positions between the spaced peripheries of the articles in the package.

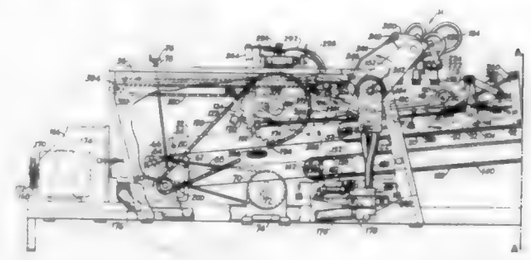
3,374,599
METHOD FOR PACKAGING AND APPARATUS THEREFOR
George Francis Sanders, Grand Island, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 26, 1966, Ser. No. 523,100
6 Claims. (Cl. 53—29)



1. A method for packaging articles in bags formed from a continuous length of tubular netting of thermoplastic material which comprises placing a length of said tubular netting material over a receptacle which contains therewithin the article to be packaged; severing said tubular netting at a point above said receptacle and sealing the end portion of said tubular netting; separating said receptacle from said tubular netting thereby permitting said article to remain in said tubular netting and sealing the open end of said tubular netting thereby to obtain said article in a sealed package of tubular netting of thermoplastic material.

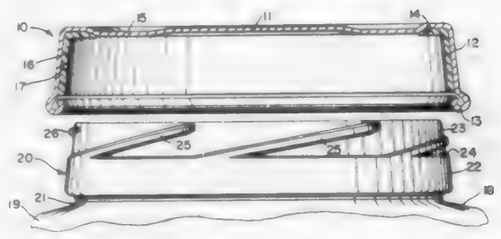
3,374,600
METHOD AND APPARATUS FOR PACKAGING
Robert Ernst Rademacher and Fred Dominic Marasso, Richmond, Va., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Dec. 15, 1964, Ser. No. 418,391
6 Claims. (Cl. 53—35)

1. Apparatus for placing a group of articles in a package, which comprises: first conveyor means for advancing a tray containing group of ariticles to a first station, a second conveyor mounted below and in spaced relationship with said first conveyor, said second conveyor being driven in the direction reverse to that of the first conveyor, an article transfer head mounted adjacent said first station, means mounted on said articles transfer head for engaging and holding articles at said first station, means for advancing a container to a container cradle



mounted at a second station, means connected to said article transfer head operable to transport it from said first station to said second station, means operable to transfer empty trays from said first conveyor to said second conveyor means operable to deactivate said article engaging and holding means at said second station to cause the articles held therein to be inserted in said container.

3,374,601
ROTATABLE CLOSURE
Robert P. White, Winnetka, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 1, 1965, Ser. No. 484,335
3 Claims. (Cl. 53—42)

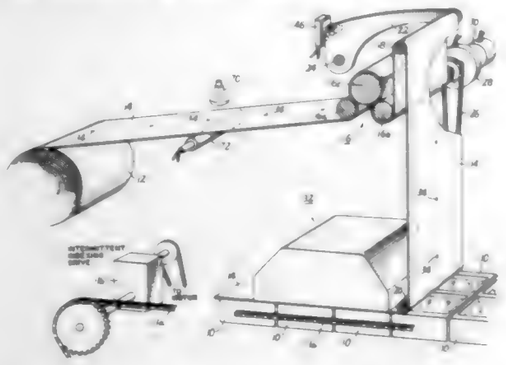


1. The method of capping a container to form threads permitting removal and re-application of said caps, said method comprising the steps of lining a closure shell with a gasket material having sufficient adhesion to preclude tearing away from the shell during cap application and removal, applying said cap over a threaded portion of a container finish with a press-on type motion while simultaneously rotating said shell to shape said gasket material to conform to the threaded portion of said container finish, said gasket material having sufficient toughness at the surface thereof during application to preclude tearing, and curing said shaped gasket material to a hardness whereby it has sufficient rigidity to permit removal of said cap by rotating the same relative to said container while being sufficiently resilient to form a hermetic seal.

3,374,602
INDICIA REGISTRATION METHOD AND APPARATUS
Joel A. Hamilton, Clifton, N.J., assignor to Mahaffy & Harder Engineering Co., Totowa, N.J.
Filed Aug. 18, 1965, Ser. No. 480,739
14 Claims. (Cl. 53—51)

It is difficult to apply a web of cover material that has units of printed matter repeated at uniform points along its length to a series of trays as they index on a packaging line, so that each unit of printed matter on the web

is aligned with a tray. To achieve the desired alignment between tray and cover, the apparatus and method of this patent use a web of cover material on which the length of the units or "repeats" of printed matter is slightly less than the length of a tray. The cover web is fed to the



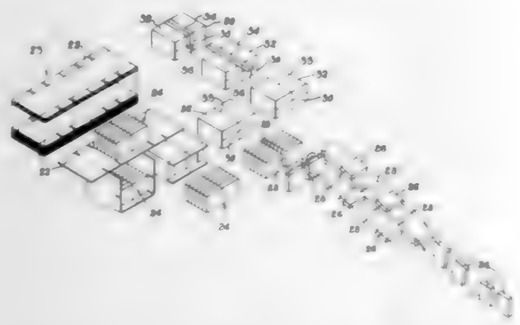
trays in increments of one "repeat" of the printed matter as the trays index. Continued movement of the trays for a short period after feeding of the web has stopped, stretches the increment of web so that it is as long as a tray, thereby aligning the printed matter on the web with the tray.

3,374,603

APPARATUS FOR PACKING AND SEALING CARTONS OF PRODUCT IN A CASE

Joseph A. Miller, Englewood, and Frank A. Kruglinski, North Bergen, N.J., assignors to General Corrugated Machinery Co., Inc., Palisades Park, N.J., a corporation of New Jersey

Filed Oct. 8, 1965, Ser. No. 493,972
9 Claims. (Cl. 53—58)



1. Apparatus for packing and sealing cartons of product in a case which may be opened without damage to the cartons and their contents so as to expose predetermined ends of the cartons when the case is opened comprising in combination:

means for orienting the cartons into a bundle having at least two rows with a predetermined number of cartons in each row so that the carton surfaces, to be exposed, of each of the two rows face each other at a given plane passing between the rows;

means for moving the bundle to a predetermined location on a precut, scored blank having a length between ends equal to the perimeter of the bundle and a width greater than the corresponding width between sides of the bundle;

means for folding the length of the blank completely around the perimeter of the bundle until the ends of the blank abut one another, said predetermined location being such that the ends of the blank are each brought to the given plane passing between the rows;

means for folding the width of the precut, scored blank over the sides of the bundle to complete the case and form the ends thereof;

means for sealing the ends of the case with adhesive; and

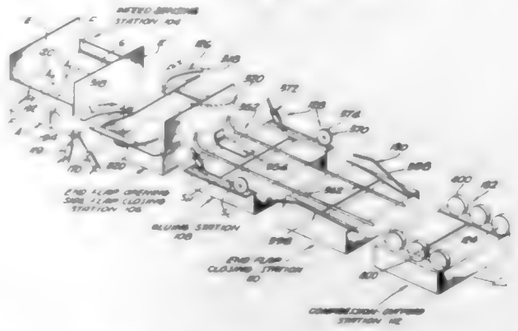
means for sealing at least the top of the formed case over the abutting ends of the blank with an easily removable closure whereby the same may be removed and the portions of the case on each side of the given plane passing between the rows pivoted away from each other to expose the desired surfaces of both rows of cartons.

3,374,604

AUTOMATIC CARTON HANDLING MACHINE

Lawrence C. Roesner, Downey, and Lenard E. Moen, Whittier, Calif., assignors to Precision Produce Specialties, Inc., Los Angeles, Calif., a corporation of California

Filed Dec. 23, 1965, Ser. No. 516,028
34 Claims. (Cl. 53—75)



8. In a machine for closing and sealing cartons each having an open side bounded by hinged, generally erect side and end flaps with outer and inner surfaces adapted to be folded to overlapping closed positions wherein the flaps close said open side and said end flaps overlie said side flaps with their inner surfaces contacting the outer surfaces of said side flaps, the combination comprising:

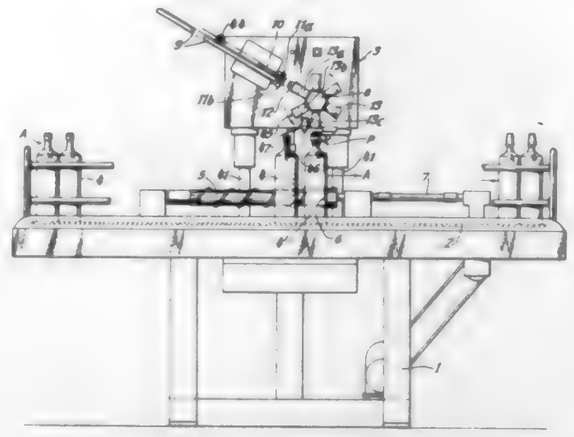
a frame having infeed and outfeed ends, conveyor means on said frame for successively transporting said cartons along said frame from said infeed end to said outfeed end with said side flaps of each carton facing generally lengthwise of said frame, there being a flap folding station along said frame through which each carton travels, power driven cyclically movable flap folding means mounted on said frame within said station and over said conveyor means for successively engaging the end flaps and trailing side flap of each carton traveling through said station in such manner as to initially fold the end flaps of the respective carton laterally outwardly to gluing position wherein the latter flaps are disposed laterally outwardly of the adjacent ends of the side flaps on the respective carton and thereafter fold the trailing side flap of the respective carton forwardly to its closed position over the open side of the carton, side flap closing means mounted on said frame over said conveyor means following said folding means relative to the direction of travel of said cartons along said frame for folding the leading side flap of each carton traveling through said station rearwardly to its closed position over the open side of the respective carton after folding of the end flaps of the respective carton to said gluing positions, end flap closing means on said frame following said folding means for folding said end flaps of each carton to their closed positions of overlapping engagement with the side flaps of the respective carton, and means for driving said conveyor means and folding means in timed relation in such manner as to effect successive movement of said cartons through said station in timed relation to the cyclic movement of said folding means.

3,374,605

APPARATUS FOR AUTOMATICALLY LOCATING CAPSULES ON THE NECKS OF BOTTLES

John S. Satchwell, Coventry, and Norman H. Brashaw, Cheshunt, England, assignors to Betts and Company Limited, London, England, a British company

Filed Dec. 27, 1965, Ser. No. 516,456
Claims priority, application Great Britain, Feb. 4, 1965, 4,829/65
10 Claims. (Cl. 53—307)



1. Apparatus for locating a lead foil capsule on the neck of a bottle comprising:

(a) means down which a stick of inverted capsules can slide by gravity,

(b) a retractable stop which is contacted by and prevents the discharge of the lowermost capsule in said stick,

(c) means for retracting said stop from contact with the lowermost capsule in the stick prior to removal of the lowermost capsule,

(d) an opposed pair of clamping jaws spaced from the retractable stop and having substantially complete semicircular gripping surfaces which in a closed position of the jaws embrace the skirt of the pen-ultimate capsule in the stick,

(e) a plurality of nozzle outlets disposed in spaced relationship around the gripping surface of each jaw along that edge of the jaws closest to the retractable stop,

(f) means for closing the jaws around the skirt of the penultimate capsule,

(g) means for supplying gas under pressure to the nozzle outlets after the penultimate capsule has been gripped by the jaws and when the lowermost capsule is to be removed,

(h) means for receiving a capsule blown from the stick and moving the capsule to a position above a bottle station,

(i) means for moving a bottle into said bottle station, and

(j) means for causing the capsule positioned above the bottle station to fall on to the neck of the bottle.

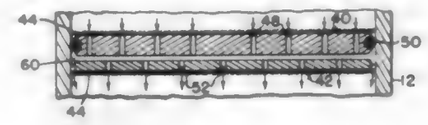
3,374,606

METHOD OF AND APPARATUS FOR CHROMATOGRAPHIC SEPARATIONS

Raymond F. Baddour, Belmont, Mass., assignor, by mesne assignments, to Abcor, Inc., Cambridge, Mass., a corporation of Massachusetts

Continuation-in-part of applications Ser. No. 246,782, Dec. 24, 1962, and Ser. No. 435,649, Feb. 26, 1965. This application Sept. 10, 1965, Ser. No. 491,482
41 Claims. (Cl. 55—67)

A chromatographic column having enhanced resolving power for the separation of gas mixtures is provided by incorporating partition elements having a plurality of flow passages therein such as sieve plates in the column. The partition elements may have separatory packing material on each side or be placed in a close back-to-back



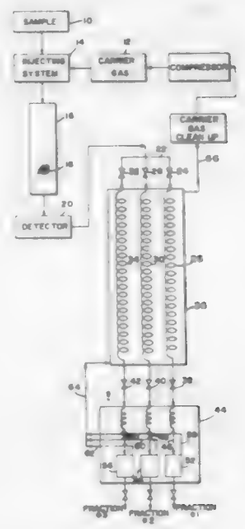
position to define a flat disc-like mixing space between the elements. The partition elements promote radial mixing and lateral flow of the sample and carrier streams in the column.

3,374,607

APPARATUS FOR AND METHOD OF COLLECTING GAS CHROMATOGRAPHIC FRACTIONS

Robert E. Fisher, Allentown, Pa., and James M. Ryan, Weston, and Michael Modell, Brighton, Mass., assignors, by mesne assignments, to Abcor, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Apr. 4, 1966, Ser. No. 540,079
21 Claims. (Cl. 55—67)



A gas chromatographic apparatus and process which includes gradually cooling and condensing a gas effluent stream by the use of a cool fluid stream in a counter-current flow direction and heat exchange relationship by the use of a single or plural zones. A gas effluent stream containing a carrier gas and a gas fraction to be recovered is withdrawn from a chromatographic column and passed to plural and separate heat exchanger and recovery zones. Carrier gas cooled in the recovery zone is recycled in a counter-current direction to the gas effluent stream in the heat exchange zone. The temperature gradient provided in the heat exchange zone by the recycled carrier gas prevents aerosol formation of the gas fraction and efficiently employs the cool carrier gas to condense the gas fraction in the heat exchange zone.

3,374,608

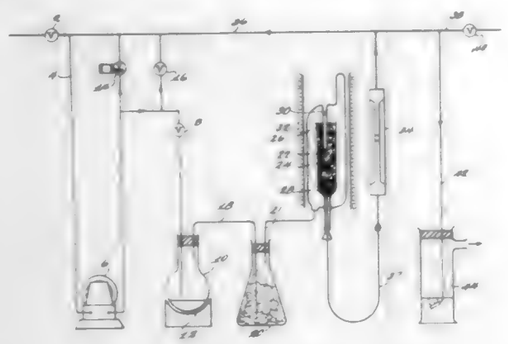
SILVER IMPREGNATED CARBON

Milton Manes, Pittsburgh, Pa., assignor to Pittsburgh Activated Carbon Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 30, 1966, Ser. No. 575,989
6 Claims. (Cl. 55—72)

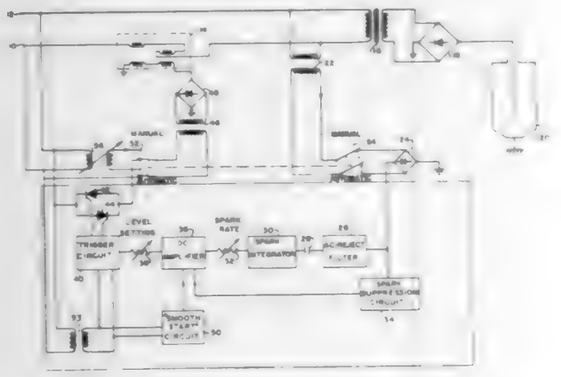
A process for removing mercury from a gas stream contaminated with mercury by passing the gas stream containing mercury over an activated carbon impregnated

with a metallic silver having a crystallite size of not over 250 A. The metallic silver is formed by reducing a silver



thiocyanate complex impregnated on the activated carbon.

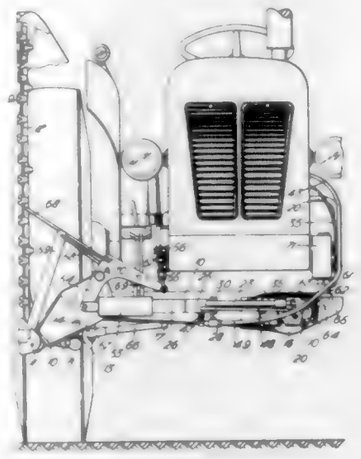
3,374,609
ELECTROSTATIC PRECIPITATOR CONTROL CIRCUIT
Leif Aa. Kide, Goteborg, Sweden, assignor to Aktiebolaget Tudor, Stockholm, Sweden, a corporation of Sweden
Filed Feb. 10, 1965, Ser. No. 431,669
10 Claims. (Cl. 55—105)



An apparatus for stabilizing the operation conditions of an electrostatic precipitator wherein an electrical field is maintained by means of an alternating power source which source is connected to the precipitator through a transformer and a saturable core reactor is connected in series between said power source and the transformer primary winding and a voltage generator is provide to control said saturable core reactor and thereby the input to said transformer, said voltage generator being operatively connected and responsive to flashovers in the precipitator.

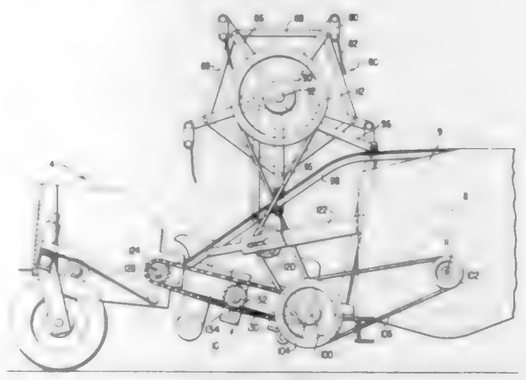
3,374,610
MOWING MACHINES
James Neville Brade, Churchtown, Southport, England, assignor to Harrison, McGregor and Guest Limited
Filed Nov. 16, 1964, Ser. No. 411,481
Claims priority, application Great Britain, Nov. 23, 1963, 46,332/63
12 Claims. (Cl. 56—25)

A tractor-mounted mowing machine having a hydraulic motor for reciprocating the knife-bar and a hydraulic jack for raising the machine out of work is so constructed and arranged that the motor and jack are connectible in series in a pressurized hydraulic circuit to pass the whole hydraulic oil flows through the motor while the machine is being raised and thus minimize the risk of jamming of the knife-bar by crop material during raising of the machine. A valve is provided in the circuit selectively mov-



able between a position to establish the series connection and another position wherein the oil flow bypasses the jack. The jack includes a high pressure relief valve.

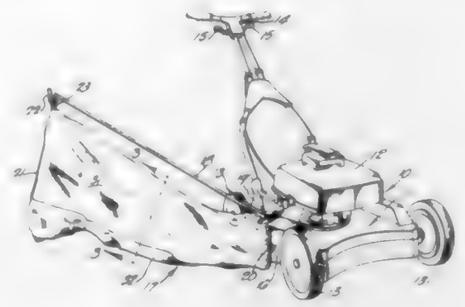
3,374,611
AGRICULTURAL COMBINES
Benjamin M. Grant, Rte. 1, Box 43, Pasco, Wash. 99301
Filed Dec. 4, 1964, Ser. No. 416,082
10 Claims. (Cl. 56—27)



A shaker mechanism for separating rocks and clods of dirt from harvested crops after pickup and before thrashing in a combine. The shaker mechanism includes a screen inclined downwardly towards the thrasher, a plurality of resilient fingers overlying the screen to support the harvested crop above the screen, a vibrating device for vibrating the screen together with the spring fingers, and a horizontal bar positioned across the screen at the thrasher end for preventing large rocks from passing to the thrasher. Preferably a rotatable reel is placed above the screen for advancing crop over the screen to the thrasher.

3,374,612
GRASS CATCHER BAG
Harold Leader, Birmingham, Ala., assignor to Allied Flexible Products Inc., Birmingham, Ala.
Filed July 20, 1965, Ser. No. 473,309
3 Claims. (Cl. 56—202)

1. As a new article of manufacture, a grass catcher bag having an integral closed end, the other end being open and adapted to be attached to a mower discharge duct and a plastic bottom portion, said bag having a tapered formation so that it is wider at the open end than



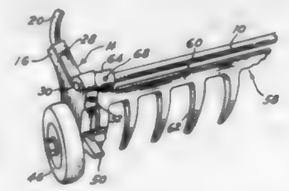
it is at the closed end, said bag having only one longitudinal seam on the upper portion thereof opposite the plastic bottom portion.

3,374,613
FRUIT PICKER
Samuel A. McDonald, 626 S. Banana River Drive, Merritt Island, Fla. 32952
Filed July 21, 1965, Ser. No. 473,618
13 Claims. (Cl. 56—334)

1. A device for picking fruit by severing the stem thereof comprising an elongated tube, handle means at one end of the tube, a pair of pivoting, normally open, cutting jaws mounted over the other end, opposite said one end of the tube, and actuating means for said pair of jaws including electric actuating means mechanically connected to said jaws, electric circuit means for energizing said electric actuating means, and a normally open contact switch for closing said circuit means, thereby energizing said electric circuit means, said contact switch positioned adjacent said jaws so that an individual fruit may pass between the jaws when open, and press against said switch to close said circuit, thereby causing said jaws to be closed to sever said individual fruit from its stem.

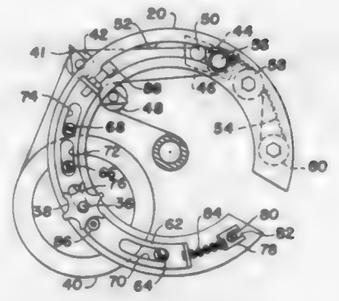
3,374,614
SELF-CLEANING HAND RAKE
Louis F. Dacheux, Jr., 50 Locust Lane E., York, Pa. 17403
Filed Oct. 20, 1965, Ser. No. 498,279
6 Claims. (Cl. 56—400.2)

1. A self-cleaning hand rake comprising in combination, a transverse spacing member, a pair of complementary brackets respectively connected to the opposite ends of said spacing member and having depending portions thereon, a handle, a connecting yoke connected to one end of said handle and having a pair of legs projecting forwardly therefrom and spaced similarly to said brackets, means connecting the forward ends of said legs respectively to said brackets, said depending portions of said brackets having slots extending substantially perpendicularly to the plane of said connecting yoke, trunnion members extending through said slots for adjustable positioning longitudinally thereof and respectively extending outwardly in opposite directions from said brackets, supporting wheels rotatably supported upon said trunnion members, a rake element having a longitudinal bar and a plurality of spaced tines projecting transversely therefrom, bearings connected to said longitudinal bar of said rake



element adjacent opposite ends thereof, said bearings being mounted rotatably on said spacing member adjacent said brackets and the endmost tines of said rake element also being disposed adjacent said brackets, said wheels supporting said brackets and rake element in desired vertical position relative to the ground, and stop members fixed to and projecting inwardly from the lower extremities of said depending portions of said brackets for engagement by the lower portions of the endmost tines of said rake element to maintain said rake element in operative position substantially perpendicular to the handle when raking toward the operator and said bearings permitting said rake element to move rearwardly away from said stops and toward the plane of said connecting yoke when the rake is being pushed away from the operator but gravity serving to restore the rake element to said operative position when the rake is next pulled toward the operator.

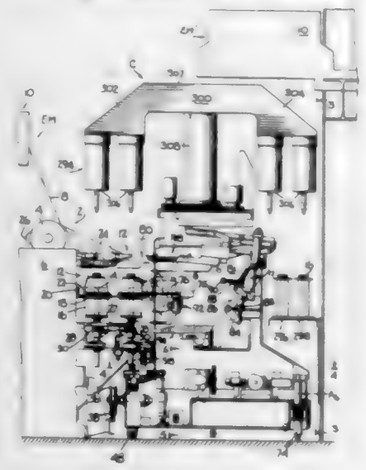
3,374,615
TAPE WRAPPING MACHINE
Joseph Evanicsko, Jr., Spanish Villa R.D. 2, Jeannette, Pa. 15644
Filed June 8, 1966, Ser. No. 556,171
10 Claims. (Cl. 57—10)



1. Apparatus for wrapping spooled material on an elongated object comprising a frame, a circular yoke member rotatably mounted on said frame, means for mounting a spool of said spooled material on said rotatable yoke member, material take-up means carried on said rotatable yoke member for storing a length of material unwrapped from the spool and supplying it continuously to said elongated object, means for rotatably driving said

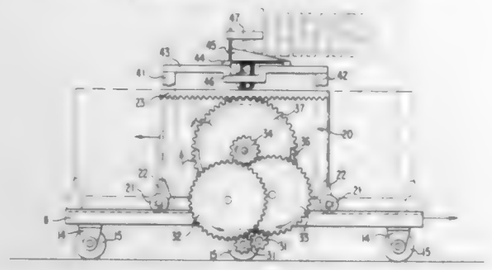
yoke member to wrap said stored material on said elongated object, means for incrementally supplying material from said spool to said take-up means and including detent means for selectively permitting and preventing rotation of said spool, and a slide mounted on said yoke member and movable under the tension of material being wrapped onto said elongated object for actuating said detent means to permit rotation of the spool only when the length of material stored by said take-up means is less than a predetermined length.

3,374,616
DOFFING MACHINE
William P. Hidden, Wenham, and Gregory C. Kekopoulos, Ipswich, Mass., assignors, by mesne assignments, to Celanese Corporation, a corporation of Delaware
Filed Sept. 30, 1965, Ser. No. 491,688
66 Claims. (Cl. 57—53)



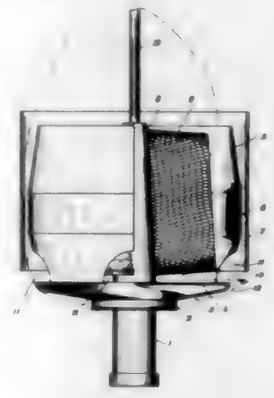
1. A doffing machine for operating sequentially at successive winding stations of a multistation winding machine at each station of which a strand is wound onto a package while being traversed along the length of said package by traversing means moving back and forth along the package, said doffing machine being movable from winding station to winding station during its sequential operation, means, carried by said doffing machine, for performing at least one portion of a package doffing cycle while said traversing means continues its back-and-forth movement, and means responsive to the position of the traversing means at a winding station for initiating operation at said station of said doff-performing means.

3,374,617
VEHICLE FOR DOFFING AND COLLECTING BOBBINS FROM A SPINNING FRAME
Morris M. Bryan, Jr., Jefferson, Ga., assignor to The Jefferson Mills, Jefferson, Ga., a corporation of Georgia
Filed Mar. 4, 1966, Ser. No. 531,869
10 Claims. (Cl. 57—53)



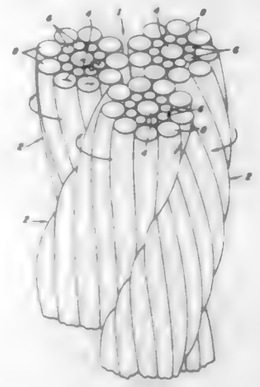
Disclosed herein is an apparatus for doffing and collecting bobbins from a spinning frame which includes a movable inclined plane having an edge that engages the lower edges of the bobbins so as to move each bobbin upwardly as the bobbin slides along the edge between a lower portion and an upper portion by that vertical motion required to disengage the bobbin from a spindle and which includes a bin simultaneously movable with and relative to the inclined plane. The motion of the bin relative to the inclined plane serves to distribute bobbins along the length of the bin even as the bin moves with the inclined plane along a spinning frame.

3,374,618
PROTECTIVE POT FOR TWO-FOR-ONE TWISTING SPINDLES
Gustav Franzen, Neersen, near Krefeld, Germany, assignor to Palitex Project-Company G.m.b.H., Krefeld, Germany
Filed Apr. 27, 1967, Ser. No. 634,307
Claims priority, application Germany, May 6, 1966, P 39,382; Apr. 13, 1967, P 41,878
4 Claims. (Cl. 57—56)



The present invention relates to a protective pot for two-for-one twisting spindles, in which the pot comprises a bottom portion and a tubular mantle portion which latter adjacent said bottom portion is provided with passage means in which, in view of the rotation of the spindle rotor, a suction is created for withdrawing lint and similar deposits from the bottom of the protective pot.

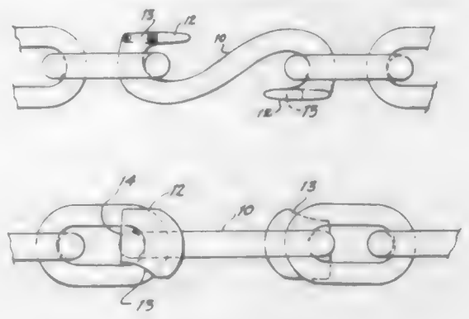
3,374,619
TORQUE BALANCED ROPE
William E. Adams, Hamden, and Wilbert A. Lucht, Orange, Conn., assignors to United States Steel Corporation, a corporation of Delaware
Filed Apr. 27, 1966, Ser. No. 545,726
9 Claims. (Cl. 57—148)



1. A torque balanced regular lay rope comprising between three and six strands spiraled together, the angle of lay of the outer wires in each strand being at least

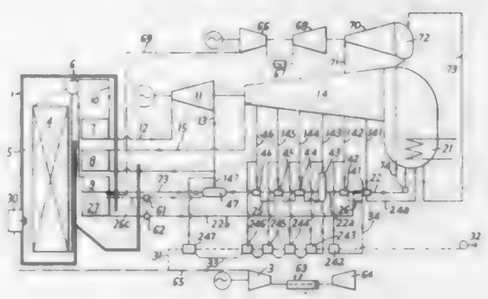
1¾ times that of the angle of lay of the strands in the rope, the torque exerted by the rope being approximately equal to the torque exerted by the strands.

3,374,620
S-SHAPED CONNECTOR DEVICE
Roger L. Gower, P.O. Box 65, Canaan, Maine 04924
Filed June 5, 1967, Ser. No. 643,445
2 Claims. (Cl. 59—93)



The present invention relates to weldless connector means for chain and cable assemblies.

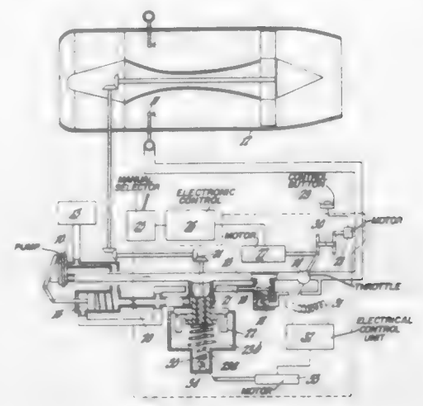
3,374,621
GAS TURBINE AUXILIARY FOR STEAM POWER PLANTS
Pierre Henri Pacault, Ville d'Avray, and Paul Cosar, Paris, France, assignors to Societe Francaise des Constructions Babcock & Wilcox, Paris, France, a corporation of France
Filed Jan. 24, 1966, Ser. No. 522,589
Claims priority, application France, Jan. 26, 1965, 3,289
6 Claims. (Cl. 60—39.18)



The invention embodies means for more economically utilizing, in a steam power plant, the hot gas output of turbine auxiliaries. The hot exhaust of the auxiliary is used to heat feed water and to supply oxygen to the combustion chamber of the boiler. The use of one or two of such auxiliaries is described. As the exhaust gases of the auxiliary increase, the amount of steam required by the economizer and the in-take air heaters is increasingly diminished, freeing such steam for production of power.

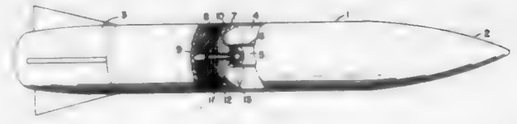
3,374,622
FUEL SYSTEMS FOR GAS TURBINE ENGINES
Thomas Charles Yates, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed June 9, 1966, Ser. No. 556,442
2 Claims. (Cl. 60—39.28)

A fuel system for a gas turbine engine having a throttle arranged on the downstream side of a fuel pump and an engine speed reponsive governor for protecting the engine from overspeeding by limiting the amount of fuel delivered. A main manually operable power means for varying the throttle setting and an auxiliary manually operable power means for varying the throttle setting due to failure of the main power means are provided. Also



included are means energized when the auxiliary power means is energized and responsive to changes in the throttle setting and arranged to modify the response of the governor to engine speed.

3,374,623
METHOD OF OPERATING A LIQUID OXIDIZER FEED PISTON
Billy L. Crosswhite, Decatur, Ala., and John F. Kinney, Atlanta, Ga., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Nov. 16, 1965, Ser. No. 508,175
4 Claims. (Cl. 60—39.48)

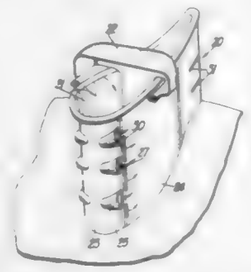


A fuel-rich gas-driven piston for feeding liquid oxidizer in a rocket propulsion system is improved by providing in the pressure chamber behind the piston a volatile or thermally decomposable material which releases an inert gas at a temperature of about 200 to 1000° F. The inert gas, which is released upon contact with the hot, fuel-rich pressurizing gas mixture, blankets the chamber and decreases the intensity of reaction of the fuel-rich gas with small amounts of oxidizer in the chamber. The temperature increase due to this reaction is minimized, and the possibility of an explosive reaction is avoided.

3,374,624
GAS TURBINE ENGINE COMBUSTION EQUIPMENT
John Frederick Coplin, Littleover, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Aug. 29, 1966, Ser. No. 575,844
Claims priority, application Great Britain, Sept. 9, 1965, 38,604/65
3 Claims. (Cl. 60—39.65)

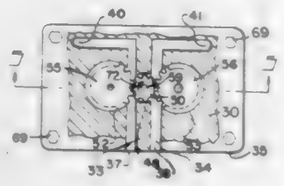
The invention concerns a gas turbine combustion chamber having a flame tube, a plurality of axially relatively long nozzle guide vanes mounted within and extending radially completely across the flame tube. Each nozzle

guide vane is hollow and is arranged to receive dilution air. Adjacent the leading edge of each guide vane a plurality of raised integral baffles are provided which serve



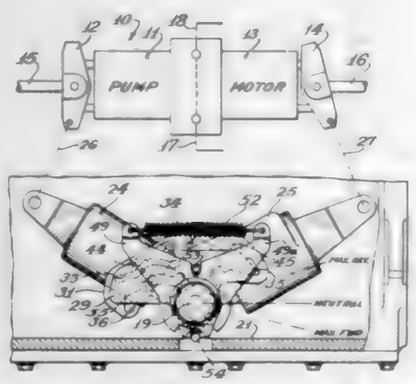
to deflect dilution air non-axially from the interior of the nozzle guide vane via apertures provided under each baffle.

3,374,625
VALVELESS HYDRAULIC ACTUATING UNITS
Whitfield M. P. Stuart, 5910 Charles St., North Burnaby, British Columbia, Canada
Filed Oct. 23, 1965, Ser. No. 503,445
8 Claims. (Cl. 60—52)



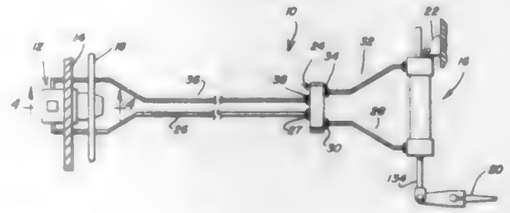
A hydraulic actuating unit particularly for use in the servo cylinder field having two independent passages therein with first and second gear means associated with said passages and operable in unison selectively to direct fluid in either direction through one passage while at the same time directing fluid through the other passage in the opposite direction.

3,374,626
CONSTANT TORQUE CENTERING DEVICE FOR HYDROSTATIC TRANSMISSION CONTROL
Frank R. Catuara, Chicago Ridge, Donald W. Moyer, Downers Grove, and Pierce F. Richardson, Hinsdale, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,611
10 Claims. (Cl. 60—53)



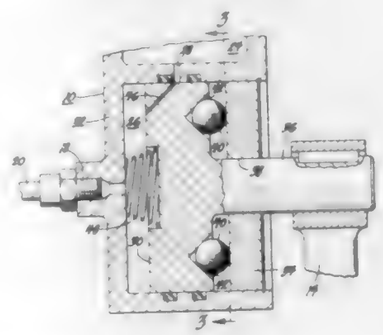
1. In a reversible hydrostatic transmission, a reversible variable displacement swash plate pump, a reversible variable displacement swash plate motor, cam plate means pivotally movable in opposite directions from a neutral center position and having separate portions thereon for independently controlling displacement of the pump and displacement of the motor on movement in either direction from the neutral center position, actuating means connected to said cam plate means and operable upon application of an external force for pivoting said cam plate means in opposite directions from a neutral center position, lever means pivotally mounted for movement in opposite directions from a neutral center position and engageable by said cam plate means for selective movement in opposite directions therewith, resilient means connected to and reactive upon said lever means for normally urging the latter means toward a neutral center position and operative upon release of the external actuating force for urging said cam plate means to a neutral center position.

3,374,627
HYDRAULIC REMOTE STEERING CONTROL
Carl G. Hebel, 390 Jefferson Ave., Haworth, N.J. 07641; James C. Herman, 146 Central Ave., Bogota, N.J. 07603; and Louis Rossi, 41 Washington Ave., Hillsdale, N.J. 07642
Filed Nov. 3, 1965, Ser. No. 506,253
10 Claims. (Cl. 60—54.5)



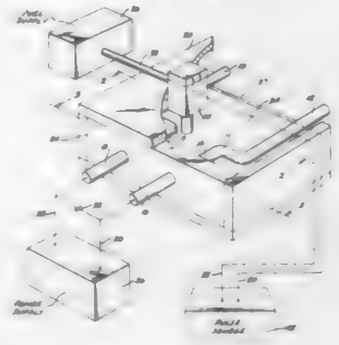
A master pump unit is operated to displace liquid through a closed fluid circuit for remote control of fluid operated slave units. The pump unit is of the positive displacement type operative to charge the fluid circuit with liquid from a reservoir as well as to purge air from the circuit.

3,374,628
BALL AND RAMP TYPE MASTER CYLINDER
Gerald B. Jacoby and Frank W. Brooks, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,300
1 Claim. (Cl. 60—54.6)



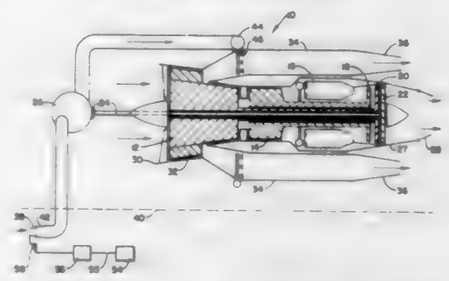
This invention teaches a master cylinder for a vehicle braking system in which an actuator is rotated along the longitudinal axis of the piston in the master cylinder. This rotational movement generated in the piston is converted to a linear movement of the piston along its longitudinal axis by means of balls positioned in tear drop shaped ramps on the piston acting against a stator wall to advance the piston when it is rotated.

3,374,629
HIGH EFFICIENCY PARALLEL RAIL ACCELERATOR
Roland A. Boucher, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,550
6 Claims. (Cl. 60—202)



6. A propulsion device comprising
first and second conductors each having first and second ends and positioned substantially parallel to each other along an axis with a space therebetween over the majority of the length thereof and a substantially smaller space over portions thereof at said first ends,
a power supply including a storage capacitor coupled to the first ends of said conductors,
a source of conductable gas positioned between said first and second conductors at said smaller space to supply said gas thereto for being ionized into current conductive plasma,
and an enclosure of magnetic material positioned around said first and second conductors and extending in a direction parallel to said axis for establishing magnetic flux paths through said spaces, said magnetic material having a sufficiently low reluctance, hysteresis loss and eddy current loss that magnetic fields are provided through said magnetic flux paths, whereby said gas is injected into said smaller space to conduct current through said rails and develop a magnetic field therebetween, said current flowing through said gas reacting with said magnetic field to force said gas to the second ends of said conductors while applying an oppositely directed force to said first and second conductors along said axis.

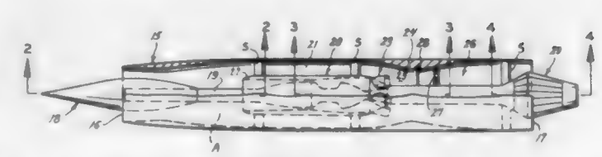
3,374,630
MARINE PROPULSION SYSTEM
William R. Davison, Wapping, and Choate A. Brown, Vernon, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,862
8 Claims. (Cl. 60—226)



1. A propulsion system for propelling a marine vehicle through water including:
air stream propulsive duct means mounted on the vehicle to be propelled;
exhaust nozzle means at the discharge end of said propulsive duct;
engine means for generating an airflow stream through said duct means and said exhaust nozzle means for the generation of a propulsive stream;
water intake means for inducting water into the propulsive system; and
water delivery means connected from said water intake means to said duct means upstream of said exhaust nozzle means for delivering water to said duct means for injecting into and mixing with said airflow stream in said duct means to produce a mixed stream of air and water for discharge through said exhaust nozzle.

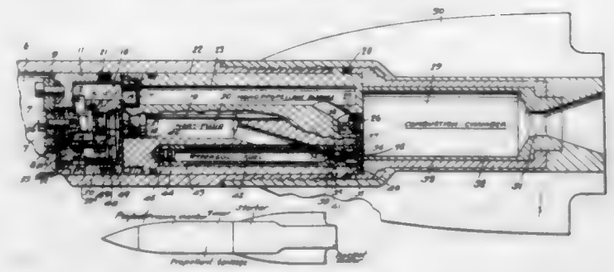
5. A propulsion system as in claim 1 wherein:
said engine means is a bypass turbofan gas turbine engine;
said bypass turbofan gas turbine engine having a main engine combustion gas passage for discharging combustion gases from the turbine of said gas turbine engine; and wherein
said duct means is a bypass airflow passage from the fan of said turbofan engine to said exhaust nozzle means at the discharge end of said duct means, said bypass airflow passage being separate from said main engine combustion gas passage.

3,374,631
COMBINATION SUBSONIC AND SUPERSONIC PROPULSION SYSTEM AND APPARATUS
Marvin D. Marks, Hazelwood, Mo., assignor to McDonnell Aircraft Corporation, St. Louis, Mo., a corporation of Maryland
Filed Aug. 16, 1965, Ser. No. 480,045
8 Claims. (Cl. 60—244)



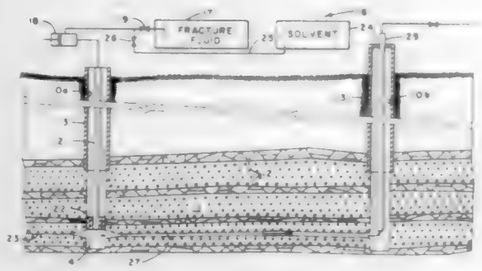
A combination propulsion apparatus of a turbojet engine positioned in axial alignment with a ramjet propulsion casing such that both engine and ramjet are able to operate together, and including a spin-jet thrust device driven by the exhaust gas from the turbojet engine for augmenting the overall thrust developed by the combined apparatus.

3,374,632
LIQUID PROPELLANT ROCKET
William F. Donovan, Aberdeen, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 23, 1965, Ser. No. 510,157
6 Claims. (Cl. 60—259)



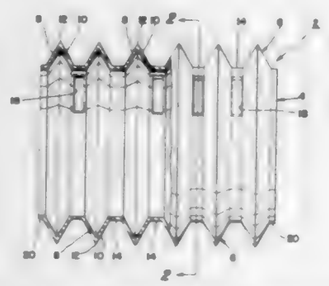
The rocket-projectile is fired from a gun and inertia during acceleration sets a timer into operation. After a pre-determined time-delay a monopropellant from cavity **6** and a hypergolic fuel from cavity **42** are forced into combustion chamber **29** where ignition and burning occur to generate thrust.

3,374,633
UNDERGROUND STORAGE AND METHOD OF FORMING THE SAME
Carl T. Brandt, Tulsa, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed June 10, 1964, Ser. No. 374,060
16 Claims. (Cl. 61—.5)



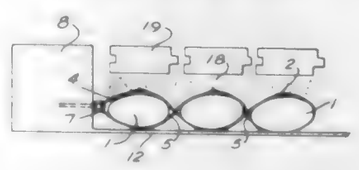
1. The method of forming an underground cavity in a soluble formation using a first and a second bore hole which comprises the steps of:
- contacting a portion of said formation adjacent said first bore hole with a fluid which is a nonsolvent for the material of the formation;
- increasing the pressure of said nonsolvent fluid until said formation is fractured in the direction of said second bore hole;
- continuing to inject a fluid which is a nonsolvent for the material of the formation into the formation to complete a fracture between said second and first bore holes;
- circulating a fluid which is a solvent for the material of the formation between said bore holes through said fracture, whereby a portion of the formation adjacent the fracture is removed to form a chamber and removing said solvent containing material of the formation from one of said bore holes.

3,374,634
CORRUGATED TUBING STRUCTURE
Helmut P. Fochler, Chagrin Falls, Ohio, assignor, by mesne assignments, to Continental Oil Company, a corporation of Delaware
Filed June 15, 1964, Ser. No. 374,902
5 Claims. (Cl. 61—10)



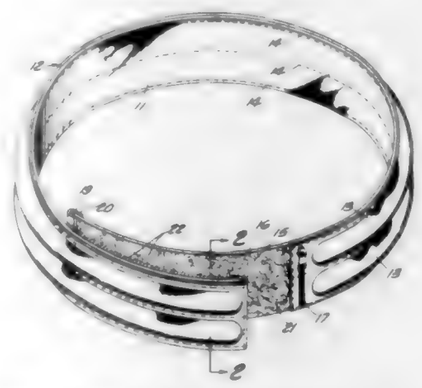
1. A flexible, high strength tubing product for use in the drainage and conveyance of fluid materials beneath the surface of the ground or the like, said tubing product comprising an elongated, generally cylindrical tubing member made from a polymeric material, said tubing member including a plurality of radially symmetrical imperforate corrugations, each corrugation extending continuously circumferentially in substantially a plane perpendicular to the longitudinal axis of said members, said corrugations being in equally spaced relation longitudinally along the length of said member, said corrugations each including generally flat side wall which converge upwardly into one another in a direction away from the longitudinal central axis of the tubing member to define a generally triangular configuration in cross-section, the side walls of each of said corrugations being connected circumferentially together by trough portions which extend generally planar in section parallel to the longitudinal central axis of the tubing member, said portions being imperforate walls on at least the lower half of the tubing member and at least two parallel rows of spaced fluid transmitting openings disposed only in an upper half of the tubing member and extending longitudinally along the length of the tubing member, said openings extending through said trough portions only for draining and conveying fluid materials through the tubing member.

3,374,635
BAGS FOR USE IN REVETMENT STRUCTURES
Horace C. Crandall, Reading, Mass.
(35 Middlesex Road, Waltham, Mass. 02154)
Filed June 29, 1966, Ser. No. 562,449
4 Claims. (Cl. 61—38)



This invention relates to revetment structures, and particularly to a sandbag or cranion with an integral, longitudinal lip of unique construction utilized with cross lacing to form a flexible, erosion resistant covering therefor.

3,374,636
DIVER'S WEIGHT BELT
Daniel F. Mason, 6110 N. Vineland, Apt. 3, North Hollywood, Calif. 91606
Filed Oct. 22, 1965, Ser. No. 501,792
1 Claim. (Cl. 61—70)

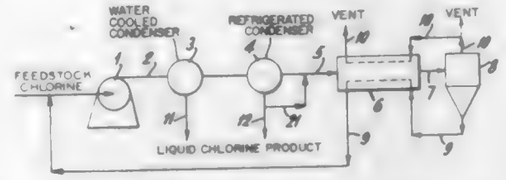


A weight carrying belt for use by divers having tubular compartments extending the length of the belt to contain lead shot so that the weight is uniformly distributed about the diver's body and wherein the belt is made of a resilient material so that it more readily conforms to the body of the wearer.

3,374,637
RECOVERY OF CHLORINE
Carroll J. Wenzke, Peekskill, N.Y., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,345
10 Claims. (Cl. 62—23)

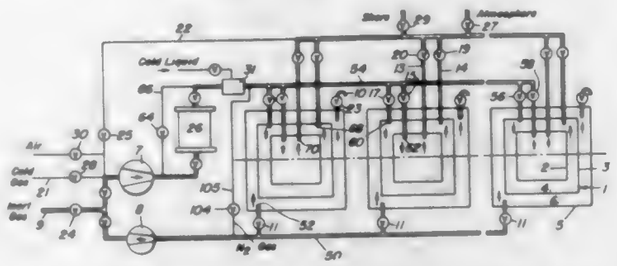
A process for separating chlorine from a mixture of chlorine and inert gases (inerts) in which said mixture is compressed to between 3 and 15 atmospheres and

cooled to produce one stream containing liquid chlorine which is recovered, and a second stream containing chlorine together with substantially all of the inerts. The second stream of chlorine and inerts is refrigerated to a temperature of at least −80° F. to liquify chlorine and produce a mixture of liquid chlorine and gases which is separated into two fractions. The first fraction con-



tains substantially all of the liquid chlorine and a minor portion, e.g., 25% of the inerts, and a second fraction containing a major portion of said inerts. The first fraction is then volatilized in heat exchange relationship to the hereinbefore defined second stream of chlorine and inerts being refrigerated to provide the necessary refrigeration to lower the temperature of said compressed mixture to at least −80° F.

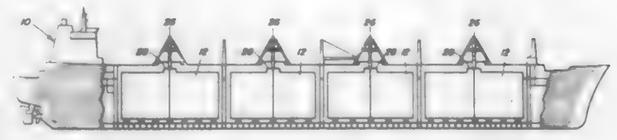
3,374,638
SYSTEM FOR COOLING, PURGING AND WARMING LIQUEFIED GAS STORAGE TANKS AND FOR CONTROLLING THE BOIL-OFF RATE OF CARGO THEREIN
Norman K. Basile, Bronx, and Donald R. Yearwood, Brooklyn, N.Y., assignors to John J. McMullen, Montclair, N.J.
Filed Apr. 19, 1966, Ser. No. 543,602
14 Claims. (Cl. 62—45)



A liquefied gas storage tank system including inner and outer tanks and a spaced supporting structure and a supply header and distribution piping system for uniformly introducing inert purified flue gas or heated or cooled cargo gas for warming or cooling the tank walls, and a return header system arranged in the void space, outer tank space and inner tank to remove and bleed displaced gas therefrom or recirculate the same through heating or cooling means back to those spaces. The system warms and cools the tanks by effecting novel methods without over-stressing the tank structure and controls the boil-off rate within the inner tank by circulating warmed cargo gas within the outer tank space or returning warmed cargo gas back to the inner tank.

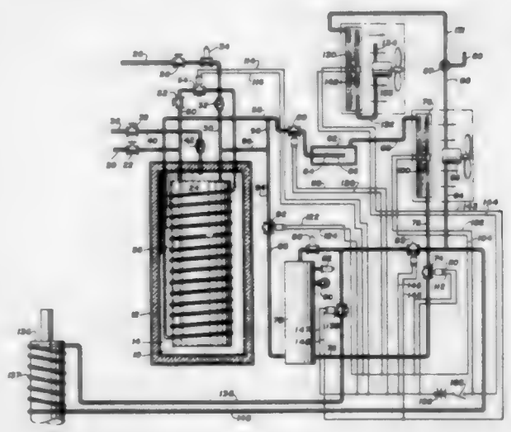
3,374,639
LEAK DETECTION AND PRESSURE RELIEF SYSTEM FOR INSULATED LIQUEFIED GAS STORAGE TANKS
Charles A. Burke and John E. Gale, Staten Island, and Norman K. Basile, Bronx, N.Y., assignors to John J. McMullen, Montclair, N.J.
Filed Oct. 25, 1966, Ser. No. 589,360
13 Claims. (Cl. 62—45)

A tank for storing liquefied gas or the like at about ambient pressure including an outer coating of thermal insulation in which gas conveying grooves are formed against the outer surface of the tank. The insulation is gas impervious. In the event of leakage through the tank wall, vapors are conveyed through the insulation grooves to various header grooves and thereafter conveyed away



from the tank so as to prevent pressure buildup behind the insulation and resulting damage thereto. A gas analyzer is provided to detect the gas within the grooves so that if cargo gas appears, a tank leak condition is indicated.

3,374,640
LIQUID GAS REFRIGERATION SYSTEM
Harold L. Boese, Duncanville, Tex., assignor to Boese Corporation, Dallas, Tex., a corporation of Texas
Filed Jan. 12, 1966, Ser. No. 520,254
22 Claims. (Cl. 62—52)

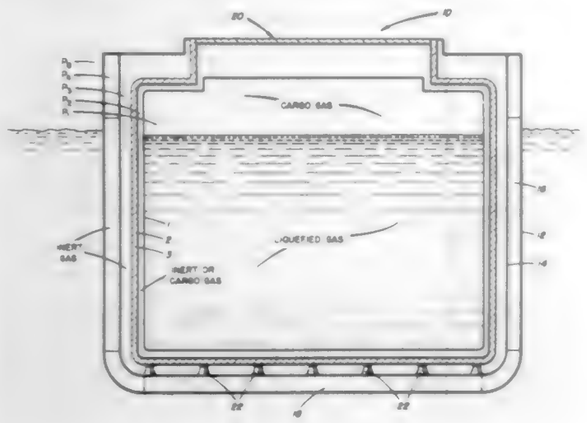


This invention relates to a refrigeration system utilizing a liquid gas as a cold reservoir. A vaporizer is employed to convert the liquid gas to a vapor in which form it is passed through a set of cooling coils across which a ventilator forces a flow of air. The vaporizer is disposed remote from the air flow to prevent erratic operation, and in a preferred embodiment, the volumes of the vaporizer and cooling coils are substantially equal to equalize the vapor pressures within the system.

3,374,641
ARRANGEMENT FOR PROTECTING LIQUEFIED GAS TRANSPORTING VEHICLES
Ralph A. Corvino, Spring Valley, and Norman K. Basile, Bronx, N.Y., assignors to John J. McMullen, Montclair, N.J.
Filed Apr. 25, 1966, Ser. No. 544,979
3 Claims. (Cl. 62—55)

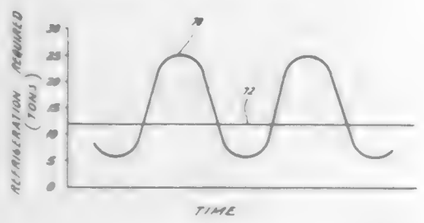
A liquefied gas tanker including free standing double wall tanks. For the first time, the invention provides inert gas within the wing tanks so that they can be pressurized to greater than ambient pressure insuring in the case of collision that gas will migrate outward away from the vessel instead of permitting a rush of air inward to within the ship. Further protection is provided by a pres-

sure gradient increasing from the wing tanks toward the cargo gas within the inner tank also to insure that



the passage of gas is from inward toward the ambient in the case of leaks or collision.

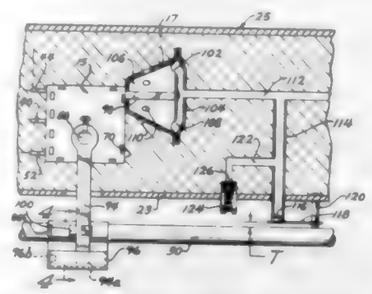
3,374,642
REFRIGERATION METHOD AND APPARATUS FOR CYCLICAL REQUIREMENTS
Robert E. McMinn, Oklahoma City, Okla., assignor to Black, Sivalls & Bryson, Inc., Kansas City, Mo., a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,387
18 Claims. (Cl. 62—115)



The present invention is directed to an improvement in refrigeration units and more particularly an improvement in such units used to meet cyclical requirements. The present invention utilizes a portion of the substance cooled by the unit during minimum requirement periods to supercool the refrigerant in the unit; thereby giving this refrigerant sensible heat capacity or additional sensible heat capacity, as the case may be, in addition to its latent heat capacity. The invention then utilizes this super-cooled refrigerant during periods of maximum requirement, the cooling capacity provided by the refrigeration unit alone being insufficient to cool the substance during these maximum requirement periods. The added sensible heat capacity, however, provides the necessary additional cooling power.

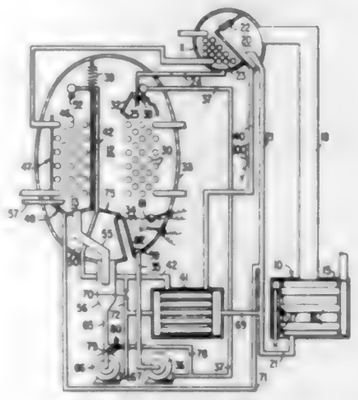
3,374,643
DEFROSTER CONTROL
Robert H. Thorner, 8750–F W. Chicago Blvd., Detroit, Mich. 48204
Application Feb. 3, 1964, Ser. No. 342,216, now Patent No. 3,321,928, dated May 30, 1967, which is a continuation of application Ser. No. 43,825, July 19, 1960. Divided and this application Oct. 24, 1966, Ser. No. 588,915
30 Claims. (Cl. 62—140)

The main disclosure in this patent comprises a fluid (air) pressure circuit including frost-sensing valve means mounted a predetermined distance from a cooling surface corresponding to the thickness of frost formed on the cooling surface and also includes a pressure-responsive member for operating the control means (such as a switch) for regulating defrost heat, and further includes means to periodically produce pulses of pressure in the circuit. When no frost exists on the cooling surface, the sensing valve can open as a result of the pressure pulses



to dissipate pressure in the circuit so the switch cannot be operated. When frost forms to the predetermined thickness, the sensing valve is blocked which enables the periodic pressure to operate the switch and initiate the defrost heater. Secondary disclosures herein comprise several means to provide automatic initiation such as by a bimetal operated integrating mechanism (FIG. 11).

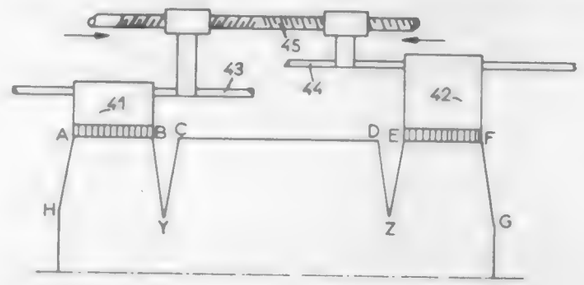
3,374,644
ABSORPTION REFRIGERATION SYSTEM
Glenn B. Foster, Liverpool, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,983
14 Claims. (Cl. 62—141)



Concentration control for an absurption refrigeration system having means effective at a predetermined solution temperature to maintain the solution and refrigerant pumping means operative following shut down of the system to reduce solution concentration. The control includes means adapted to introduce refrigerant into the system solution circuit to reduce solution concentration when refrigerant in the evaporator exceeds a preset amount.

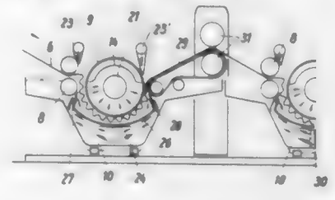
3,374,645
METHODS OF MANUFACTURING KNITTED GOODS INCORPORATING DARTS, AND ARTICLES OBTAINED THEREBY
Marcel Léon Cointe, Nanteuil-les-Meaux, France, assignor to Etablissements Gaston Verdier, Paris, France, a corporation of France
Filed Nov. 5, 1964, Ser. No. 409,105
Claims priority, application France, Nov. 8, 1963, 953,248
12 Claims. (Cl. 66—89)

1. A method of manufacturing knitted goods, provided with dart means, on a flat, straight frame, full-fashioned hosiery machine, comprising operating the latter to successively effect the steps of: knitting a fabric blank panel portion upon starting from the bottom thereof up to the level selected for making at least one dart start from a point thereon by feeding yarn to the active needles from at least one yarn carrier; proceeding with knitting courses on either side of said point while progressively narrowing them outwards by sidewise shifting the yarn loops in opposite directions to the left hand side and to the right hand side of said point, respectively, by means of at least two regular loop transfer point combs carried by narrowing fingers moving laterally outwards relative to each other, so as to form at least one diverging slit dividing the knitted material at and from said point into two strips separately and substantially simultaneously knitted each one with the same number of courses fed by at least two yarn carriers, respectively, replacing the aforesaid single one, said strips extending upwards from said level



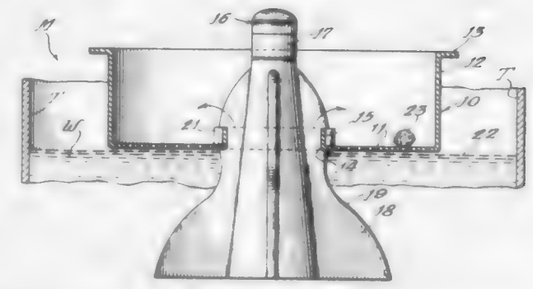
and having progressively outward narrowed, inner selvages issuing from said point to define an at least approximately V-shaped notch therebetween; and transferring all the stitches of the last knitted course of one strip by a distance substantially equal to the gap top width of said notch corresponding to the spacing between the inner selvage top ends, by means of at least one tickler having a point comb length substantially equal to the length of said last knitted course of said one strip so as to span the active needles required for the knitting of said last knitted course, whereby the innermost end loop of said course is brought and knitted together with the adjacent innermost end loop of the last knitted course of said other strip to form a resulting single aggregate course joining both strip tops into a single continuous one of wider area and closing the top gap of said notch which thus becomes an elongated narrow slit with a closed contour.

3,374,646
APPARATUS FOR TREATING TEXTILE FABRICS AND THE LIKE
Heinz Fleissner, Egelsbach, near Frankfurt, Germany, assignor to Anstalt fuer Patentdienst, Vaduz, Liechtenstein
Filed Aug. 25, 1964, Ser. No. 391,994
Claims priority, application Switzerland, Aug. 26, 1963, 10,538/63
16 Claims. (Cl. 68—9)



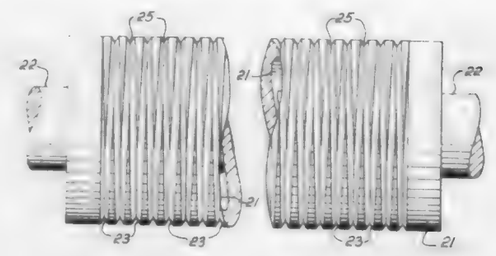
1. An apparatus for treating textile materials which are fed to said apparatus as a material panel, comprising at least one perforated suction drum adapted to be driven at a uniform rate of speed, a bath containing a treating liquid, said suction drum being disposed within said bath and adapted to revolve in said liquid, means for applying a suction to the inside of said drum, and feeding means for feeding a textile material toward said drum, for bunching said material during the feeding movement together so as to form uniform and equally spaced wavelike folds, and for applying the inner crests of said folds upon the surface of said rotating drum on which they are held by the suction of said drum.

3,374,647
LINT FILTER FOR USE IN WASHING MACHINES
Charles E. Morgenstern, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed July 25, 1960, Ser. No. 44,966
14 Claims. (Cl. 68—18)



1. In a washing machine having a tub and a rotatively oscillatable agitator provided with a post having an outermost annular wall surface and a vane extending from said surface for agitating washing liquid and material to be washed in the tub, a lint filter comprising: a foraminous member having an upper surface, a peripheral portion, and a central opening slightly larger than said surface at the upper surface of the washing liquid in the tub to provide a flow passage therebetween; means on the foraminous member for preventing liquid flow over the peripheral portion of the foraminous member; and means for supporting the foraminous member with the post extending axially through the opening for movement with the agitator horizontally adjacent the upper surface of the washing liquid to strain washing liquid delivered through said flow passage to the upper surface of said member as a result of the agitating oscillation of the vane.

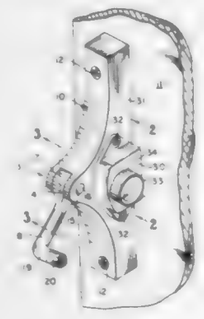
3,374,648
TEXTILE TREATING APPARATUS WITH A PLASTIC COATED OR METAL ROLL HAVING LEFT- AND RIGHT-HAND HELICAL THREADS
Leo Russell Maguire, Whitfield, Reading, Pa., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Sept. 29, 1966, Ser. No. 582,987
5 Claims. (Cl. 68—180)



1. A log roll adapted for use in combination with a take-up roll on wet processing textile machines characterized in that its surface in the body section that is to be in contact with and extend across a fabric web during

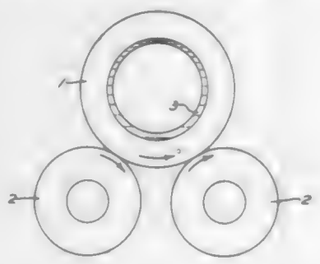
roll-up is provided with a grooved pattern formed by a helical left handed thread and a helical right hand thread, both threads having about the same pitch and running from end to end of the body section.

3,374,649
MEANS FOR DOGGING A PANIC EXIT BAR IN A LATCH-RETRACTED POSITION
Stanley R. Weidman, Indianapolis, Ind., assignor to Von Duprin Inc., Indianapolis, Ind., a corporation of Indiana
Filed Aug. 26, 1966, Ser. No. 575,288
11 Claims. (Cl. 70—92)



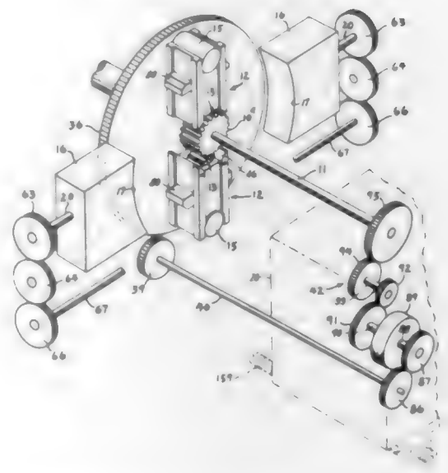
A dogging means for retaining the latch-actuating lever of a panic exit device in latch-retracted position, comprising a wedge means spring-biased to lever-blocking position, cam follower means operatively connected to move with said wedge means, and cam means cooperative with said cam follower means to move and hold said wedge means affirmatively out of such lever-blocking position. In its preferred form, said cam means is actuatable only through a key-operated lock mechanism disposed on an axis substantially parallel with the pivotal axis of the latch-actuating lever.

3,374,650
MANUFACTURING SEAMLESS TUBES
Albert Henri Calmes, Crans, Sierre, Valais, Switzerland, assignor to Contubind Société Anonyme, Lausanne, Switzerland, a Swiss company and Lorraine-Escaut Société Anonyme, Paris, France, a French company
Filed Oct. 22, 1965, Ser. No. 501,368
Claims priority, application Great Britain, Nov. 19, 1964, 47,117/64
4 Claims. (Cl. 72—46)



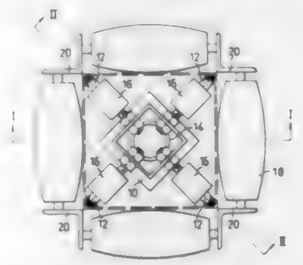
1. In the process of producing a seamless tube from a hot solid metal body, the steps comprising forming said body into a cylindrical hollow blank, distributing meltable protective flux along the inside of said hollow blank at the time it is formed, the flux melting at a temperature substantially lower than the temperature of said body so as to form liquid flux in the blank, as soon as said blank is formed rotating it about its axis at a speed that spreads the liquid flux out into a layer covering the inner peripheral surface of the blank, and continuing said rotation while the blank is proceeding to a subsequent step in which the blank is converted into a seamless tube.

3,374,651
MACHINE FOR FORMING GEARS
Edward W. Haug, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Oct. 23, 1965, Ser. No. 503,193
21 Claims. (Cl. 72—76)



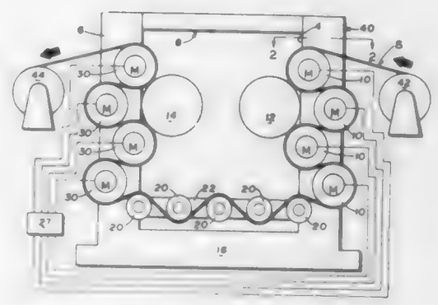
1. A machine for forming teeth on a cylindrical workpiece comprising a spindle adapted to support the workpiece, a tool support mounted for rotation about the longitudinal axis of said spindle, a pair of slides mounted on diametrically opposite sides of said tool support and each operable to move radially of said axis and toward and away from the workpiece, a tool mounted on the inner end of each of said slides to oppose the periphery of the workpiece and having a shape correlated to the shape of a tooth to be formed, drive mechanism for rotating said spindle and said tool support about said axis but at different angular speeds whereby the tool support turns angularly relative to the spindle, and cam mechanism operable in timed relation to said drive mechanism to move said slides inwardly after each time said tool support turns relative to said spindle through an angle equal to the angular spacing of the teeth on the workpiece whereby said tools impact the periphery of the workpiece and successively form the teeth.

3,374,652
TUBE SHAPING APPARATUSES
John Edvin Hjalmarsson, Stallgatan 3, Broby, Sweden
Filed Oct. 15, 1965, Ser. No. 496,274
Claims priority, application Sweden, Oct. 21, 1964, 12,647/64
6 Claims. (Cl. 72—113)



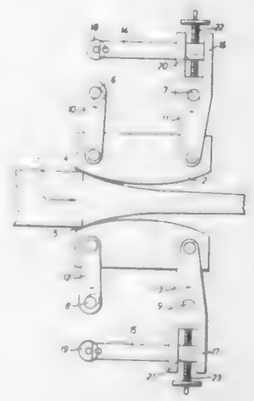
1. An apparatus for continuously shaping tubes of round cross section, preferably metal tubes for ventilating and the like systems into tubes of angular cross section and substantially planar side surfaces, wherein the tube of round cross section is passed onto a mandrel and wherein each corner of the angular cross section the mandrel has rotatably mounted thereon edge-producing rollers, and in the proximity of and substantially between said edge-producing rollers on the mandrel further rollers are rotatably mounted around the mandrel for shaping the side surfaces of the angular cross section, said further rollers having their axes extending in parallel with the side surfaces of the angular cross section.

3,374,653
STRIP LEVELING APPARATUS
Paul P. Zeigler, Spokane, Wash., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed May 28, 1965, Ser. No. 459,743
14 Claims. (Cl. 72—161)



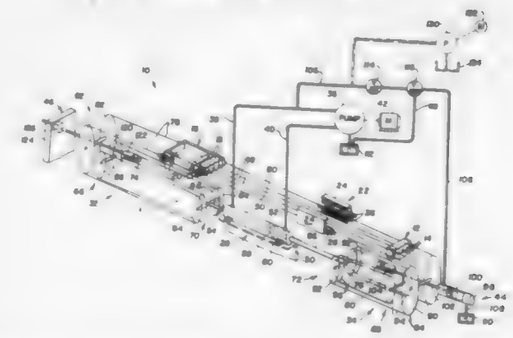
Apparatus for leveling continuously moving strip material and comprised of an improved arrangement of separate tension-inducing and bending rolls wherein a uniquely arranged pinch roll means is cooperatively associated with a tension-inducing roll so as to control in a precise fashion the tension applied to the strip by the tension-inducing roll.

3,374,654
STRETCH FORGING MACHINE
Heinrich Uebing, Lintorf, Bezirk Dusseldorf, Germany, assignor to Firma Friedrich Kocks, Dusseldorf, Germany
Filed May 5, 1967, Ser. No. 636,308
Claims priority, application Germany, May 11, 1966, K 59,222
2 Claims. (Cl. 72—189)



Driving mechanism for moving a pair of walking jaws of a machine for stretch forging ductile material towards one another and forwards to deform the material and advance it through the machine, and then away from one another and backwards to release the material and return the walking jaws to their initial position, which includes two sets of driving means, one set for each of the walking jaws. Each of the sets of driving means has a first link, a first rotatable driving shaft, means pivotally connecting one end of the first link to the respective walking jaw, eccentric means pivotally connecting the other end of the first link to the first rotatable driving shaft, a second link, a second rotatable driving shaft, means pivotally connecting one end of the second link to the walking jaw, and eccentric means pivotally connecting the second link to the second rotatable driving shaft at a position intermediate the ends of the second link, and a third link, a third rotatable shaft, eccentric means pivotally connecting one end of the third link to the third rotatable driving shaft, and means pivotally connecting the other end of the third link to the second link at a position between the connection of the second link to the second rotatable driving shaft and the end of the second link remote from the walking jaw. The driving means also includes means for rotating the first, second and third driving shafts at the same speed. The first and second links extend transversely to the material travel direction through the machine and control the movement of the pair of walking jaws toward and away from each other, and the third link extends substantially parallel to the material travel direction and controls the forward and backward movement of the pair of walking jaws.

3,374,655
CABLE-TYPE DRAWBENCHES
Fred E. Halstead, Rochester, Pa., assignor to Halstead Metal Products, Inc., Zelienople, Pa., a corporation of Pennsylvania
Filed Dec. 27, 1965, Ser. No. 516,488
5 Claims. (Cl. 72—287)

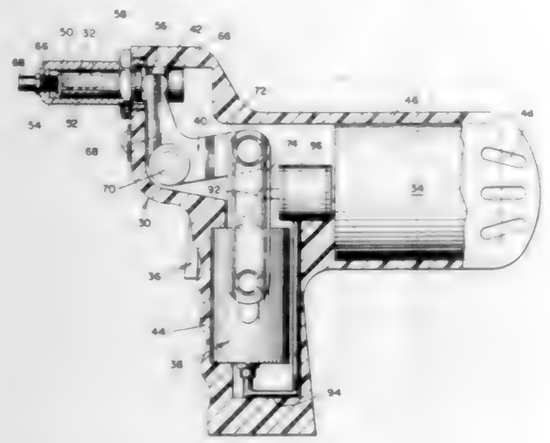


1. In a drawbench having a drawing die, a track structure extending parallel to the central axis of said drawing die, a draw carriage movable along said track structure for pulling workpieces through said drawing die, return cable means connected to said draw carriage and extending therefrom in a direction opposite to the direction of draw, and means operable on said return cable means for returning said draw carriage adjacent said drawing die, the improvement comprising: means including a hydraulic cylinder for applying a preselected tensile force on said return cable means in a direction opposite to the direction of draw and of an amount sufficient to eliminate substantially entirely all sag in said return cable means.

3,374,656
TOOL FOR SETTING TUBULAR RIVETS
Anthony E. Di Maio, Georgetown, Mass., assignor to Marson Fastener Corporation, Chelsea, Mass., a corporation of Massachusetts
Filed Jan. 25, 1966, Ser. No. 522,898
5 Claims. (Cl. 72—391)

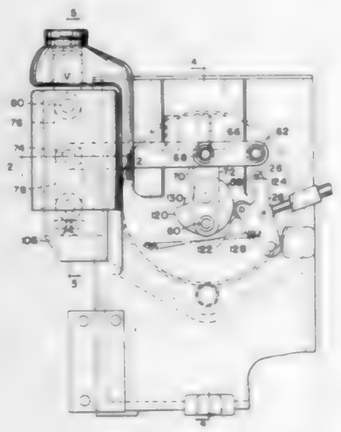
1. A tool for setting tubular rivets of the type having an outer barrel portion and an inner mandril portion, said outer barrel portion having a rearward flange, said mandril portion having a head at the forward end of said outer barrel portion and a stem extending rearwardly from said head and from said outer barrel portion, said tool comprising a housing having a nose portion and a grip portion, a collet case affixed to said nose portion, an electric motor in said housing, a hydraulic pump operatively

connected to said electric motor, hydraulic cylinder means communicating with said hydraulic pump, a collet reciprocable in said collet case between a forward position



and a rearward position, said collet when in said forward position being open to receive said stem and when in said rearward position being closed to retract said stem, said hydraulic cylinder being operatively connected to said collet case.

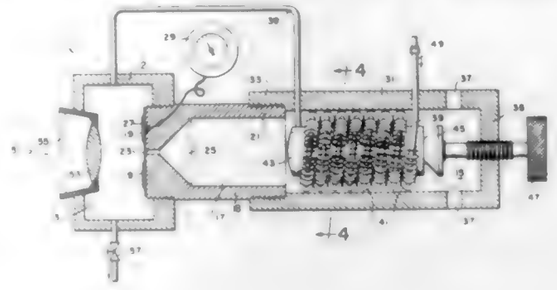
3,374,657
METHOD AND APPARATUS FOR CRIMPING ELECTRICAL CONNECTORS
Joseph W. Baldyga, Utica, Mich., assignor to Diamond Die & Mold Co., Mount Clemens, Mich., a corporation of Michigan
Filed May 24, 1965, Ser. No. 458,141
7 Claims. (Cl. 72—413)



Crimping apparatus and its method of operation comprising a movable ram, a pair of toggle devices connected in series, crank mechanism connected to one of said toggle devices, said crank mechanism including a connecting rod, and drive means for effecting substantially 360° rotation of the crank from a starting position in which the connecting rod is in substantial alignment with a line joining the axis of the crank and the pivot connection between the links of the toggle to which the crank is connected.

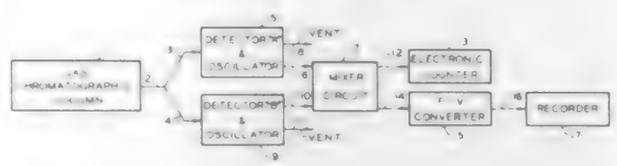
3,374,658
HIGH PRESSURE GAS FROST-POINT INDICATOR
Stephen H. Ford, 211 Hanover St., Annapolis, Md. 21401
Filed Jan. 28, 1965, Ser. No. 428,881
7 Claims. (Cl. 73—17)

An instrument for indicating the moisture content of pressurized gases. Inside the indicator gas flows across a polished mirror-like metal plate and through a small orifice in the center of the metal plate. In passing through the orifice to atmospheric pressure, the rapidly expanding air cools the metal plate until the plate is cooled to the frost-point temperature of the gas. The condensate



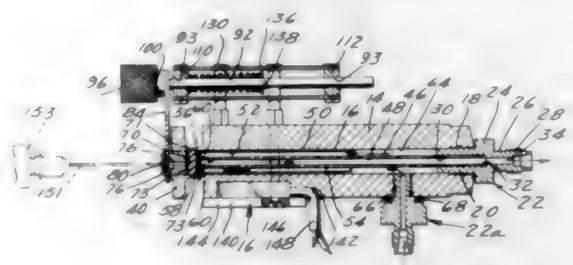
and the temperature of the plate are then observed by the operator to determine the moisture content of the pressurized gas. The expanded gas is passed over a heat exchanger, through which the gas is introduced into the system to precool the pressurized gas before it flows across the mirror.

3,374,659
GAS ANALYSIS
Richard A. Sanford and Edwin K. Clardy, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 22, 1965, Ser. No. 427,251
5 Claims. (Cl. 73—23.1)



Overlapping peaks manifested on an analyzing recorder are separated by use of at least two oscillator circuits each having at least one piezoelectric crystal which carries a material that is preferentially sorptive for at least one component present in the stream being analyzed, each material on each crystal being preferential to a different component or components.

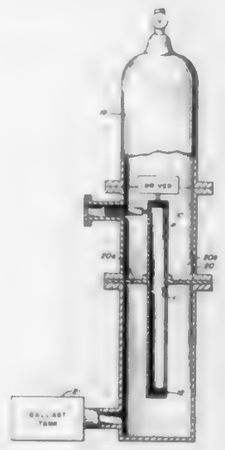
3,374,660
INLET FOR CHROMATOGRAPHS AND THE LIKE
Carlton B. McKinney, Los Angeles, and William M. Sheppard, Whittier, Calif., assignors to Hamilton Company, Whittier, Calif., a corporation of California
Filed June 28, 1966, Ser. No. 561,085
19 Claims. (Cl. 73—23.1)



18. In an inlet for chromatographs and the like:
(A) an elongated body having a longitudinally extending passage therethrough;
(B) a column fitting secured in one end of said passage, said fitting having an axial bore extending forwardly

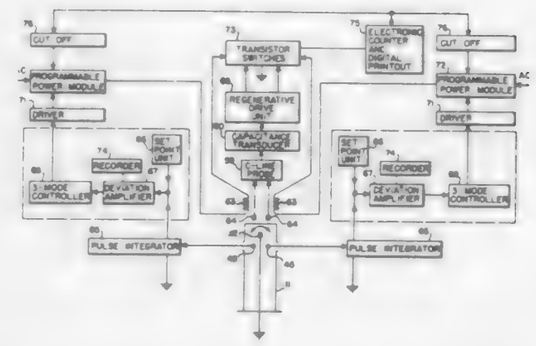
from the inner end and from the forward end of which a reduced diameter fluid discharge bore extends;
(C) a vaporizer tube of inactive material, said tube being of smaller outside diameter than the inside diameter of the passage through the body, a forward end portion of said vaporizer tube being snugly received in the axial bore of said fitting, the outer end of said vaporizer tube being spaced rearwardly of the outer end of the passage through the body and having notch means therein;
(D) a liner of inactive material, said liner having a passage extending longitudinally therein, there being a wall at the outer end of said passage with a relatively small instrument axial opening therethrough, for reception of the needle of a sample handling instrument, the outside diameter of the liner being such as to be snugly received in the passage of the body, the inside diameter of said liner being greater than the outside diameter of the vaporizer tube and fitting over an outer end portion of said vaporizer tube to provide an annular chamber about the vaporizer tube having a fluid connect with the interior of said vaporizer tube, there being an inlet into said annular chamber, the outer end of said liner being spaced inwardly of the outer end of the passage through the body with the wall at the outer end of said liner resting on the outer end of the vaporizer tube, the opening in the end wall of the liner registering with the passage through the vaporizer tube;
(E) a septum in the outer end portion of the body passage, said septum abutting the outer side of the liner end wall;
(F) a septum retainer slidable and removably received within the outer end portion of the body passage, said retainer having a small axial guide bore for reception of a needle of a sample delivering instrument, said guide bore being aligned with the opening in the end wall of the liner;
(G) and resilient means for urging said retainer against the septum with a predetermined pressure.

3,374,661
ADMITTANCE MEASUREMENTS OF SOLID PROPELLANTS
Samuel N. Foner, Adelphi, and Richard L. Hudson, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 28, 1965, Ser. No. 428,888
14 Claims. (Cl. 73—35)



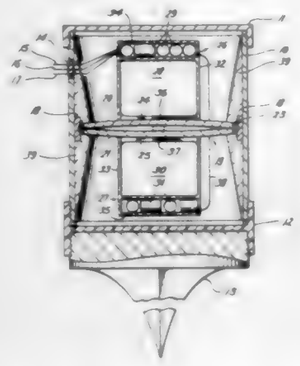
A method and apparatus for determining the response of a burning solid propellant surface wherein a propellant is arranged at one end of a centrally vented cavity and a phase-locked mechanical driver for exciting the cavity in a resonant mode is arranged at the other end. The bandwidth of resonance of the system is determined by phase modulating the mechanical driver and measuring the resultant sideband amplitudes, and the decay constant of the cavity used in the system is measured by momentarily shorting out the mechanical drive system and observing the free-decay or growth of oscillations.

3,374,662
FLEXURAL FATIGUE MACHINE
Meyer R. Achter, Washington, D.C., Hugh H. Smith, Oxon Hill, Md., and Robert J. Riley, Springfield, and Richard L. Stegman, Annandale, Va., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 29, 1966, Ser. No. 547,073
2 Claims. (Cl. 73—67.4)



1. In combination in a reverse-bending fatigue testing device,
an elongated gas-tight chamber having a magnetically transparent upper end cover,
specimen holding means within said chamber for holding one end of a test specimen,
an extension rod for attaching to the opposite end of said test specimen, and extending upwardly in close proximity to said cover,
a permanent magnet attached to the upper end of said extension rod juxtaposed the chamber cover,
spaced electromagnets secured above said chamber cover equi-distant from the axis of said chamber,
spaced capacitor plate elements secured above said chamber cover within the spacing of said electromagnets and equi-distant from the axis of said chamber,
a pair of radially adjustable electrical contact members extending into the upper end of said chamber normal to the axis thereof and secured in opposed radial relationship to each other,
a separate electrical feedback circuit connected to each of said electrical contact members and connected separately to each of said electromagnets,
an electrical circuit connected with said capacitor plates and to a pair of electrical switches,
said pair of electrical switches completing the circuit for each of said separate feedback circuits to pass current separately through each of said electromagnets to energize the electromagnets,
whereby said permanent magnet on the end of said extension rod is repelled by each of said electromagnets to move the extension rod through its amplitude thereby flexing a specimen secured to said specimen holder and to the end of the extension rod while generating a switch signal to control said switches.

3,374,663
VIBRATION DETECTOR
Harold B. Morris, Houston, Tex., assignor to Electronic Systems, Inc., Houston, Tex., a corporation of Texas
Filed Apr. 16, 1965, Ser. No. 448,684
11 Claims. (Cl. 73—71.2)



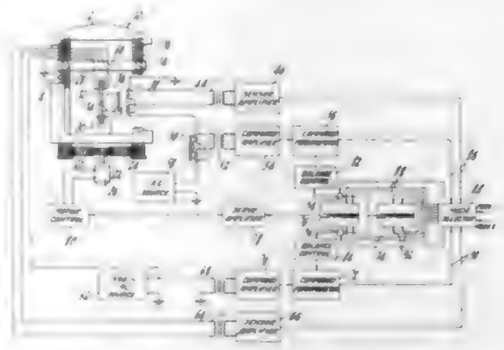
A vibration detector having at least one pair of piezoelectric crystals assembled with their edges joined and the central portions spaced apart, mounted in a case and having an inertial mass means associated with the central portion of the crystals. A spacer element between the central portions of the crystals causes the crystals to bow outwardly with respect to each other to a loaded position, thus increasing the sensitivity to vibrations.

3,374,664
DEVICE FOR MEASURING PORE-FLUID PRESSURES
Joseph R. Lefelhocz, Cletus E. Peeler, Jr., and Allan D. Bergmann, Painesville, Ohio, assignors to Diamond Shamrock Corporation, a corporation of Delaware
Filed June 1, 1966, Ser. No. 554,416
3 Claims. (Cl. 73—73)

1. In an apparatus for determining pore-fluid pressures comprising a hollow, porous tube having a stopper in one end and a riser tube extending from its other end, the improvement which consists in providing said porous tube with a covering of a flexible, corrosion resistant, fluid-permeable screen.

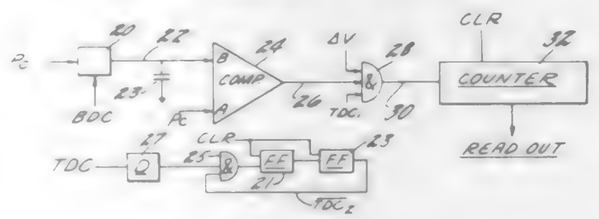
3,374,665
MATERIALS TESTING CONTROL CIRCUITRY
John Linnartz Preston, Needham, Mass., assignor to Instron Corporation, Canton, Mass., a corporation of Massachusetts
Filed Oct. 5, 1965, Ser. No. 493,054
3 Claims. (Cl. 73—90)

Materials testing device having a movable crosshead subject to control under either of two variable commands, in which circuitry is provided to apply whichever command is in control to a motor control for the device, and simultaneously to maintain the other command commensurate with the actual condition of the specimen, so



that conversion from one mode of control to another will not require sudden gross adjustment of the crosshead position.

3,374,666
VOLUMETRIC EFFICIENCY COMPUTER
Arthur B. Shattuck, East Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 21, 1966, Ser. No. 544,253
9 Claims. (Cl. 73—115)

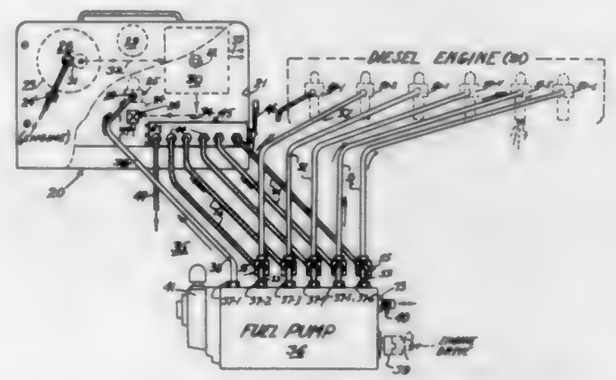


1. A device for computing the volmetric efficiency of a cylinder having a piston comprising:
means for generating a signal indicative of the botton dead center position of the piston in the cylinder,
means for generating a signal indicative of equal volume increments swept out by the piston within the cylinder,
means for generating a signal indicative of the pressure within the cylinder,
means for storing the pressure signal of the cylinder corresponding to the pressure of the cylinder when the piston is at the bottom dead center position,
means for comparing said stored pressure signal with said pressure signal and producing a signal indicative when said pressure signal is less than said stored pressure signal, and
means activated by said comparison signal for counting said equal volume increments.

3,374,667
TESTER SYSTEM FOR DIESEL FUEL PUMPS
Helmut O. Mayer, Middletown Township, Monmouth County, N.J., assignor of thirty percent to Richard A. Marsen, Middletown, N.J.
Continuation-in-part of application Ser. No. 223,119, Sept. 12, 1962. This application Oct. 22, 1965, Ser. No. 522,335
8 Claims. (Cl. 73—119)

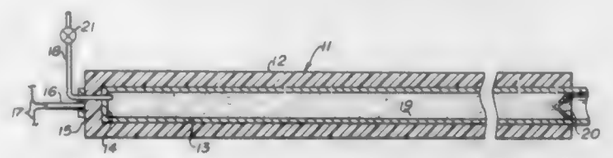
1. In a system for in-position testing the discharge of fuel from the individual output sections of the injection pump coupled by lines to the plural spray nozzles of a diesel engine and driven thereby, and wherein the setting of a unitary control element adjusts the volume of

fuel discharged per stroke in succession by each pump section for its associated spray nozzle: a fuel volume measuring unit; means fro conducting the fuel output of a selected for testing pump section to said measuring unit; and control means for reducing fuel output to the nozzles from the remaining associated sections of the pump, and thereby correspondingly substantially uniformly control the reduced amount of fuel entering their respective spray nozzles of the engine for its operation



of the pump during its in-position testing as compared with the basic fuel output from said sections normally determined by the indicated control element setting, said control means comprising pulsatable means actuated by the successive fuel discharges by the remaining pump sections, whereby the engine is operatively fueled by said remaining pump sections while the selected pump section is being tested.

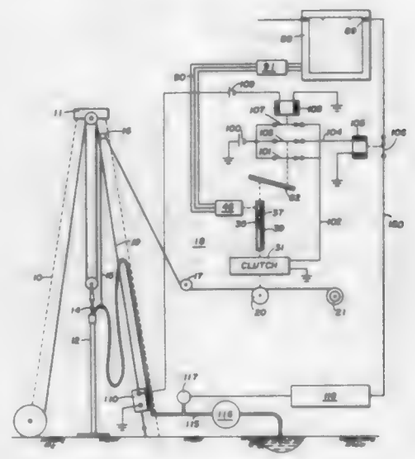
3,374,668
HIGH EXPLOSIVE DRIVEN GAS INJECTOR AND FACILITY
Charles S. Godfrey, Berkeley, Calif., assignor to Physics International Company, Berkeley, Calif., a corporation of California
Filed Oct. 19, 1964, Ser. No. 404,837
18 Claims. (Cl. 73—147)



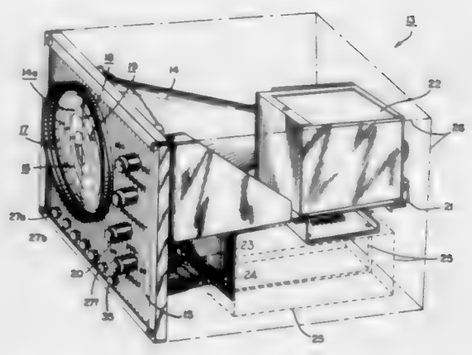
1. A method for creating a high pressure shock front in a gas comprising the steps of confining a mass of gas within a long cylindrical volume defined by a liner material, explosively imploding said liner material radially inward progressively along the length of said volume from one extreme end thereof to the other whereby said gas is progressively gathered and driven at high velocity along the axis of said volume and thereby forms a shock front at the interface between the driven high velocity gas and the as yet unshocked gas mass and wherein said shock front travels along the length of said cylindrical volume.

3,374,669
DRILLING RATE LOGGER
Fletcher H. Redwine, Irving, Tex., assignor to Arps Corporation, Garland, Tex., a corporation of Delaware
Filed Dec. 23, 1964, Ser. No. 420,554
9 Claims. (Cl. 73—151.5)

A penetration rate recording system has a depth line attached to a drill string support which is repeatedly moved from adjacent to the derrick floor to a region of the crown block. The depth line passes over a depth line sheave disposed in the region of the crown block, and also passes over a measuring sheave provided to measure the movement of the depth line. A lead screw is connected to the measuring sheave to rotate in response to the measured movement of the depth line. A traveling nut is mounted on the lead screw and is keyed to a cylinder for slide movement relative thereto, but constrained against rotation relative to the cylinder. A pulse generator is driven by the cylinder and a recorder driven in proportion to the rotation of the cylinder records the generator pulses as an indication of the rate of penetration as a function of depth.



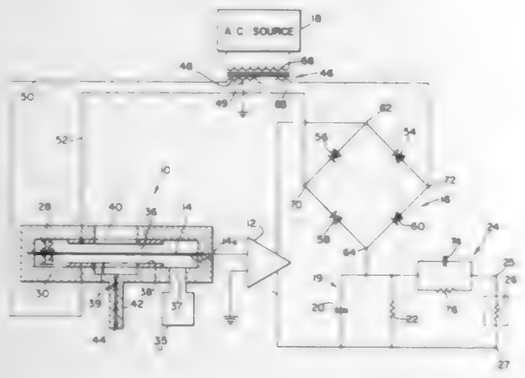
3,374,670
NAVIGATION INSTRUMENTATION
Paul F. Maeder, East Providence, R.I., assignor, by mesne assignments, to MacCleaster-Schwarz, a division of William M. Pearson Travel Agency, Inc., Providence, R.I., a corporation of Rhode Island
Filed Apr. 26, 1965, Ser. No. 450,585
28 Claims. (Cl. 73—178)



Navigation instrumentation for measurement of different types of navigation data including a cathode ray tube display surface having navigation measurement indicia thereon, and control means for producing display data on the cathode ray tube in response to signals from one of a number of electrical transducers which are mounted in various positions on the craft. Each of the transducers sense the relation of the craft to the navigation condition under measurement and through their associated transmitting circuitry selectively apply signals representative of the navigation condition to the display control means, to give a visual indication on the display surface of the measured condition. The transducers and the transmitting circuitry are adapted to measure and transmit signals to

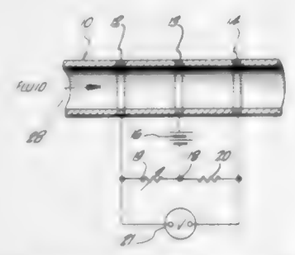
the display tube representative of ocean floor depth, the direction and wind velocity relative to the craft, speed of the craft in the water, absolute wind velocity, radio direction finding information, and the orientation of magnetic north relative to the craft heading and radio direction.

3,374,671
VERTICAL RATE SENSOR
Sidney B. Williams, Lexington, and Edward T. Rigney, Wayland, Mass., assignors to Trans-Sonics, Inc., Burlington, Mass.
Filed Mar. 31, 1965, Ser. No. 444,137
12 Claims. (Cl. 73—179)



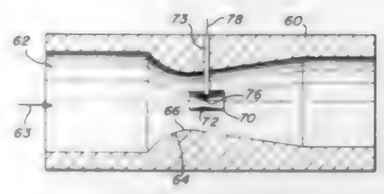
A vertical rate sensor having high resolution of vertical direction and fast response to changes in rate employs a differential pressure transducer and an electrical compensating circuit that develops the sensor output signal in response to the transducer signal. The transducer compares two pressures developed by sensing the atmospheric pressure with a pneumatic circuit of essentially zero time constant and a pneumatic circuit of relatively long time constant. The compensating circuit is a lead circuit having an electrical time constant matched to the longer time constant of the two pneumatic circuits to offset the delay introduced by that long time constant.

3,374,672
FLOWMETER
Arthur P. Horne, Arcadia, Calif., assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California
Filed July 6, 1965, Ser. No. 469,647
3 Claims. (Cl. 73—194)



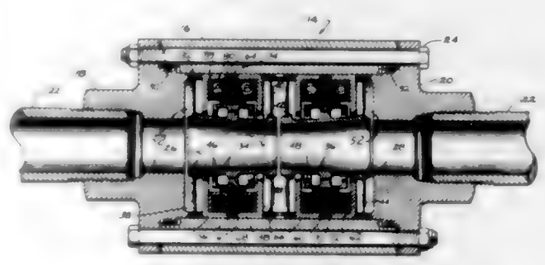
A flowmeter for measuring flow rate of a fluid in a conduit. Three electrodes are mounted in and insulated from the conduit, the electrodes being terminated flush with the inner surface of the conduit. The electrodes make electrical contact with the fluid, and are spaced apart to form an array of an upstream electrode, a central electrode, and a downstream electrode. Voltages are impressed across the electrodes to cause electrical currents to flow through the fluid, and differences in the currents are measured to determine fluid flow rate.

3,374,673
MASS FLOWMETER STRUCTURE
James H. Trageser, Kettering, Ohio, assignor to Technology Incorporated, Dayton, Ohio, a corporation of Ohio
Filed Oct. 1, 1965, Ser. No. 492,179
4 Claims. (Cl. 73—204)



This invention relates to a mass flowmeter. The invention relates still more particularly to conduit structure for use in combination with mass flowmeter apparatus. The conduit structure comprises means for substantially eliminating turbulence therein and discloses the use of thermally responsive sensor means positioned in the conduit in a location of negligible turbulence.

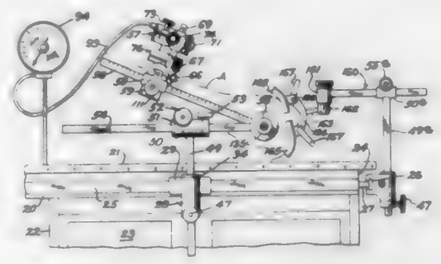
3,374,674
FLUID FLOWMETER
Everett H. Schwartzman, 457 34th St., Manhattan Beach, Calif. 90266
Filed Feb. 23, 1965, Ser. No. 434,179
14 Claims. (Cl. 73—213)



A flowmeter including two generally-similar, venturi members defining tapered internal passages, which members are held independently spaced apart by diaphragm structures so as to receive the fluid stream that is to be measured. The spaced displacement of the venturi members allows them to respond to variations in fluid flow with opposed movements which are sensed by electrical apparatus to manifest the measured flow as an electrical signal. The requisite opposed movements of the venturi members to measure flow renders the structure immune from various other factors, as acceleration forces and so on. The disclosure includes inductive, capacitive and resistance elements for providing an electrical signal indicative of flow.

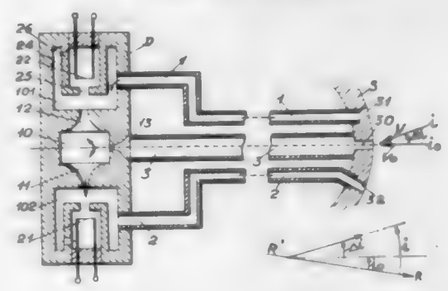
3,374,675
ISOMETRIC MUSCLE TESTING APPARATUS
Michael Keropian, 683 7th Ave., San Francisco, Calif. 94118
Filed Jan. 4, 1965, Ser. No. 423,082
8 Claims. (Cl. 73—379)

4. In a muscle testing device of the character described, the combination of a table support and a pressure indicating gauge, rail means mounted on and extending longitudinally of said table support, slide means on said rail means and having a generally upright support means, a positioning bar mounted on said support means for longitudinal movement relative to said table, a measuring arm hingedly connected to one end of said bar for pivotal movement relative thereto whereby said arm is adapted to be arranged adjacent and to generally conform to the position assumed by the member of a person's anatomy being tested, means for locking said arm in position, a load cell means mounted for longitudinal movement on said positioning bar to a position most suitable for the



particular member being tested arranged adjacent said arm, said load cell means having a pressure chamber and flexible diaphragm, a fluid conduit between said chamber and said gauge, a body part engaging means associated with said load cell means for attachment to the member being tested whereby movement of the muscles in the member being tested is transmitted to said pressure chamber and to said gauge.

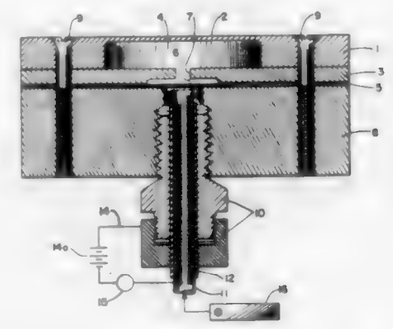
3,374,676
THERMAL GAS FLOW COMPARATOR
Claude Brenot, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Jan. 26, 1965, Ser. No. 428,045
Claims priority, application France, Jan. 27, 1964, 961,591, Patent 1,391,867
6 Claims. (Cl. 73—399)



The invention provides an arrangement for comparing gas pressures at two different points of the outer surface of a body in a gas flow. Two ducts have their outer ends arranged for receiving the gas flow; their inner ends open in a chamber, in which two heating elements are positioned for being cooled by said ducts; means derive a signal which is a predetermined function of the differential cooling of said elements.

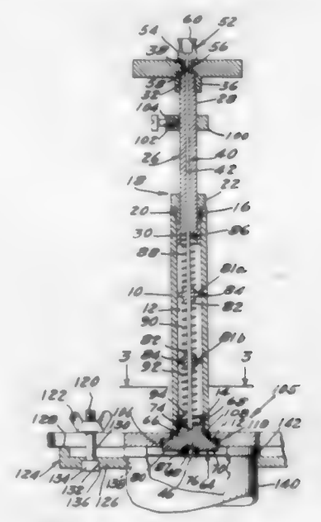
3,374,677
PRESSURE MEASURING DEVICE EMPLOYING A DIAPHRAGM-TYPE PRESSURE RESPONSIVE UNIT
Ernest L. Corp and Robert C. Bates, Spokane, Wash., assignors to the United States of America as represented by the Secretary of the Interior
Filed Dec. 21, 1965, Ser. No. 515,486
8 Claims. (Cl. 73—406)

A pressure measuring device as described, having an outer diaphragm integrally united to its face plate, an inner diaphragm, a sealed fluid reservoir between diaphagms, and an air conveying tube outside the reservoir perpendicularly displaced with respect to the inner diaphragm. Pressure of the granular mass against the outer diaphragm indirectly urges the inner diaphragm into contact with the tube which closes a circuit. As increasing



known amounts of air are injected into the tube, the air pressure reaches a magnitude which counteracts the granular mass pressure. This action moves the diaphragm out of contact with the tube and breaks the circuit.

3,374,678
HEAD SPACE SAMPLER
Melvin E. McGuckin, Rowland Heights, Calif., assignor to Hamilton Company, Whittier, Calif., a corporation of California
Filed Oct. 14, 1965, Ser. No. 496,104
21 Claims. (Cl. 73—421.5)

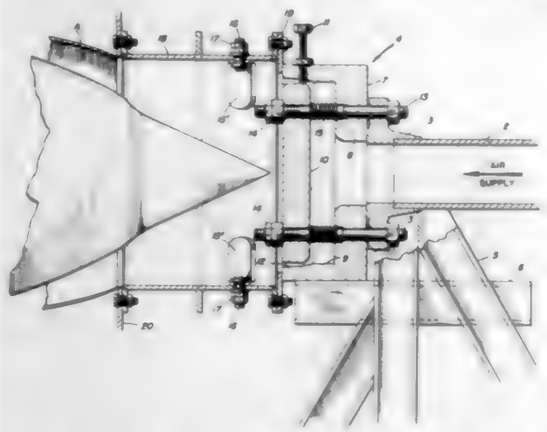


An apparatus for securing uncontaminated samples of gasses or liquids in the head space of cans, bottles and other containers. A penetrating needle is used for gaining access to the interior of the container and withdrawing samples of the contents thereof.

3,374,679
MISSILE FLIGHT SIMULATOR
Dennis Richards, Garrett Park, and Frank Bader and George P. Maggos, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 14, 1965, Ser. No. 472,070
8 Claims. (Cl. 73—432)

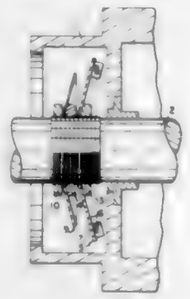
The present invention provides apparatus for testing a missile under wide conditions of airflow turbulence and vibration frequencies. According to the invention, high

pressure air is passed through an acoustic generator which directs a desired pattern of turbulent airflow through and



about the inlet, diffuser and combustor of a missile mounted in a test tunnel. Means are provided for producing a wide range of test frequencies.

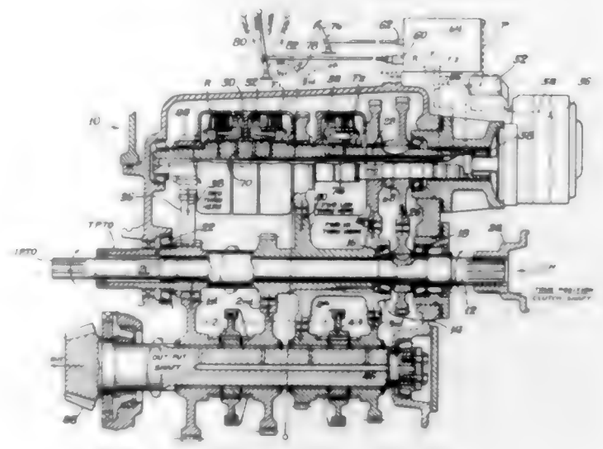
3,374,680
SHAFT SPEED LIMITING DEVICE
Carl H. Geary, Irwin, Pa., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Sept. 13, 1965, Ser. No. 486,816
2 Claims. (Cl. 73—538)



1. A trip mechanism for shaft speed governing apparatus comprising a first Belleville control spring encircling the shaft, collars mounted on said shaft at opposite sides of said spring, the first of said collars normally engaging the inner area of the concave side of the spring, the second of said collars on the opposite side of said spring normally engaging the convex side of said spring, said first Belleville spring having weights mounted on the concave side of the spring. the said spring and weights being so proportioned and related that the spring will snap over when the shaft starts to exceed a predetermined maximum speed and will snap back when the speed is reduced, a second Belleville spring positioned between the said second collar and a third collar, said second collar engaging the inner area of the concave side of said second spring, said second spring being so proportioned and related to said first spring that it will stress the first spring toward the low speed position when said first spring is in the high-speed, snapped-over position.

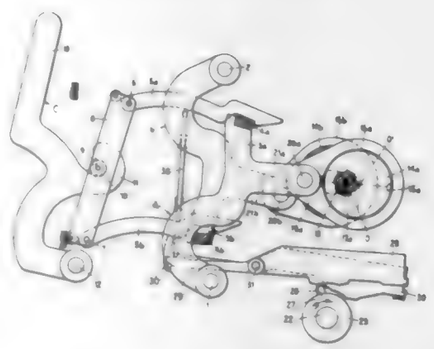
3,374,681
CONCENTRIC POWER TAKE-OFFS
Frederick M. Hugh, Mount Prospect, and Norman E. Williams, Park Ridge, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 22, 1966, Ser. No. 567,306
20 Claims. (Cl. 74—15.66)

1. In a vehicle transmission having an input portion, and fluid-operated and mechanical shift clutches:
clutch, IPTO, and output shafts, having their centerlines in a triangular arrangement as viewed in cross section;
a transfer portion (14) in the transmission coupled to the input portion by means of the clutch shaft and a plurality of the fluid-operated clutches thereon, and



coupled to the output shaft by means of a plurality of the mechanical shift clutches thereon; and
a TPTO shaft, said transmission having the input portion drivingly connected in common to the clutch and IPTO shafts, and having the transfer portion drivingly connected to the TPTO shaft.

3,374,682
ROCKER ARM DRIVE ASSEMBLY FOR WEAVING APPARATUS
Luigi Milani, Vanzaghello Magnago, Milan, Italy, assignor to Brevitex Etablissement pour l'Exploitation de Brevets Textiles, Vaduz, Liechtenstein
Filed Oct. 20, 1965, Ser. No. 498,917
Claims priority, application Italy, Dec. 4, 1964, 26,048/64, Patent 743,819
3 Claims. (Cl. 74—43)



A driving mechanism for operating the pawls which, in turn, operate the means for lifting the heddles of a dobbie of a loom, is disclosed as including a driven shaft rotated by the loom main shaft and having secured thereon a plurality of circular bushes. Each bush is operatively associated with a respective knife bearing arm for operating a pawl, and the center of each circular bush is offset radially from the axis of the driven shaft.

A plate is operatively associated with each bush and is formed with a circular opening rotatably embracing the associated bush, and each plate has a pivotal connection closely adjacent its circular opening and pivotally connecting the plate to a respective knife bearing arm at a point spaced from the pivotal mounting of the latter.

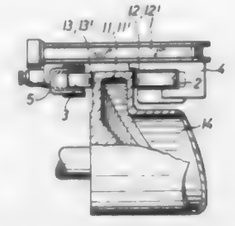
Each plate thus forms a short crank rod for the associated knife bearing arm, and has an appreciable dwell time at dead center which assures secure engagement between its associated knife bearing arm and the associated pawl, for drawing the pawl, during rotation of the associated bush, without appreciable play.

3,374,683
TRANSMISSION DEVICES FOR CONVERTING ROTARY MOTION INTO RECIPROCATING MOTION
Gerhard Helmut Jesse, Am Bostelberg 147, Hellendorf, Hannover, Germany
Filed Mar. 9, 1966, Ser. No. 533,091
Claims priority, application Germany, Mar. 10, 1965, J 27,668
10 Claims. (Cl. 74—50)

1. A transmission device for converting rotary motion into reciprocating motion comprising a pair of guides extending in mutually perpendicular directions, first and second rotatable members connected to each other and slidably disposed one in each of said guides and each mounted for rotation about a separate one of two spaced parallel axes, a third rotatable member operatively connected to one of said first and second members and rotatable about a third axis between and parallel to said two spaced axes and contained in the plane of said two spaced axes, means for rotating said third member about a fourth axis parallel to said two spaced axes and passing through the intersection of said guides, a reciprocable member operatively engaged by one of said first and second members and reciprocable in a first direction in a plane normal to said axes whilst permitting displacement of the engaged one of said first and second members in a second direction normal to said first direction and in the same plane, and means operable angularly to adjust said two guides about said fourth axis to control the amplitude of reciprocation of said reciprocable member.

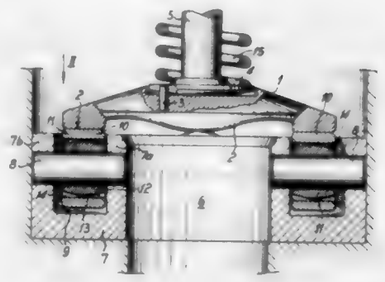
3,374,684
CARRIAGE-RECIPROCATING STRUCTURE FOR A MACHINE SUCH AS A DRAWING MACHINE
Johann Greven, Aachen, Germany, assignor to Schumag Schumacher Metallwerke GmbH, Aachen, Germany, a corporation of Germany
Filed Oct. 22, 1965, Ser. No. 502,169
Claims priority, application Germany, Apr. 17, 1965, Sch 36,904
4 Claims. (Cl. 74—56)

In a machine, carriage means cyclically movable along a given path first forwardly from a given starting position to a given end position and then rearwardly from the end position back to the starting position, a pair of cam-follower rollers displaced one with respect to the other along the path and defining a given space between themselves, a pair of support means carried by the carriage means and respectively supporting the rollers for rotary movement, and elongated cam means extending through the space between the cam-follower rollers and between the latter and movable in a direction generally transverse to the path, the cam means having a pair of opposed camming faces engaging the cam-follower rollers and respectively cooperating therewith to provide by cooperation of



one of the camming faces with one of the rollers forward movement of the carriage means and by cooperation of the other of the camming faces with the other of the rollers rearward movement of the carriage means, one of the support means which supports the cam-follower roller which cooperates with the cam means to provide rearward movement of the carirage means supporting the latter roller for resilient yieldable movement in the direction of movement of the carriage means.

3,374,685
FACE CAM DISC AND CAM FOLLOWER ARRANGEMENT
Franz Eheim, Rosenbergstrasse 53a, Stuttgart, Germany
Filed Jan. 26, 1966, Ser. No. 523,225
Claims priority, application Germany, Feb. 20, 1965, B 80,616
3 Claims. (Cl. 74—56)

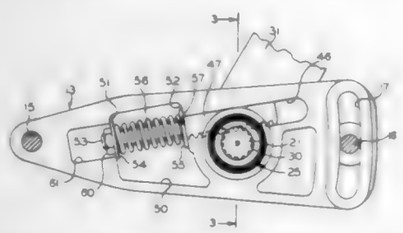


A disc with a camming face on a surface is located in a housing; outer surfaces of a cylindrical bearing sleeve engage the camming face, and a support element having pherical outer surfaces is located with the bearing sleeve, having a diameter less than the inner diameter of the inner bearing surfaces of the sleeve to provide clearance and permit inclination of the axis of the sleeve with respect to the axis of the support element.

3,374,686
DRIVE-TENSIONING APPARATUS
Carl T. Brewer, % Brewer Machine & Gear Co., 1441 N. 2nd St., St. Louis, Mo. 63102
Filed Dec. 1, 1965, Ser. No. 510,834
8 Claims (Cl. 74—242.11)

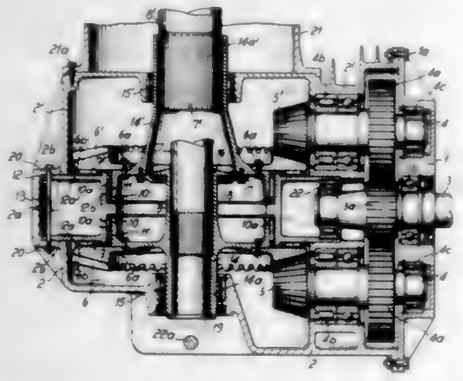
The drive tensioner includes a base having a shaft mounted to it, the shaft being connected external of the base to a transverse arm. The transverse arm is provided

with a pulley which engages a belt drive. Internally of the base, the shaft is connected to a pinion which operates a double-acting spring-loaded rack member. Angular rota-



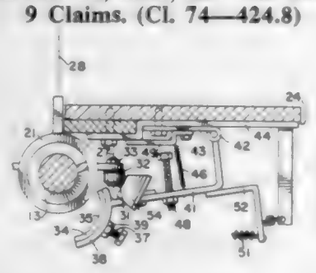
tion of the arm, in either direction from a neutral position, increases the compression in the spring-loaded rack mechanism. The tensioner is thus reversible.

3,374,687
TRANSMISSION FOR HELICOPTER ROTOR SHAFTS
Alfred Vogt, Friedrichshafen-Fischbach, Germany, assignor to Josef Wagner, Friedrichshafen-Fischbach, Germany
Filed Mar. 7, 1966, Ser. No. 532,274
Claims priority, application Germany, Mar. 20, 1965, W 38,810
10 Claims. (Cl. 74—417)



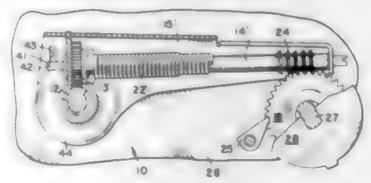
Two helicopter rotor shafts are secured to driven bevel gears which are supported on a bearing located between the driven bevel gears so that axial forces produced by drive bevel gear means acting on said driven bevel gears, and also by said helicopter rotor shafts are taken up by the bearing.

3,374,688
VIBRATION DAMPER SYSTEM
John Henry Schildmeier, 6038 Crows Nest Drive, Indianapolis, Ind. 46208
Filed Oct. 21, 1965, Ser. No. 499,424
9 Claims. (Cl. 74—424.8)



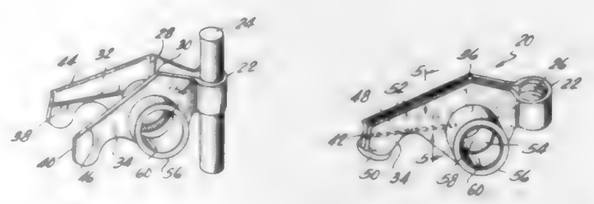
A drapery sizing machine including two parallel drive screws of substantial length and drive nuts thereon to drive a finger box up and down on the frame. A pair of semi-cylindrical shaft supports intermediate the ends of each shaft to prevent whipping, each including a three-section cam follower plate engageable by cam rollers on the drive nut during movement of the nut up or down to enable the nut to pass the support. Return springs constantly urging the supports against the drive screw and returning the supports to contact with the drive screw after the spreading of the supports by the cam and follower during passage thereof by the drive nut.

3,374,689
WORM GEAR ESCAPEMENT
Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Original application July 27, 1964, Ser. No. 385,402, now Patent No. 3,307,417, dated Mar. 7, 1967. Divided and this application Jan. 16, 1967, Ser. No. 632,473
7 Claims. (Cl. 74—426)



A worm gear escapement including a spring, a shaft having an off center portion, a pin coupled to the off center portion and a slotted retaining means. The off center portion of the shaft, the pin and the slotted retaining means cooperating so as to translate a rotary motion to an intermittent motion.

3,374,690
ROCKER ARMS FOR INTERNAL COMBUSTION ENGINES
Kazuo Hirose, 9 Tajima Saitama-ken, Urawa-shi, Japan
Filed Oct. 19, 1965, Ser. No. 497,858
Claims priority, application Japan, Apr. 22, 1965, 40/23,471
2 Claims. (Cl. 74—519)

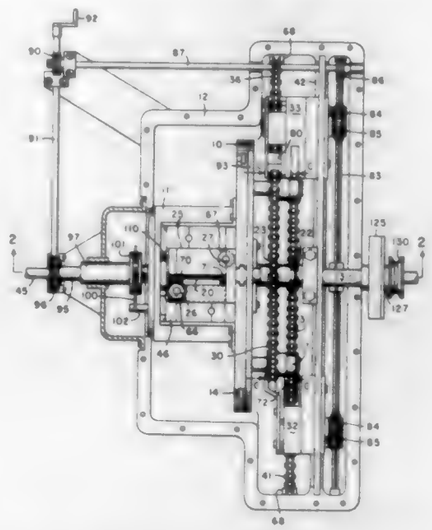


A rocker arm constructed of sheet metal formed from a pair of complementary sheets integrally interconnected by an arcuate eye portion. The sheets have an opposite end hammered and shaped to form a hardened valve head contact. The sheets are spot welded together in a manner so that flanges surrounding bores through the sheets form flanges. The sheets have complementary grooves forming oil passages with the upper edges of the sheets and being divergently flared and communicating with the grooves.

3,374,691
VARIABLE SPEED TRANSMISSION
Charles R. Schottel, 115 Kingsbury Court, Collinsville, Ill. 62234
Filed May 11, 1966, Ser. No. 549,415
18 Claims. (Cl. 74—674)

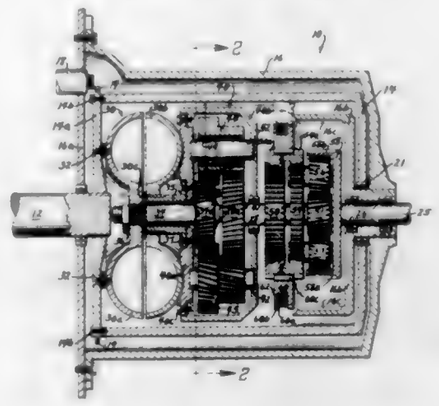
1. In a variable speed transmission:
(a) a drive shaft,
(b) a rotary head defining a rotative axis,
(c) a driven shaft operatively connected to and driven by the rotary head,

(d) sprockets rotatively mounted on and carried by the rotary head,
(e) a non-rotating chain defining a perimeter and meshing with the sprockets,
(f) a drive means operatively interconnecting the drive shaft and sprockets to rotate the sprockets, and consequently turn the rotary head and the driven shaft as the sprockets move around the chain,
(g) a mechanism carrying the chain and movable to accommodate the flexing action of the chain as the sprockets revolve around the chain perimeter,



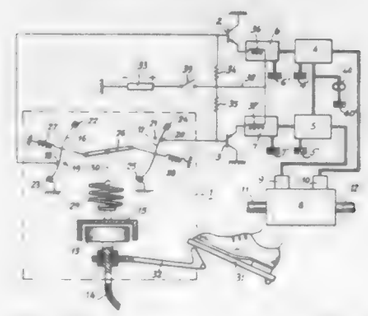
(h) sprocket-adjusting means operatively connected to the sprockets to position the sprockets selectively at predetermined distances from the rotative axis of the rotary head to vary the speed ratio of the drive shaft and driven shaft, and
(i) chain-adjusting means operatively connected to the chain for selectively changing the length of the chain perimeter to accommodate any change in sprocket position and to maintain effective meshing engagement of the sprockets and chain.

3,374,692
AUTOMATIC TRANSMISSION
Benjamin M. Kitch, 2563 N. Evans Ave., and David M. Kitch, 3604 Stringtown, Road, both of Evansville, Ind. 47711
Filed Oct. 12, 1964, Ser. No. 403,047
8 Claims. (Cl. 74—688)



1. An automatic transmission comprising a crankshaft connecting to a power source, a rotatable drum connecting to said crankshaft, a fluid coupling disposed within said rotatable drum having a drive portion and a driven portion, said drive portion connecting to and rotating simultaneously with said crankshaft, an inner drum disposed within said rotatable drum, said inner drum connecting to and rotatable simultaneously with said driven portion of said fluid coupling, a rotatable shaft secured to said drive portion of said fluid coupling and having a drive gear disposed thereon within said inner drum, a driven gear disposed within said inner drum on an intermediate axle, a plurality of axles positioned within said inner drum, each axle having a gear disposed thereon in cluster arrangement with said drive gear and said driven gear, said intermediate axle also having a first and a second gear disposed thereon, a plate member encircling said intermediate axle and having a plurality of gears rotatably disposed thereon in operational relationship with said second gear, said plate member having a geared outer surface, a drive shaft having a drum secured thereto in operational relationship with said second gear, said drum having a geared outer surface, a fixed member having a geared inner surface, and clutch-brake means including a slidable operating member which selectively connects the said first gear and the said plate member, the said plate member and the said inner surface of said fixed member, and the said outer surface of said drum, the said plate member and the said inner surface of said fixed member.

3,374,693
AUTOMATIC SPEED-CHANGING MECHANISM FOR AUTOMOBILE VEHICLES
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Oct. 24, 1965, Ser. No. 504,353
Claims priority, application France, Nov. 17, 1964, 995,227, Patent 1,423,015
3 Claims. (Cl. 74—865)

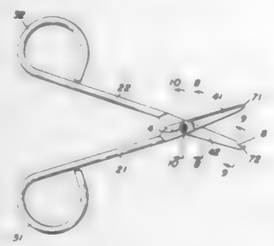


An automatic control mechanism for automobile gearboxes comprising a tachometric governor operatively connected to actuate a gearbox by means of jacks selectively actuated through transistorized amplifiers and discharge electromagnetic valves controlling distributors which feed the jacks. The transistor amplifiers have bases which are selectively grounded through a rest contact of the governor and connected to a positive power source through a damping resistance, the emitters are connected to the positive terminal through the exciting coil of said valve and the collectors are grounded.

3,374,694
METHOD OF MAKING SCISSORS
Arthur Eizenberg, Tarzana, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Oct. 22, 1965, Ser. No. 500,707
5 Claims. (Cl. 76—104)

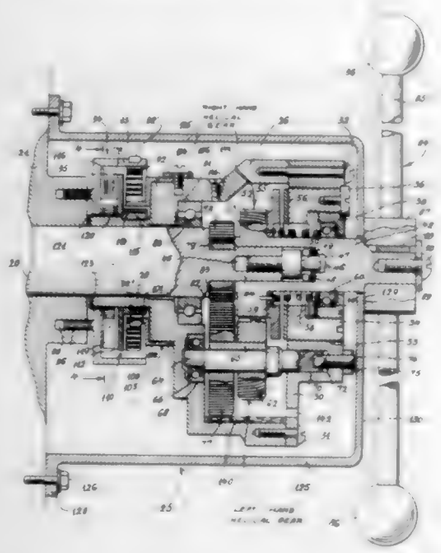
A method of making a pair of disposable suture scissors from wire stock. This method includes coining a blade section and forming a finger loop section in a piece of wire,

trimming the coined blade section to form a sharp burr, and restriking a face of this blade to make this sharp burr flush with the blade face. Finally, the scissor members are



plated and assembled to give a pair of disposable suture scissors in which grinding is not necessary to create sharp cutting edges.

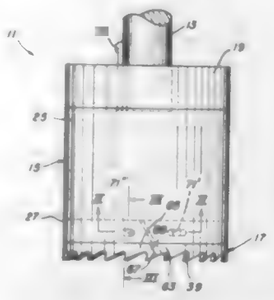
3,374,695
SPINDLE ADVANCE CONTROL FOR A DRILL PRESS
Arthur N. Lehberger, 256 Winfield Terrace, Union, N.J. 07083
Filed Jan. 18, 1966, Ser. No. 521,262
9 Claims. (Cl. 77—32.8)



A spindle advance control for a drill press comprising an attachment for the drill press adapted to effect closing of the free nonworking distance between the drill bit and work to be drilled by only a fraction of a turn of the operating handle of the drill press. The operating handle of the drill press is connected to the spindle advance shaft via a gearing mechanism which has an output to input gear speed ratio greater than 1 while the spindle is advancing freely and which has a speed ratio of 1-to-1 when the drill bit encounters the work or when the spindle has fully advanced through its free distance.

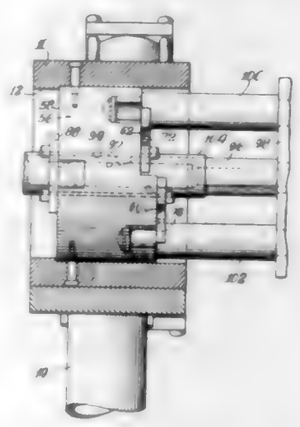
3,374,696
BIT MEANS
Walter E. Trevathan, McKenzie, Tenn., assignor to Walter Trevathan Corporation, a corporation of Tennessee
Filed Feb. 23, 1966, Ser. No. 529,490
8 Claims. (Cl. 77—69)

1. Bit means for forming a circular cut in a piece of work material comprising an elongated tubular body member adapted for rotation about its longitudinal axis and having a proximal end and a distal end, a cutting ring member having a proximal end and a distal end provided with cutting means, said members respectively including adjacent the distal end of said body member, and adjacent the proximal end of said ring member overlapping and mating stepped portions respectively attached to said members and telescopically received together to establish a substantially annular wall of said bit means extending from adjacent said proximal end of said tubular body



member to said distal end of said cutting ring member, one of said members being provided with apertures, the other of said members including projections projecting generally radially toward said one of said members and respectively into corresponding ones of said apertures for engagement with portions of said one of said members to secure said cutting ring member with respect to said body member.

3,374,697
METHOD AND APPARATUS FOR SEVERING A TUBULAR MEMBER
Walton S. Robinson, Tewksbury Township, Hunterdon County, N.J., assignor to Taylor Forge Inc., a corporation of Illinois
Filed Oct. 21, 1965, Ser. No. 499,172
14 Claims. (Cl. 83—35)

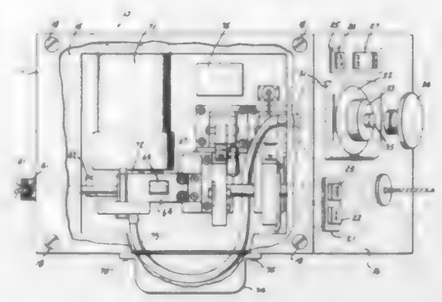


A method and apparatus for severing a tube blank from a tubular member by sequentially shearing out arcuate segments of the tubular member wherein the end portion of the tubular member is severed therefrom as a tube blank.

3,374,698
MACHINE FOR DISPENSING FLEXIBLE ELONGATED MATERIAL SUCH AS CORD AND THE LIKE
Richard J. Sleeper, 1307 W. Chicago Road, Sturgis, Mich. 49091
Filed Oct. 24, 1965, Ser. No. 504,478
18 Claims. (Cl. 83—171)

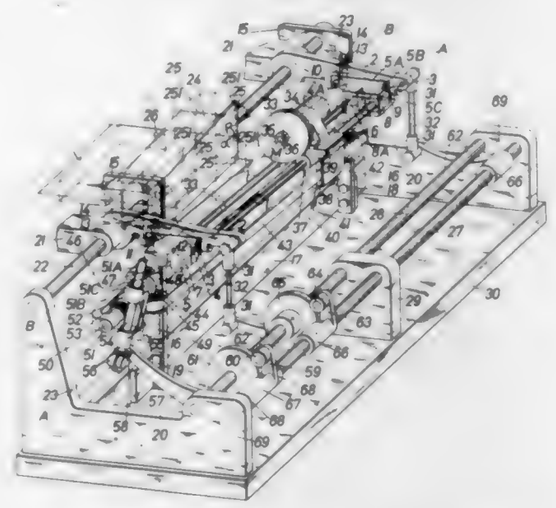
This invention resides in a line dispensing machine which is self-contained and provides portable characteristics. The mechanism has a drive mechanism which causes the movement of the line to pass through the machine.

The drive mechanism is adjacent a cutting mechanism both of which are controlled by a timer unit. The drive mechanism is controlled so that it will stop after a required length of line has been dispensed. The cutter mechanism is controlled so that it is not actuated until the drive mechanism has brought the line to a complete stop.



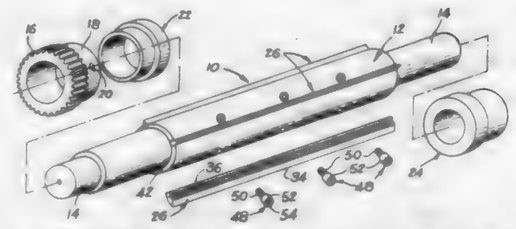
The line member is guided into and guided out of the dispensing mechanism by inlet and outlet tubes which surround the line member to control its passage. The mechanism contains controls to make dispensing manual or automatic and includes a jog switch to assist in initially loading the line member.

3,374,699
SHARPENING ARRANGEMENTS
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed July 28, 1965, Ser. No. 475,539
Claims priority, application Great Britain, Nov. 25, 1964, 47,832/64
12 Claims. (Cl. 83—174)



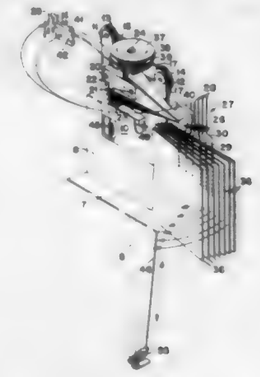
A rotary cutting device is described to cut, for example, tobacco, in which straight rotating cutting edges are inclined relative to the axis of rotation so that each cutting edge engages the tobacco progressively to obtain a slicing action rather than a chopping action. The invention provides a rotatable disc for sharpening the cutting edges while they are rotating. For ensuring that the cutting edges, notwithstanding repeated sharpening, remain straight, the sharpening disc is mounted in a lever arrangement operable by cams which are rotatable synchronously with the cutting edges so that the disc is reciprocated in the direction of the cutting edge which is being sharpened and is oscillated in a curved path transversely to the axis of rotation of the rotatable sharpening disc; means may be provided for feeding the sharpening disc towards the cutting edges.

3,374,700
BUTT CUTTING ROLL WITH REMOVABLE BLADE AND PRESS FIT GUIDE BEARINGS AND METHOD OF MAKING SAME
David H. Mages, Chicago, Ill., assignor to Webtron Corporation, a corporation of Illinois
Filed Oct. 21, 1965, Ser. No. 500,430
5 Claims. (Cl. 83—674)



An efficient butt-type cutting tool is constructed from a roller body of inexpensive, round bar stock that is longitudinally grooved radially to a depth defined at a precise distance from the point on the body selected as the center of the finished tool. Rings of hardened material are press fit into the bar stock and ground to a periphery concentric with the selected center of the tool, and an accurately formed cutter blade is removably but rigidly secured in the tool's groove to provide a precision tool.

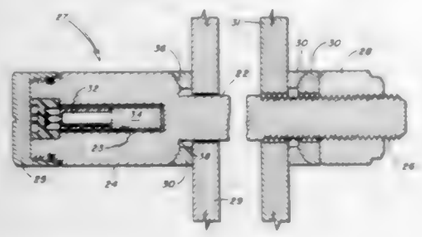
3,374,701
PAGE TURNING DEVICE
Fritz Wallenberg, 2 Bellevue Heights, Binghamton, N.Y. 13905
Filed Nov. 4, 1966, Ser. No. 592,207
3 Claims. (Cl. 84—521)



1. In an apparatus for turning the pages of a folder, particularly sheet music, comprising a support accommodating said folder in a position convenient for reading, a plurality of ferromagnetic page-engaging fingers each adapted to be placed between successive pages of said folder, said fingers being affixed to plates arranged over a pivot for movement in an arcuate path in a plane transverse to said pages, the rotation of each of said fingers over said pivot at substantially 180° effecting the turning of a page, a lifting arm pivotally supported over a stud placed adjacent to and at a predetermined distance from said pivot, said arm describing an arcuate path in substantially the same plane as the path of said fingers, the radial length of said arm being different than the radial length of said fingers, a permanent magnet affixed to the end of said arm and having a pole-face surface adapted to engage an adjacent finger, power means for rotating said arm in one direction from engagement position of said magnet over said arcuate path, the force of said magnet causing the attracted finger to follow said path thereby turning a page, said attracted finger during movement over said pivot being constrained due to the difference in radial length and pivot points between said arm and said finger to progressively slide over said pole face, the

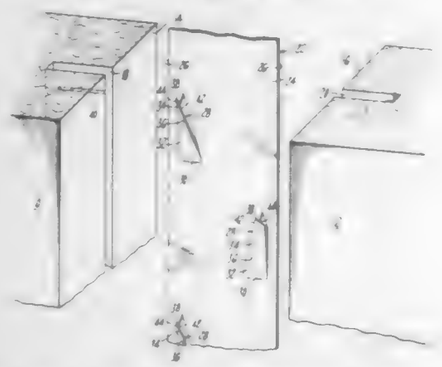
radial distance being so dimensioned with respect to the length of said surface as to effect disengagement of said finger from said magnet at the end of said page-turning travel, said arm upon rotation in the reverse direction being returned to pick up the next adjacent finger.

3,374,702
EXPLOSIVE BOLT
Vincent J. Menichelli, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 17, 1965, Ser. No. 514,744
7 Claims. (Cl. 85—1)



A mechanical fastening device severable by the detonation of a small quantity of explosive contained within the body of the device. The explosive is so located that separation occurs axially. There being no weakened or notched section, the device has a high tensile strength.

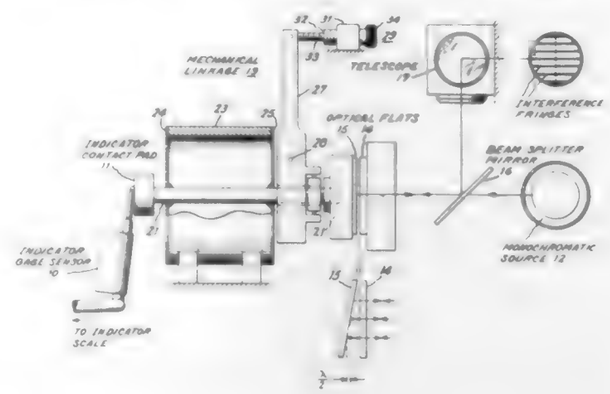
3,374,703
FASTENERS AND FASTENER ASSEMBLIES FOR BUILDING PANELS AND THE LIKE
William R. Davis, West Simsbury, Conn., and Thomas P. Anderson, Palatine, Ill., assignors to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Dec. 1, 1965, Ser. No. 510,785
11 Claims. (Cl. 85—13)



Spline fastener assemblies for joining building panels comprise a metal strip having biangularly deformed fastening teeth and may include a spacer strip having windows in registry with the teeth for camming the teeth into the panels during longitudinal displacement of the strip. The fastening teeth twistingly impregnate the panels due to their biangular configuration while applying a closing force on the panels. The spacers may include frame portions of various designs to provide a neat finished appearance.

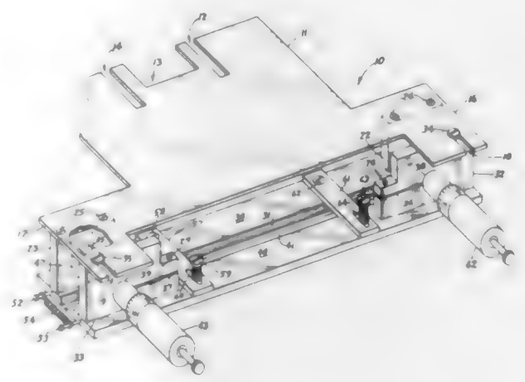
3,374,704
LINEAR CALIBRATING INTERFEROMETER
Millard S. Granger, Hillcrest, Binghamton, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 26, 1964, Ser. No. 370,302
4 Claims. (Cl. 88—14)

A precision instrument for measurement of minute linear displacements by use of an interferometer which generates linear interference fringes, movement of which through a complete cycle indicates a displacement of $\lambda/2$ of the light used in the interferometer. The instrument has a rod shaped anvil one end of which is used to sense the displacement to be measured, the other to drive one of two optical surfaces of the interferometer. The anvil is supported so as to permit only linear displacement of



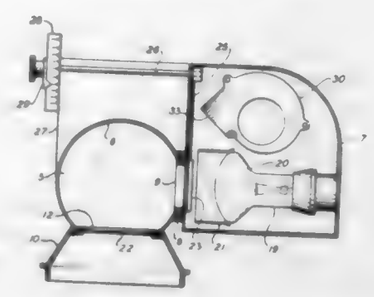
the anvil along its length. The anvil is mounted axially of a cylindrical drum mounted on the base with the anvil extending through both drum heads. The drum is inflexible, the heads elastic, metallic sheets limiting movement of the anvil to longitudinal movement.

3,374,705
OPTICAL SLIT APPARATUS
George H. Ott, Sr., St. Paul, Minn., assignor to Fabri-Tek Incorporated, Minneapolis, Minn., a corporation of Wisconsin
Filed Oct. 23, 1965, Ser. No. 503,935
9 Claims. (Cl. 88—24)



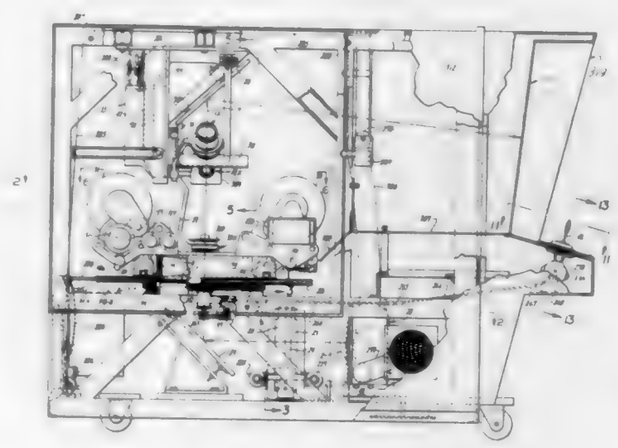
1. Adjustable optical slit apparatus comprising:
a first strip having a slit defining edge;
means connected to said first strip for stationary mounting thereof;
a second strip having a slit defining edge;
means coupling said strips and adapted to allow linear slidable motion of said first strip with respect to said second strip, said slit defining edges being in adjacent relationship;
means connected to said strips yieldingly biasing said second strip toward said first strip;
a first pair of blocks mounted one on each end of said first strip; and
a second pair of blocks mounted on said second strip each opposite one of said first pair of blocks, each of said second pair of blocks having mounted thereon precision adjustment means adapted to contact the opposite one of said first blocks for precision adjustment of the slit defined by said edges.

3,374,706
VARIABLE CONTRAST LIGHT SOURCE FOR CONDENSER ENLARGERS
Louis L. Weisglass, New York, N.Y., assignor to Simmon Brothers, Inc., Woodside, N.Y., a corporation of New York
Filed June 1, 1965, Ser. No. 460,048
4 Claims. (Cl. 88—24)



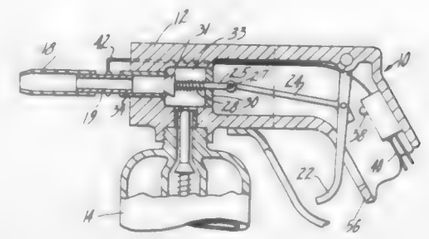
A variable contrast light source for condenser enlargers is shown including a light mixing chamber and controllable means for passing a plurality of filters between the light source and the mixing chamber, the light being cooled by a blower, the enlarger lens being carried at the end of a bellows structure.

3,374,707
VARIABLE WIDTH SCANNING FILM VIEWER
William D. Johnson, Santa Clara, Vincent Grippi, Jr., Novato, and Edward C. Aguilar, Berkeley, Calif., assignors to Houston Fearless Corporation, doing business as Nuclear Research Instruments, a division of Houston Fearless Corporation, a corporation of California
Filed Sept. 2, 1965, Ser. No. 484,579
8 Claims. (Cl. 88—28)



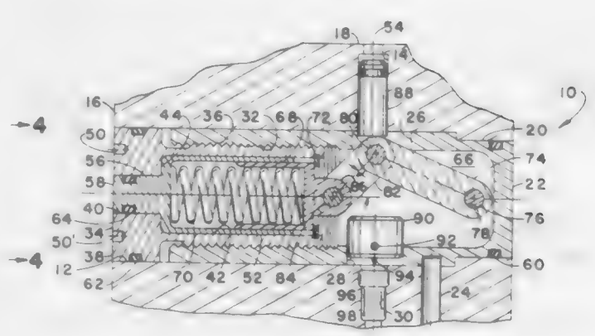
An apparatus for viewing continuous-reel film transparencies at different magnifications and at varying film speeds consisting of a viewing screen; a light source: reel means for positioning the film in the optical path between the light source and screen; means for driving the reel means rotationally and laterally; a plurality of projection lenses movable into the optical path; a plurality of condensing lenses movable into the path of the light from the light source in varying combinations; and power and control means for moving the projection lenses, the condensing lenses, the light source and the reel means.

3,374,708
ELECTRICAL ANTI-PERSONNEL WEAPON
George A. Wall, North Carver, Mass.; Eileen T. Wall, executrix of said George A. Wall, deceased, assignor to Eileen T. Wall, North Carver, Mass.
Filed Jan. 26, 1965, Ser. No. 428,096
11 Claims. (Cl. 89—1)



An electrical anti-personnel method and apparatus. The method comprises electrically energizing a stream of conductive liquid and directing the stream at a person. The apparatus comprises a pair of conductive liquid sources, a pair of conduits, a pair of nozzles, and a pair of conductive means contacting the liquid, each pair of elements separate from the other, whereby a pair of oppositely charged streams of liquid may be directed against a person.

3,374,709
FORCE-RESPONSIVE ACTUATOR
Claude E. Campbell, Levittown, Pa., and Robert B. Abrams, Hamilton Square, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 23, 1967, Ser. No. 625,432
5 Claims. (Cl. 89—1)

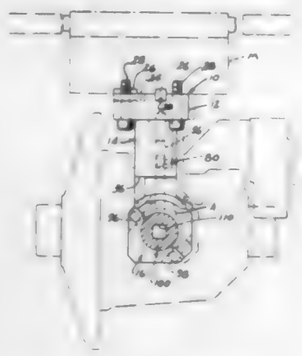


Actuator comprising a toggle joint one link of which is resiliently biased toward the pivotal axis of the other link thereof, and a plunger arranged to move the joined ends of said links toward an operating contact.

3,374,710
MACHINE TOOL VIBRATION DAMPENER
Robert Irwin Sattler, St. Clair Shores, Mich., assignor to La Salle Machine Tool, Inc., Warren, Mich.
Filed Jan. 3, 1966, Ser. No. 518,201
7 Claims. (Cl. 90—11)

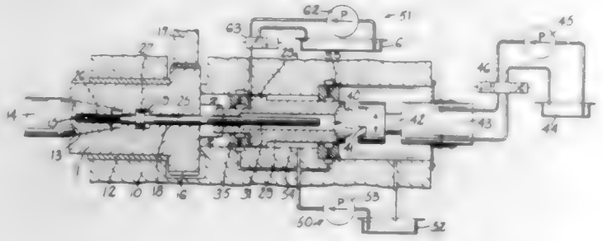
1. In a vibration dampening machine tool, the combination of,
a support member;
a generally flat base on said support member for mounting same;
a double ended cutting tool rotatably disposed at generally right angles to said support member;

and at least one pre-loaded member carried by said support member for engagement with said cutting



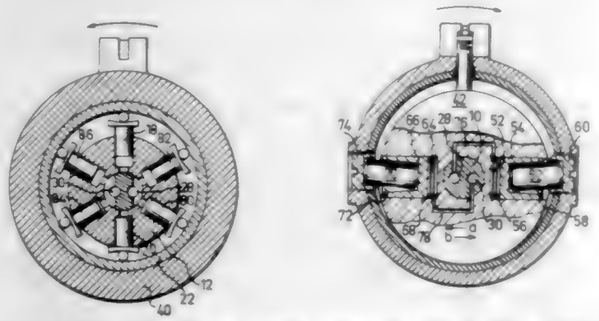
tool so as to eliminate any vibration when said cutting tool is caused to engage a workpiece.

3,374,711
POWER DRAWBAR
Alan J. Saunders, Manchester, Conn., assignor to Pratt & Whitney Inc., West Hartford, Conn.
Filed Feb. 24, 1966, Ser. No. 529,787
10 Claims. (Cl. 90—11)



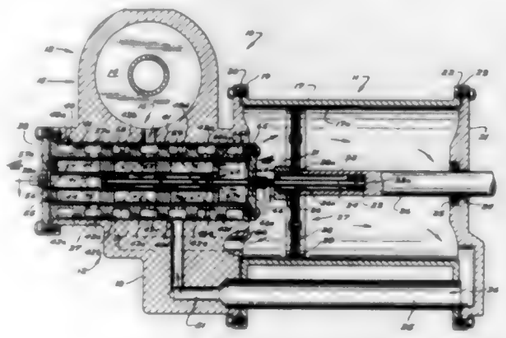
1. A power drawbar apparatus, comprising a torque tube having a bore therein with a way formed within the bore, a drawbar having a portion thereof slidably mounted in the bore of the torque tube, said drawbar having a spline mounted for slidable axial movement in said way, and said drawbar having means thereon at one end thereof for engaging a tool.

3,374,712
HYDRAULIC RADIAL PISTON MACHINES
Gustaf Erik Björklund, Stockholm, Sweden, assignor to Rederi AB Soya, Hägersten, Sweden
Filed Apr. 25, 1966, Ser. No. 545,155
Claims priority, application Sweden, May 5, 1965, 5,886/65
5 Claims. (Cl. 91—176)



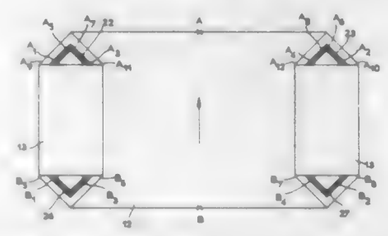
A hydraulic radial piston machine comprises a central pintle serving as a valve for the working medium, a rotor mounted on the pintle, and pistons radially movable in cylinder spaces in the rotor. These spaces communicate with the pintle through ports, the rotor defining with the pintle an intake passage and a discharge passage, the cylinder spaces communicating with those passages through the ports. A track ring is mounted eccentrically of the pintle and rotor and surrounds the rotor and bears against the pistons to cause the pistons to reciprocate in the rotor upon rotation of the rotor. The pintle is provided with a holder mounted for movement in a direction to vary the eccentricity of the machine and for movement substantially at right angles to that direction. To do this, pistons are provided which are slidable in the holder, one of the pistons being urged away from the holder by the pressure of the high-pressure passage and the other of the pistons being urged away from the holder by the pressure of the low-pressure passage. In this way, differences in pressure in the intake and discharge passages are utilized to move the ring and the pintle relative to each other in an amount and in a direction such that the angle between the diametrical plane in which the ports begin to open into the intake and discharge passages and the diametrical plane in which the pistons reverse increases with increasing pressure difference.

3,374,713
RECIPROCATING FLUID MOTOR
Arthur E. Broughton, Glens Falls, N.Y., assignor to Broughton Corporation, Glens Falls, N.Y., a corporation of New York
Filed Dec. 30, 1966, Ser. No. 606,406
6 Claims. (Cl. 91—312)



This invention relates particularly to the control portion for a reciprocating fluid motor and more particularly to a valving structure which includes a stationary spool valve with porting defined therethrough to enable the flow of fluid to either and from either side of an oscillating drive piston with a movable spool valve provided internally thereof to control the shifting of the flow of fluid to the respective sides of the oscillating drive piston and having a control member internally thereof which control member is mechanically linked to the drive piston for movement therewith but is not mechanically linked to the movable spool valve but rather is fluidly linked therewith for controlling of fluid to the respective sides of the removable piston for shifting thereof when the drive piston reaches the respective ends of its stroke. The shifting of the shiftable spool valve is accomplished by moving the control rod with the drive piston past a valving port which will cut off pressure to one end of the slidable spool valve and introduce pressure to the other end thereof such that shifting of the movable spool valve will be accomplished and will thereby, in turn, accomplish shifting of the porting in the stationary valve to direct fluid flow to the opposite side of the drive piston. The linkage of the control rod and the spool valve is accomplished only through fluid linkages thereby eliminating any mechanical connection therebetween other than that required for sealing.

3,374,714
INSTALLATIONS FOR THE MANUFACTURE OF LARGE-CAPACITY BAGS
Marius Berghgracht, Le Vieux Logis, Place Joyale, Vineuil-St.-Firmin, Oise, France
Filed Aug. 10, 1965, Ser. No. 478,554
Claims priority, application Luxembourg, Aug. 20, 1964, 46,804
19 Claims. (Cl. 93—8)

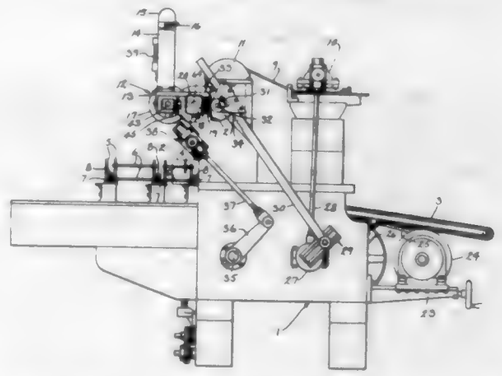


1. Installation for the manufacture of large-capacity bags from tubes of strong paper or the like, comprising a tubemaker for forming the tubes to be transformed each into a bag and a bottom-maker for forming a flat bottom at least at one end of each tube, characterized in that it includes means for supporting a pile of tubes delivered by the tubemaker and intended to feed the bottom-maker, a continuous conveyor for the bags delivered by the bottom-maker and placed separately on the conveyor, and means arranged adjacent the conveyor for controlling the correct folding of the bottoms of the bags during the passage of the bags under these control means, by checking the position of marks being part of the bottoms, said control means causing the rejection of the malformed bags.

3,374,715
PROCESS FOR IMPROVING FOLDING ENDURANCE
John W. Koning, Jr., Madison, Wis., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Aug. 18, 1965, Ser. No. 480,826
1 Claim. (Cl. 93—36)

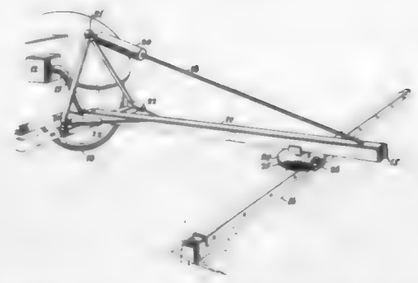
This invention relates to a process for improving the folding endurance of fiberboard containers that have been treated to increase the strength properties of the container. The invention is carried out by prefolding the treated fiberboard prior to curing the treatment impregnant.

3,374,716
JAM-UP PREVENTION APPARATUS FOR A WEB FEEDING MECHANISM
James W. Lawrie and William H. Janecek, Milwaukee, Wis., assignors, by mesne assignments, to Cleveland Container Corp., a corporation of Delaware
Filed Nov. 22, 1965, Ser. No. 508,993
5 Claims. (Cl. 93—37)



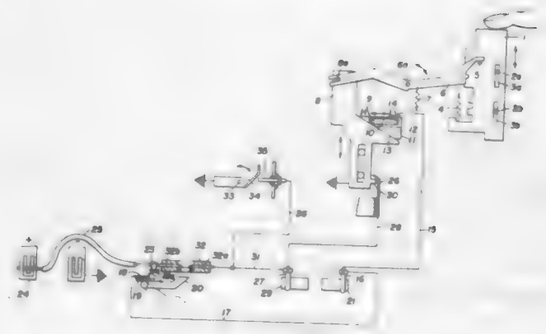
In a partition assembly machine, an idler feed roller is held in engagement with a driven feed roller by a pinion controlled cam. A rack to drive the pinion is fastened to the piston of a pneumatic cylinder. A finger rides on the partition web fed between the feed rollers to be moved by any deflection of the web. The finger is connected to actuate a switch by its movement, and the switch energizes a solenoid that operates an air valve to actuate the pneumatic cylinder to rotate the cam and release the idler feed roller.

3,374,717
POWER FLOAT
John L. Reynolds, Jr., R.D. 1, Portville, N.Y. 14770
Filed June 27, 1966, Ser. No. 560,416
7 Claims. (Cl. 94—45)



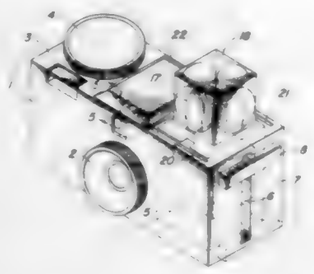
1. An apparatus for placing a surface on plastic concrete or the like to be attached to a rotatable source of power comprising boom means extending from the source of power in the direction of the surface to be attained by the concrete, float means carried by said boom means adapted to be moved substantially parallel thereto, means moving said float means along the longitudinal axis of said boom means in response to movement of the rotatable source of power, means for agitating said float means as it is moved along the axis of said boom, and means above the surface of said float means supporting said boom means in a predetermined position.

3,374,718
LOW LIGHT AND FLASH INDICATOR FOR CAMERAS
William T. Hochreiter, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 4, 1965, Ser. No. 437,221
11 Claims. (Cl. 95—10)



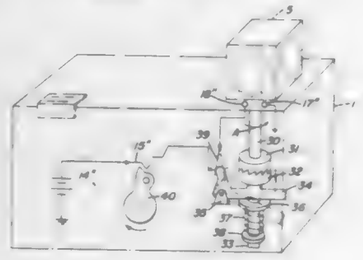
A signal in the viewfinder warns the operator when a flashbulb is required. A second signal indicates whether an inserted flashbulb is good. The apparatus includes a movable meter needle and a sensing cam which closes the circuit to the first signal when the shutter release slide is partially depressed and the needle is in the low scene brightness region. Partial depression of the slide also closes the circuit to the second signal if a flashbulb is in position and if it is a good flashbulb.

3,374,719
STORAGE AND ACTUATING MEANS FOR FLASH MECHANISM
William Howard Horton and James Edward Dierks, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 12, 1965, Ser. No. 471,178
5 Claims. (Cl. 95—11)



In a photographic camera, a socket for a multilamp flash package and means for manually moving the socket and package from a storage recess in the camera where the socket and package are stored when flash operation is not desired, to the exterior of the camera when flash operation is desired. The socket is automatically placed in the camera flash synchronizing circuit when brought to the exterior position.

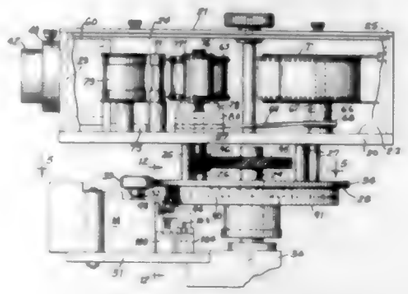
3,374,720
SELECTOR ALLOWING FLASH OR NON-FLASH CAMERA OPERATION WITH IN-PLACE FLASH-LAMPS
Donald M. Harvey, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 12, 1965, Ser. No. 471,013
10 Claims. (Cl. 95—11.5)



Either flash or non-flash operation can be chosen with the flashcube in place at all times. In one embodiment the camera has both a flash shutter release button and a non-flash button. In another embodiment the camera has a single shutter release button and a selector lever having a flash position and a non-flash position. The selector apparatus can be separate from or part of the indexing means and has a first position in which it prevents indexing and maintains the flash circuit open and a second position in which it permits indexing and permits closing of the flash circuit.

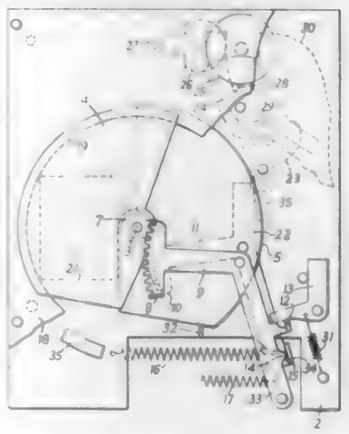
3,374,721
PANORAMIC CAMERA
Clifford F. Van Praag, Oceanside, N.Y., assignor to A.V.E. Corporation, New York, N.Y., a corporation of New York
Filed Apr. 26, 1965, Ser. No. 450,621
3 Claims. (Cl. 95—15)

A panoramic camera is provided which is adapted to be rotated through a desired arcuate distance, the camera having its film set in synchronization with the camera rotational speed. An adjustable exposure slot is also provided and means are provided for discontinuing the rota-



tion of the camera at any of an infinite number of camera positions as determined by the angular rotation of the camera housing.

3,374,722
FOCAL PLANE SHUTTER
Rolf Noack and Johannes Weise, Dresden, Germany, assignors to Veb Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany
Filed June 11, 1965, Ser. No. 463,312
5 Claims. (Cl. 95—60)

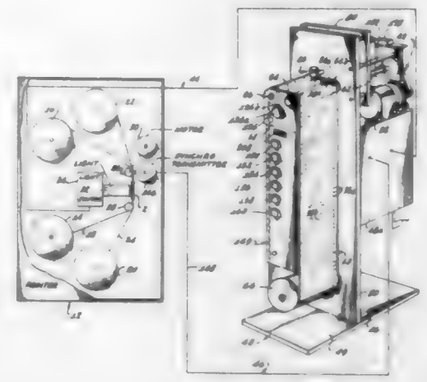


1. A photographic focal plane shutter having rotating opening and closing discs, which successively open and close the image aperture at a time interval determinable by an escapement mechanism, comprising a pair of rotatably mounted double-armed levers, each of which comprises a toothed segment arm having a drive arm connected with the end of a drive spring, the one lever as opening lever meshing with a pinion of the opening disc and the other lever as closing lever meshing with a pinion of the closing disc.

3,374,723
AUTOMATIC ELECTRICAL CONTROL APPARATUS AND FILM PRINTER CUING SYSTEM EMBODYING SAME
Harlan L. Baumbach, 14332 Mulholland Drive, Los Angeles, Calif. 90024
Filed Mar. 16, 1965, Ser. No. 440,131
30 Claims. (Cl. 95—75)

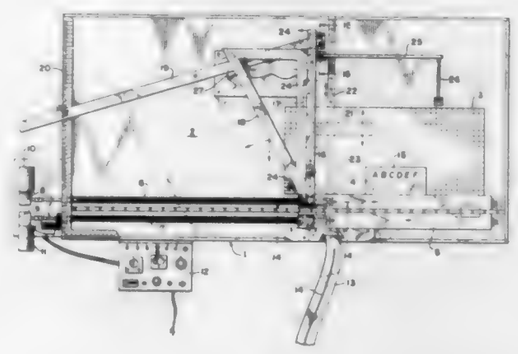
An automatic electrical control system for film printers and other devices which require initial recording and subsequent retrieval of control information in aggregately synchronized relation to the movement of a member external to the control system, the control system having an information storage member, a transcribing head for recording control information on and retrieving the control information from the storage member, and a transport mechanism powered by a synchro motor electrically

linked to a synchro transmitter driven by the external member for driving the storage member and transcribing



head in relative movement in unison with the movement of the external member.

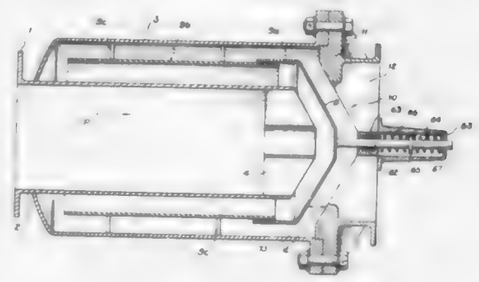
3,374,724
REPROPORTIONING MACHINE
Ruben H. Torres, New York, N.Y., assignor to The Headliners International, Inc., New York, N.Y.
Filed Apr. 5, 1965, Ser. No. 445,567
5 Claims. (Cl. 95—75)



A reproportioning machine for distorting and changing an image from a negative and printing said distorted image on a photosensitive material by exposing the negative and printing material through a small elongated aperture that moves progressively over the negative until the entire negative has been exposed. The negative and printing material are each mounted on a separate platen and move relative to each other during exposure.

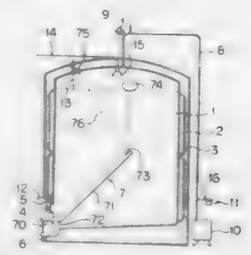
3,374,725
VALVE FOR AIR RAID SHELTERS
Paul Schierse and Gunter Franke, Lubeck, Germany, assignors to Ewers & Miesner Hartgusswerk und Maschinenfabrik G.m.b.H., Lubeck, Germany
Continuation of application Ser. No. 428,446, Jan. 27, 1965. This application Nov. 22, 1966, Ser. No. 596,345
Claims priority, application Germany, Jan. 31, 1964, E 23,316; July 11, 1964, E 27,387; Dec. 17, 1964, E 28,381
6 Claims. (Cl. 98—119)

An air intake or exhaust valve for an air raid shelter and which closes rapidly when subject to shock wave pressure is composed of a housing, a valve seat and a mo[illegible]low piston valve head in the housing, and an air i[illegible]e which extends to within the skirt of the valve head. [illegible] is of greater diameter than the intake pipe so that when the valve is closed by a shock wave the intake pipe communicates with the interior of



the housing to deflect the shock wave. A spring holds the valve in normally open position.

3,374,726
BEVERAGE FERMENTATION AND STORAGE TANK OF A LARGE CAPACITY
Sho Takayanagi, Tokyo, Japan, assignor to Asahi Breweries Ltd., Chuo-ku, Tokyo, Japan, a corporation of Japan
Filed Aug. 18, 1966, Ser. No. 573,280
Claims priority, application Japan, June 7, 1966, 41/3,663
2 Claims. (Cl. 99—275)

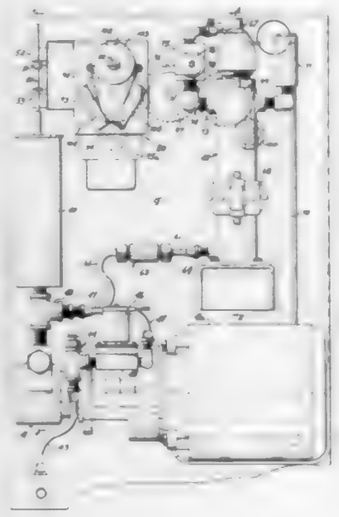


A beverage fermentation and storage tank apparatus having an externally cooled and insulated tank having an inlet and an outlet adjacent the bottom thereof, an exhaust pipe communicating with the upper portion of the tank and having pressure relief valve means for limiting the maximum pressure within the tank, one-way valve means connecting the exhaust pipe to the atmosphere for supplying air to the exhaust pipe when the pressure therein is less than atmosphere pressure, a vacuum relief valve connected with the exhaust pipe and rotary cleaning means mounted in the upper portion inside the tank.

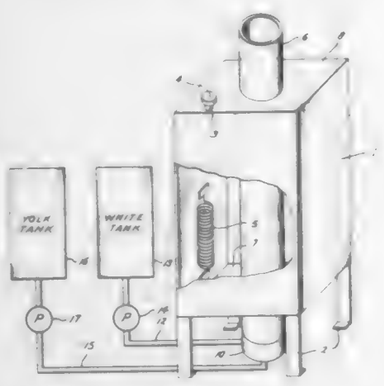
3,374,727
BEVERAGE DISPENSING APPARATUS
Robert C. Wright, Huntingdon Valley, Pa., assignor to Rudd-Melikian, Inc., Warminster, Pa., a corporation of Pennsylvania
Filed June 20, 1966, Ser. No. 558,925
5 Claims. (Cl. 99—282)

1. In apparatus for sequentially brewing beverage portions by passing a hot brewing liquid through particulate beverage material, said apparatus comprising a pair of brewing members arranged for relative movement toward and away from a position of engagement with each other in which they cooperate to define a beverage extraction chamber in which said briquettes are successively confined and wherein one of said members has an inlet port for the introduction of hot water thereinto and the other has an outlet port for the discharge of extract therefrom; a reservoir for storing a supply of water, a water line connected to said reservoir, said line being adapted to be

connected to an outside source of water under line pressure, an inlet valve in said line and means controlling said valve for selectively admitting water from said outside source to fill said reservoir with a metered quantity of water, a positive displacement pump, an inlet for said pump connected to said reservoir and a pump outlet, a boiler including a boiler chamber and a heater for heating a supply of water in said chamber, the outlet of said pump being connected to the bottom of said chamber, an outlet line connecting the boiler chamber with the extraction chamber inlet port, a discharge valve in said outlet line, means for opening said valve when said brewing members are in said position of engagement, and for operating said pump to pump the water in said reservoir into said boiler, thereby displacing hot water under pressure through said outlet line, and pressure regulating means for said pump, said pressure regulating means being operable to maintain the pressure in said extraction chamber at a substantially constant level above atmospheric throughout an extraction operation.

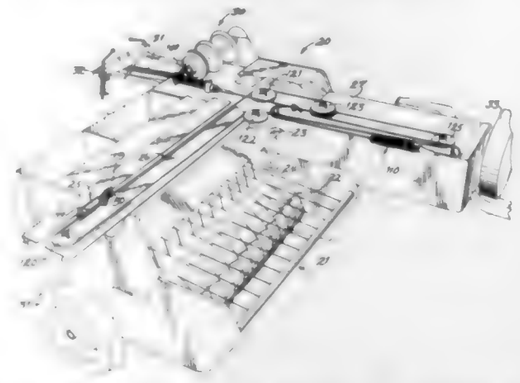


3,374,728
EGG COOKING DEVICE
Roy A. Owens, 1002 Bissonnet, Houston, Tex. 77005
Filed Mar. 24, 1965, Ser. No. 442,449
4 Claims. (Cl. 99—353)



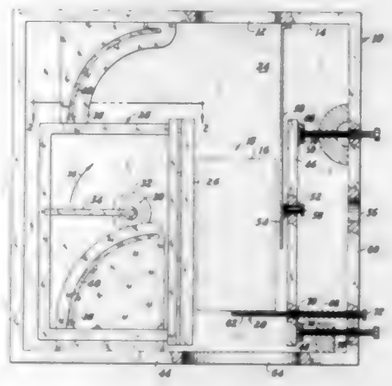
Apparatus for producing an egg product comprising means for propelling egg whites and egg yolks in a continuous stream through a cooking tube with the yolk in concentric relation with the whites.

3,374,729
AGRICULTURAL APPARATUS
Patrick L. May, Memphis, Tenn., Clyde G. Vidrine, Thibodaux, La., and Ralph E. Beyer, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed June 23, 1965, Ser. No. 466,327
11 Claims. (Cl. 100—142)



A feeding mechanism for a baler, and having a carriage reciprocable rectilinearly into and out of the bale chamber. The carriage is connected to the baler plunger by a cable having a feed run for moving the carriage toward the bale chamber as the plunger moves in its retractive stroke, a return run fo moving the carriage away from the bale chamber as the plunger moves in its compressive stroke and a run anchored to the baler support.

3,374,730
CRUSHING DEVICE
Hall H. Cain, R.R. 4, Spencer, Ind. 47460
Filed June 13, 1966, Ser. No. 556,995
4 Claims. (Cl. 100—233)

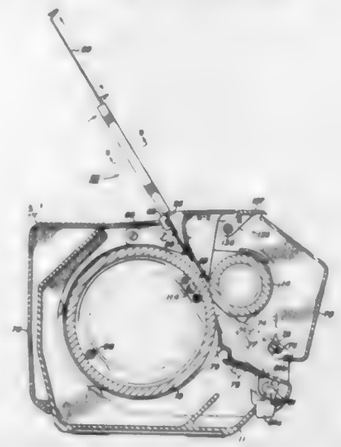


A can-crushing device, power-operated, in which the crushing is achieved by a compound relative movement of crushing walls, the movement first being primarily longitudinally of the can axis, thereby achieving a can-weakening effect with relatively little power, and subsequently the movement being primarily transversely of the can axis achieving the can-crushing with relatively little power after the can has been weakened.

3,374,731
FABRIC PRINTING
Ward Thorne, Westport, Conn., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Nov. 30, 1964, Ser. No. 414,713
2 Claims. (Cl. 101—129)

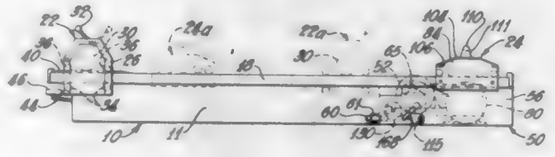
1. A method of printing a pattern on a pile fabric comprising disposing over the fabric in proximity to the surface of the pile a screen at least as fine as 300 mesh having blocking at portions thereof so as to form said pattern at the unblocked parts; selecting a liquid coloring material of sufficient viscosity to be retained against gravity on said screen and to maintain a mechanically graded level; applying said liquid coloring material in a relatively thick layer of liquid coloring material on the face of the screen opposite to the fabric to a controlled substantially uniform thickness of at least 1/50 inch by mechanical grading; directing a transient gas pressure increase against the free surface of said liquid coloring layer sufficient to cause passage of all the coloring material overlying said unblocked screen portions therethrough into said pile fabric.

3,374,732
SELF-ALIGNING COPY DRUM STRIP-OUT MECHANISM FOR REPRODUCTION MACHINES
Donald G. Mallory, Penfield, James R. Cassano, Rochester, and Robert H. Liva, Henrietta, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 30, 1965, Ser. No. 491,565
3 Claims. (Cl. 101—132)



A reproduction apparatus of the pressure-transfer type incorporating a three-way roller bearing support for the rotatable copy drum and driving pressure roll, toggle type force generating means for holding the pressure roll in pressure contact with the copy drum, a foldable paper tray, automatic gripping means for attaching the transfer sheet to the copy drum, means for separating copies from the transfer sheet, and programming control means adapted at the last copy programmed to release the gripping means whereby the transfer sheet is expelled with the last copy.

3,374,733
CARD PRINTING MACHINE AND TYPE INKING APPARATUS
William F. Goodrich, Adrian, Mich., assignor to The Signpress Company, Adrian, Mich., a corporation of Illinois
Filed Mar. 22, 1965, Ser. No. 441,582
6 Claims. (Cl. 101—269)

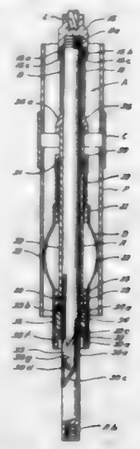


6. In a card printing and type inking apparatus, in combination, support means including a type supporting bed, parallel track means mounted on the support means at edge regions of the type supporting bed, a printing carriage mounted on the track means for reciprocable movement over the type supporting bed, card clamping means disposed adjacent one end region of the type supporting bed, a type inking carriage mounted on said track means for reciprocable movement independently of the printing carriage over said type supporting bed, a plurality of rotatable type-engaging inking rolls carried by said inking carriage, an ink supply roll journally mounted on the support means, motive means, drive means connecting the motive means with the ink supply roll for rotating the ink supply roll, said type-engaging inking rolls being disposed to successively engage the surface of the ink supply roll during reciprocable movement of the type inking carriage adjacent the ink supply roll, an ink distributing roll of lesser length than the ink supply roll, a shaft supporting the ink distributing roll for rotatable movement, said ink distributing roll being engageable with the ink supply roll to effect rotation of the ink distributing roll, said shaft having a multiple return groove therein, and means carried by the ink distributing roll engaging in said groove to effect reciprocable movement of the ink distributing roll lengthwise of the shaft during rotation of the ink distributing roll.

3,374,734
METHODS FOR PROVIDING PLANOGRAPHIC PRINTING PLATES WITH IMAGE AREAS CONTAINING CHLORINATED RUBBER
Loni Schell, Mainz, and Fritz Uhlig and Jürgen Braun, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Filed Aug. 20, 1964, Ser. No. 391,042
Claims priority, application Germany, Aug. 23, 1963, K 50,618/63
7 Claims. (Cl. 101—466)

7. A process for modifying the image areas of an imaged planographic printing plate which comprises inking up the plate with a greasy ink, wiping the plate with a solution of water-soluble colloid, drying the thus-applied colloid coating, scribing through the coating in the areas to be modified, applying a lacquer containing chlorinated rubber in an organic solvent to the scribed surface, drying the plate and rinsing the plate with water.

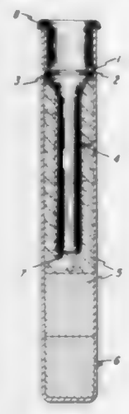
3,374,735
APPARATUS FOR LOCATING COLLARS AND THE LIKE IN WELL PIPE
Lawrence K. Moore, 3716 Ingold St., Houston, Tex. 77005
Filed Sept. 29, 1966, Ser. No. 582,936
10 Claims. (Cl. 102—21.8)



An apparatus for locating collars or the like in a well pipe, and which may be used in conjunction with detonator apparatus, wherein means are provided for multiple selective collar location in a single run of the apparatus in a

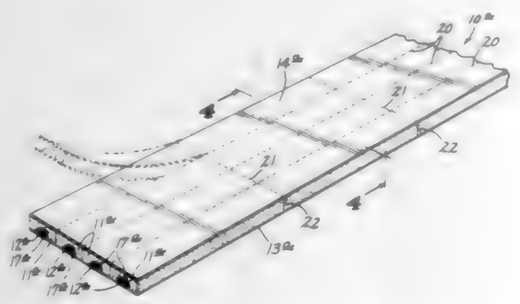
well pipe by the manipulation of a wire line, whereby a plurality of collars at different elevations may be located by movement of the apparatus in either an upward or downward longitudinal direction in the well pipe and without requiring electrical cables extending from the apparatus to the surface or a removal of the apparatus from the well pipe.

3,374,736
WATER DESENSITIZED WATER WORK BOOSTERS
Richard Dow, Bloomingdale, Paul E. Kelly, Wanaque, and Paul A. Ramsdell, Ridgewood, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 2, 1966, Ser. No. 569,703
8 Claims. (Cl. 102—24)



An explosive booster which is desensitized after exposure to water by ingress of water through at least one aperture in the booster facilitated by a surfactant on at least one surface adjacent said aperture.

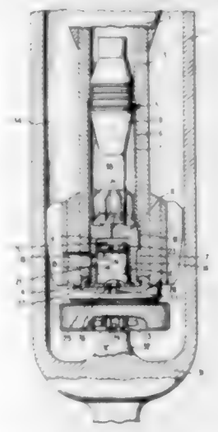
3,374,737
DETONATING TAPE
Earl A. Pike, Rte. 4, Box 203, Excelsior, Minn. 55331
Filed Feb. 15, 1967, Ser. No. 616,213
16 Claims. (Cl. 102—27)



The basic embodiment disclosed is an adhesive backed, flexible detonating tape that can be cut to a desired length and quickly attached to a secondary explosive or other object. The tape has a central carrier member with a longitudinal channel formed therein to house and support an explosive column having a predetermined configuration. The carrier member is adhesively attached between a base member and a top member, both of which have a ribbon-like configuration. A suitable adhesive coating is provided on the bottom surface of the base member.

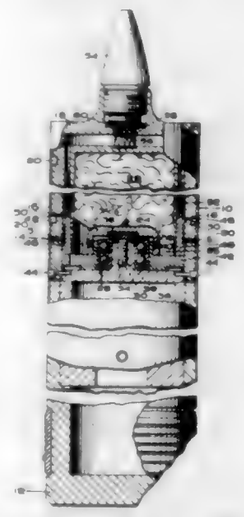
Also disclosed is an embodiment in which a plurality of carrier members are supported in a side-by-side relationship between a base member and a top member, both of which are provided with one or more rows of longitudinal perforations to permit the tape to be longitudinally split into sections. Each section has the same construction as to the above described basic embodiment. Both embodiments can be formed into a roll for ease of storage and handling.

3,374,738
PRACTICE AMMUNITION FOR MORTARS
Heinz Gawlick and Rudolf Stahlmann, Furth, and Erich Mauer, Cologne-Weidenpesch, Germany, assignors to Dynamit Nobel A.G., Troisdorf, Germany
Filed Mar. 18, 1966, Ser. No. 535,565
Claims priority, application Germany, Apr. 9, 1965, D 46,999
10 Claims. (Cl. 102—49.1)



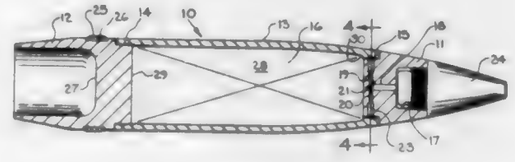
Practice ammunition of a mortar wherein a dummy projectile resembling the live projectile includes an inset barrel for firing therefrom a practice projectile. The practice projectile is held within a practice cartridge case having a bottom piece and a rearwardly opening central chamber rearward of the bottom piece for receiving therein an ejection charge that is ignitable to eject the dummy projectile from the mortar.

3,374,739
PAYLOAD RECOVERY SYSTEM
Robert L. Rodger, Hackettstown, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 16, 1966, Ser. No. 536,587
4 Claims. (Cl. 102—56)



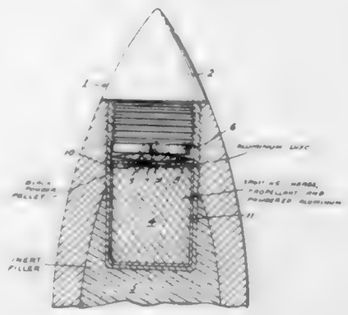
A payload recovery system including a hollow cylindrical body attached at the forward end of the payload to be recovered. Included inside said hollow cylindrical body is a ballute device attached to a thrust bearing which is attached to the payload. A fuze means is located at the forward end of the hollow cylindrical body which, through its normal mode of operation, will initiate the separation of the hollow cylindrical body from the payload thereby allowing the ballute device to inflate and allow the payload to return to earth safely.

3,374,740
PROJECTILE
John J. Voda, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Dec. 8, 1965, Ser. No. 514,167
3 Claims. (Cl. 102—57)



A projectile having nose and tail sections and a relatively thin skin connecting said sections and enclosing a payload. Detonation means in the nose section when exploded causig the thin skin to split, and further splitting thereof is caused by atmospheric and centrifugal forces so the skin is removed, releasing the payload.

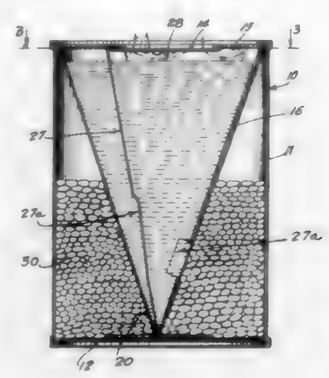
3,374,741
SPOTTING CHARGE
Ottis W. Bass, Baltimore, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 28, 1965, Ser. No. 517,161
3 Claims. (Cl. 102—87)



A spotting charge is placed in the nose of a projectile and the spotting charge is ignited by a time delay device at a predetermined time after the projectile is fired.

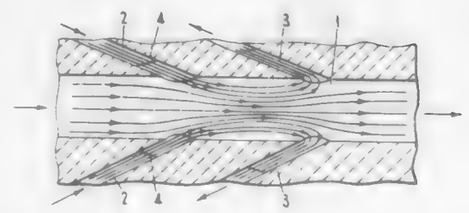
3,374,742
VAPOR-PRODUCING ARTICLE
Alan D. Brite, 5147 W. Jefferson Blvd., Los Angeles, Calif. 90016
Filed Mar. 22, 1965, Ser. No. 441,657
3 Claims. (Cl. 128—187)

A self-contained and disposable article for producing steam and vapor of a desired vaporizable material by adding water to a composition comprising an alkaline earth oxide, which has been coated with an oil to delay the rate of the resultant exothermic reaction. Said article is cylindrical with a cone-shaped cup inside separating the water from the oxide except where small openings in



the cup are provided. There is a central opening in the article where the water is added and the vapor escapes.

3,374,743
PUMPS
John Richard Stutely, Ruislip Manor, and Anthony John Walkden, Beckenham, England, assignors to The General Electric Company Limited, London, England, a British company
Filed Aug. 24, 1966, Ser. No. 574,758
Claims priority, application Great Britain, Sept. 2, 1965, 37,530/65
16 Claims. (Cl. 103—1)

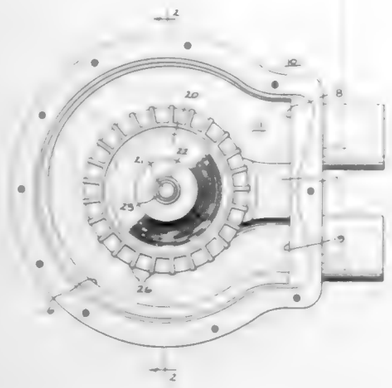


A pump especially suitable for use with corrosive fluids has a fluid-filled pump channel with side passages extending from points spaced along the channel length, each of which passages is partly filled with the fluid the amount of which lying within the passage is caused to pulsate by means entirely external of the channel, the passage inlets being directed along the channel length and the pulsations between the passages being so phased as to induce a net forward flow of the fluid. A liquid can be pumped by variations in the gas pressure applied over the liquid level within the passages, and the passages and passage inlets can be arranged so that for each passage the suck strokes as well as the blow strokes induce a forward flow of the liquid.

3,374,744
TURBINE PUMP
Daniel N. Toma, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Jan. 24, 1966, Ser. No. 522,544
1 Claim. (Cl. 103—3)

A turbine pump is provided with a generally annular chamber having a pair of openings for ingress and egress of fluid. A turbine impeller is mounted for reversible rotation within the chamber to pump fluid in one opening

and out the other. The clearance between the impeller and the circumferential wall of the chamber is at a mini-



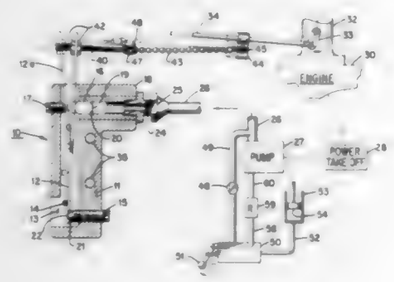
mum adjacent one opening and continuously increases toward the other opening.

3,374,745

HYDRAULIC THROTTLE CONTROL

Kenneth R. Moffett, Euclid, Ohio, assignor to Hunter Manufacturing Company, Solon, Ohio, a corporation of Ohio

Filed Oct. 7, 1966, Ser. No. 585,065
6 Claims. (Cl. 103—16)



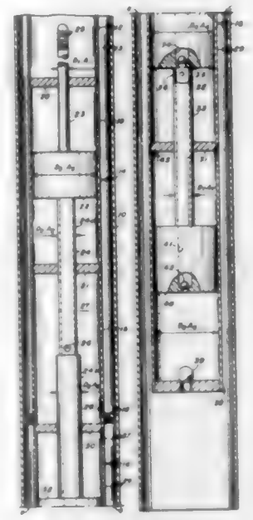
1. An automatic control device for controlling the throttle of an engine driving a hydraulic pump, said automatic control device comprising a housing, a cylinder in said housing, a piston in said cylinder, a conduit connected to one end of said cylinder and communicating with the outlet side of said pump, whereby pressure on the outlet of said pump tends to move said piston away from said one end of said cylinder toward the other end of said cylinder, leaf-spring means in said housing and having a first end engaging said piston for moving said piston toward said one end of said cylinder and a second end, a pivot pin engaging said leaf-spring means intermediate the ends of said leaf-spring means, a first adjustable screw means positioned to engage said spring means on one side thereof for limiting travel of said spring means in response to pressure in said cylinder, a second adjustable screw means engaging the opposite side of said spring means from said first screw means and at a point on the opposite side of said pivot pin from said first screw means for adjusting the force exerted by said spring means on said piston, and coupling means operatively coupling said leaf-spring means to the throttle to open the throttle in response to an increase in fluid pressure in said cylinder and to permit the throttle to close when the fluid pressure in said cylinder is reduced.

3,374,746

HYDRAULICALLY OPERATED SUBSURFACE MOTOR AND PUMP COMBINATION

Roy L. Chenault, Dallas, Tex., assignor to United States Steel Corporation, a corporation of Delaware

Filed July 11, 1966, Ser. No. 564,152
6 Claims. (Cl. 103—46)



1. In a hydraulically operated subsurface motor and pump combination, the motor of which includes a barrel, cylinder heads at the ends of said barrel, a reciprocable piston within said barrel, and tubular upper and lower piston rods attached to said piston and extending through said cylinder heads, an improved pump spaced below said motor and comprising upper and lower pump barrels arranged in tandem, cylinder heads fixed to the upper and lower ends of said upper pump barrel, a standing valve carried by said lower pump barrel at its lower end, respective upper and lower reciprocable elements within said pump barrels, the lower piston rod of said motor being attached to said upper reciprocable element, and a traveling valve in said upper reciprocable element, said combination including a spacer connecting the barrel of said motor and said upper pump barrel and through which the lower piston rod of said motor extends, said third-named piston rod having a port for fluid to enter and leave said upper pump barrel, the lower piston rod of said motor having a port for discharging fluid from said motor and pump into said spacer, said spacer having a port for discharging fluid from the combination, the cross-sectional areas of the parts of said motor and pump being proportioned to provide the same ratio of power piston area to displacement area on both upstrokes and downstrokes of said piston and reciprocable elements, thereby achieving a balanced load.

3,374,747

SELF-PRIMING DEVICE AND METHOD FOR PUMPS

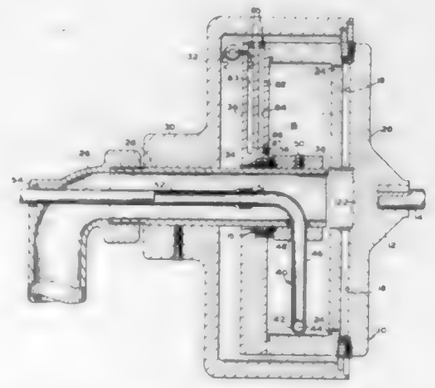
William L. King and John F. King, Eugene, Oreg., assignors to Loyal W. James and Leonard James, both of Eugene, Oreg.

Filed Aug. 19, 1966, Ser. No. 573,659
14 Claims. (Cl. 103—101)

This application discloses several different pump embodiments all of which utilize the aspirator or jet pump principle to withdraw air from the suction line of the pump either directly or indirectly, and significantly, use air or other ambient gas as the aspirating or pumping

medium rather than requiring an auxiliary supply of water, steam or the like as in prior art self-priming pumps. The aspirating means in each instance includes an aspirator head, or velocity tube, incorporating a venturi, reverse pitot nozzle, orifice or equivalent means to create a zone of low pressure within the tube as air at high velocity generated by rotation of the pump's impeller passes axially therethrough. The aspirating means also includes a suction tube which opens into the zone of low pressure within the velocity tube and extends into communication with the pump's suction line so that the air within the line will be drawn through the suction tube toward the velocity tube, thereby evacuating the suction line to permit the fluid to be pumped to enter such line and the impeller.

In one illustrated embodiment, the velocity tube is mounted on the outside of a rotatable pump casing and the suction passage extends through a wall of the casing and opens into the main pump chamber, which is in communication with the suction line, so that upon rotation of the casing, air exterior to the casing passes through the velocity tube to reduce pressure within the casing and suction line.



In a second embodiment the velocity tube is stationarily mounted within the main chamber of a rotatable pump casing which incorporates radial impeller passages within its walls, and the suction tube passes from the chamber into the suction line of the pump. The high velocity airstream created within the chamber by rotation of the pump's impeller means passes through the velocity tube to draw air from, and thereby reduces pressure in, the suction line.

In a third illustrated embodiment the self-priming device is incorporated in a conventional centrifugal pump having a stationary casing and rotatable impeller within the main chamber of the casing. In this embodiment the velocity tube of the self-priming device is mounted on an interior wall of the pump casing on the discharge side of the impeller, and the suction tube passes from the velocity tube exteriorly of the casing to the suction side of the impeller so that the airstream created by rotation of the impeller passes through the velocity tube to suck air from the suction line of the pump.

3,374,748

PUMP

Jerald S. Marsh, Cedar Falls, Iowa, assignor to Viking Pump Company, Cedar Falls, Iowa, a corporation of Iowa

Filed May 27, 1966, Ser. No. 553,377
2 Claims. (Cl. 103—126)

1. In a reversible pump of the internal gear type, the combination comprising

(1) a housing,

(2) a rotor gear journaled in the housing,

(3) means for driving said rotor gear,

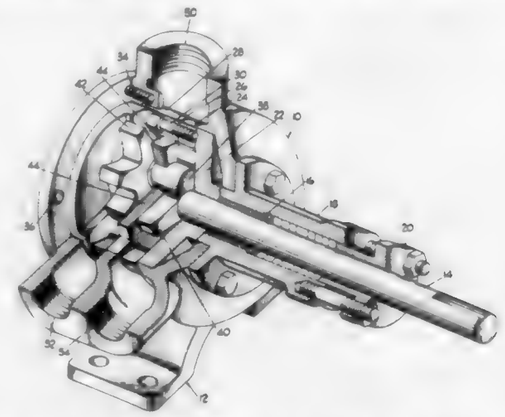
(4) a toothed rotor ring fixed on the teeth of said rotor gear, the teeth of the ring forming extensions of the teeth of the rotor gear,

(5) a head forming a cover plate for said housing,

(6) an idler pin extending within said housing, from said head, and eccentrically mounted with respect to the toothed rotor,

(7) a divider plate mounted on said idler pin,

(8) idler gears mounted on said idler pin on each side of said divider plate, one of said idler gears



being adapted to intermesh with teeth of said rotor gear and the other idler gear being adapted to intermesh with teeth of said rotor ring,

(9) a crescent-shaped projection extending from said head into the space between said rotors and said idler gears, and

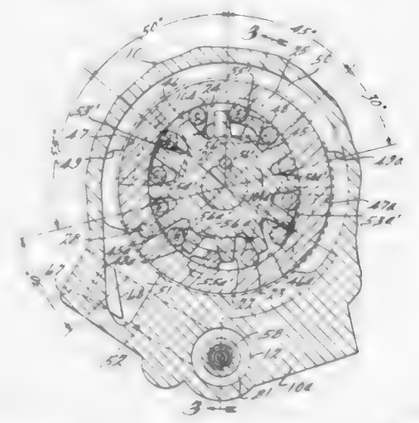
(10) ports in said housing providing fluid inlet and outlet means.

3,374,749

PORTING FOR BALANCED HYDRAULIC ROLLER PUMP

Carl A. Pace, Jr., and Christopher Nuss, Warren, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Jan. 3, 1967, Ser. No. 606,934
23 Claims. (Cl. 103—136)



Rollers carried within circumferential notches in a pump rotor ride along an out-of-round cam surface to pump fluid from radially outer and inner inlet ports (associated with inlet cam arcs of increasing radius) to radially outer and inner outlet ports associated with outlet cam arcs of decreasing radius. The outer inlet ports are restricted and open axially into radially outer portions of the notches subsequently to the axial opening of the inner inlet ports into the notches at locations radially inwardly of the rollers, the latter opening being subsequent to appreciable movement of the rollers along the inlet cam arcs, thereby to effect a gradual fluid pressure rise in the rotor notches and a radial pressure gradient

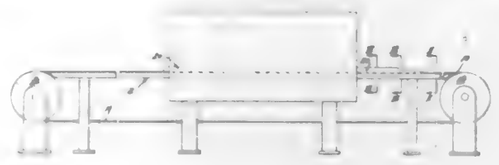
enhancing roller stability within the inlet cam arcs. The inner outlet ports discharge high pressure fluid axially from the notches and are arranged to exert unbalanced fluid pressure force axially in one direction on the ends of the rollers as they move along approximately the trailing thirds of the outlet cam arcs, thereby to end load these rollers and enhance their stability.

3,374,750
PUMP
Heinz K. Hetz, Doylestown, Pa., assignor to Yarway Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 28, 1966, Ser. No. 568,528
13 Claims. (Cl. 103—152)

1. In a pump assembly comprising a diaphragm pump having a pumping chamber, a work chamber, a valve-controlled inlet and valve-controlled outlet for said work chamber, and a pumping port for admitting a pulsating liquid pumping fluid to said pumping chamber to flex the diaphragm and effect pumping of work fluid through said work chamber; and a rotary pump for supplying a pulsating pumping fluid to said pumping port; the improvement wherein said pumping chamber includes means to vent gaseous fluid from said pumping chamber comprising a passage in the top of the pumping chamber, a shaft intersecting said passage to separate the passage into a lower branch and an upper branch, said shaft including pocket means operable upon displacement of said shaft between first and second positions to alternatively register respectively with the top of said lower branch and the bottom of said upper branch, means to introduce liquid pumping fluid into said upper branch, and means to displace said shaft successively between said first position wherein said pocket receives a predetermined volume of fluid from the top of said lower branch, and said second position wherein said pocket receives said predetermined volume of liquid pumping fluid from the bottom of said upper branch, whereby any gaseous fluid in said pumping chamber is transferred to said upper branch upon displacement of said shaft from said first position to said second position and pumping fluid is transferred from said upper branch to said chamber upon displacement of said shaft from said second position to said first position.

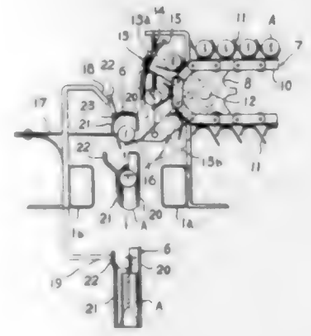
3,374,751
BAKING OVEN AND METHOD
Charles R. Werner, Grand Rapids, Mich., assignor to Werner Machinery Company, Grand Rapids, Mich., a corporation of Michigan
Filed June 10, 1965, Ser. No. 462,982
11 Claims. (Cl. 107—54)

A baking oven having an endless conveyor member passing through it, in which the endless conveyor member is a normally flat, flexible belt which is given a trough-shape as it passes through the oven by contact with generally vertical forming means in the nature of flanges disposed at the edges of the belt at the entrance to and through the oven, such that the belt itself forms the container for the dough which is to be baked in the oven. The dough is deposited upon the belt as the same enters



the oven and is given the aforesaid trough-shape, and the dough is baked as the belt carries it through the oven. At the outlet of the oven, the belt resiliently resumes its normally flat shape and separates from the edges of the baked product, which is subsequently removed from the flat belt prior to the point at which the latter returns to the inlet of the oven on its endless travel.

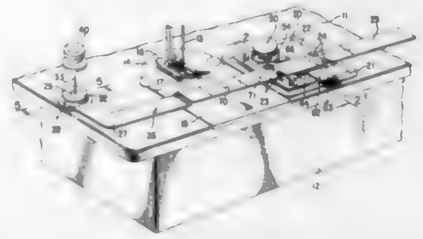
3,374,752
TRANSPLANTER
Atsushi Shirozu, 644 Chuo, Shiroishi-cho, Sapporo, Hokkaido, Japan
Filed Aug. 9, 1966, Ser. No. 571,246
Claims priority, application Japan, Mar. 22, 1966, 41/26,235
5 Claims. (Cl. 111—2)



A transplanter for paper cylinders containing seeds, said transplanter comprising means adapted to receive said cylinders from a supply means and convey them to a lever pivotally mounted on the frame of the transplanter. At least one cylinder holder is also carried by the frame and is adapted to grasp the cylinders from the lever and convey the cylinders to a planting position with respect to the frame, and means are provided for releasing the cylinders from the cylinder holder upon the former reaching said planting position.

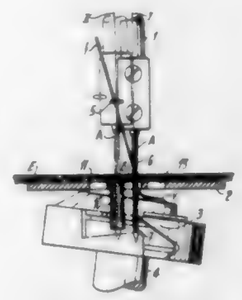
3,374,753
CIRCULAR STITCHING ATTACHMENT FOR SEWING MACHINES
Joseph G. Rakacs, Cranford, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 9, 1966, Ser. No. 578,198
4 Claims. (Cl. 112—2)

1. A circular stitching attachment for a sewing machine having a work supporting bed, a thread engaging needle reciprocable in an endwise path relatively to said work supporting bed, and a work feeding mechanism effective adjacent to said needle path for transporting work fabric in a direction transversely across said work supporting bed, said attachment comprising a base, means for securing said base rigidly to said sewing machine work supporting bed, a work fabric engaging pivot pin, a carrier arm supporting said pivot pin, guide means on said base plate slidably constraining said carrier arm for movement lengthwise of said work supporting bed, a locking element engageable with said carrier arm adjac-



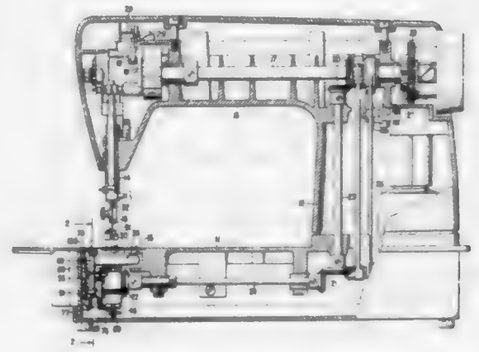
ent to said guide means, spring means anchored on said base plate and biasing said locking element against said carrier arm, and an operator influenced finger grip associated with said locking element for at will shifting said locking element in opposition to said spring means out of engagement with said carrier arm.

3,374,754
ARRANGEMENT FOR BASTING ON A SEWING MACHINE
Rolando Gianinazzi, Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a corporation of Switzerland
Filed Feb. 16, 1966, Ser. No. 527,655
Claims priority, application Switzerland, Mar. 19, 1965, 3,886/65
1 Claim. (Cl. 112—158)



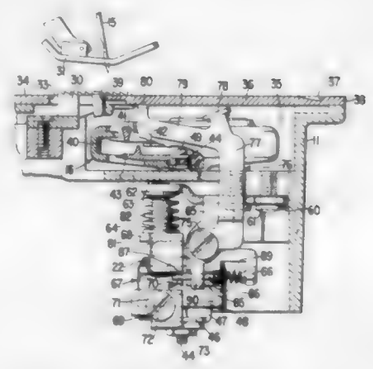
1. In combination with a zigzag stitch sewing machine, a needle bar, a needle carried by said bar, a thread carried by said needle, a needle hole plate over which a piece of fabric is adapted to be moved, said hole plate provided with a perforation system extending transversely across the path of movement of said piece of fabric, said needle bar adapted to be reciprocated selectively through two different points of the perforation system during movement of the piece of fabric thereover to provide a zigzag seam, a hook disposed beneath the needle hole plate, means for moving the hook to engage the thread carried by the needle at the end of each downward movement thereof through either of said two points, a tubular member secured to and extending downwardly from said needle hole plate and surrounding the path of the needle reciprocating through one of said two points, whereby engagement of the hook with the thread carried by the needle is prevented when the needle moves downwardly through said tubular member at said one point to limit the stitches produced to those obtained by the needle when passing through the other of said points while performing a basting operation.

3,374,755
THREAD REPLENISHING MECHANISMS FOR LOCKSTITCH SEWING MACHINES
Henry D. Chaplin, Jr., Cranford, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 26, 1965, Ser. No. 450,834
6 Claims. (Cl. 112—181)



A control mechanism is disclosed for rendering effective and ineffective devices for replenishing bobbin thread in a bobbin in place in the loop taker of a sewing machine. The control mechanism is accessible for influence by the operator through the access opening in the sewing machine which is ordinarily provided for access to the bobbin. Closing of the slide cover plate for the access opening trips latch release mechanism automatically rendering the bobbin replenishing mechanism inoperative.

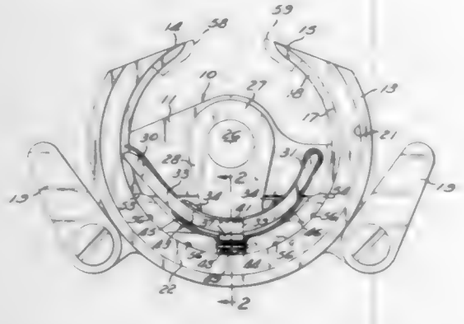
3,374,756
BOBBIN THREAD REPLENISHING CONTROL MECHANISM FOR SEWING MACHINES
John Blackwood, Linden, N.J., and George Thomas Genneken, Southington, Conn., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 22, 1966, Ser. No. 573,938
3 Claims. (Cl. 112—184)



1. In a lockstitch sewing machine having a frame, a loop taker carrier in said frame, a bobbin journaled in said loop taker, said sewing machine frame being formed with an upwardly open cavity through which said bobbin in said loop taker is accessible, a cover plate for said cavity, means shiftably supporting said cover plate on said sewing machine frame for movement in a predetermined path into and out of position covering said cavity, bobbin winding mechanism associated with said loop taker for effecting replenishment of thread on said bobbin in place in said loop taker, including a member shiftable relatively to said loop taker into and out of a position

for effecting bobbin winding, and a latch means constraining said member in effective bobbin winding position, and control means for said bobbin winding mechanism comprising a single lever fulcrumed relatively to said sewing machine frame and disposed in said cavity, said single lever having an operative connection with said shiftable member of said bobbin winding mechanism, an operative connection with said latch means, and a lever arm extending toward said cover plate, an operator influenced finger grip carried by said lever arm accessible to a machine operator when said cover plate is shifted out of position covering said cavity, and a latch release projection from said upstanding lever arm extending into the path of movement of said cover plate.

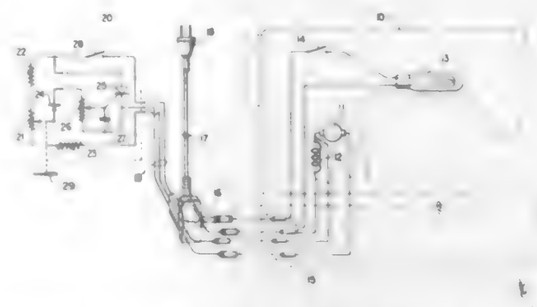
3,374,757
SHUTTLE RACE CLEANER
Sidney J. Hamlett, Parma, Ohio, assignor to White Consolidated Industries, Inc., Cleveland, Ohio, a corporation of Delaware
Filed Nov. 8, 1966, Ser. No. 592,860
7 Claims. (Cl. 112—192)



1. A sewing machine loop-taking mechanism comprising a housing defining a circular race, a shuttle slidably guided in said race for oscillating movement in an arcuate path, a shuttle driver mounted in said housing for oscillating movement about an axis concentric with said race and spaced radially inward from said race, an axial groove on the inner surface of said shutter driver, a shuttle race cleaner supported in said race and having an arcuate surface generally conforming with said race, a clip having parallel tabs secured to said shuttle race cleaner, one of said tabs engaged in said groove and the other tab engaging the outer surface of said shuttle driver whereby said shuttle race cleaner is oscillated with said shuttle driver by the driving connection of said clip in said groove and spring means operable to bias said shuttle race cleaner into engagement with said race.

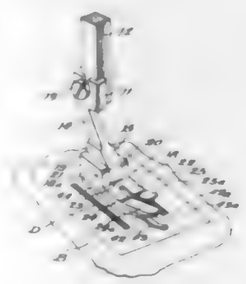
3,374,758
SILICON CONTROLLED RECTIFIER CIRCUIT ARRANGEMENT FOR SEWING MACHINE DRIVES
James W. Mais, Weehawken, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed May 26, 1965, Ser. No. 458,857
1 Claim. (Cl. 112—220)

1. In combination, a sewing machine, an electric motor driving said sewing machine, a controller positioned externally of said sewing machine, a plurality of electrical circuit elements mounted in said controller, detachable means for electrically connecting said circuit elements to said motor and to a source of voltage, said elements including a silicon controlled rectifier having control terminals, an operator-adjustable means controlling the firing voltage for said rectifier to control the motor speed over a desired range of speeds and a three-terminal pre-set trim potentiometer having two of its terminals connected directly to the respective control terminals of said rectifier to form a voltage divider for applying a pre-set portion of said firing voltage to the control



terminals of the rectifier in order to provide circuit compensation for the combined effect of the tolerance variations in said circuit elements such that said operator-adjustable means is effective over the desired speed range.

3,374,759
SEWING MACHINE PRESSER FOOT
Milton M. Longcore, Stronach, Mich., assignor to Glen Mfg., Inc., a corporation of Wisconsin
Filed Sept. 16, 1965, Ser. No. 487,727
8 Claims. (Cl. 112—235)



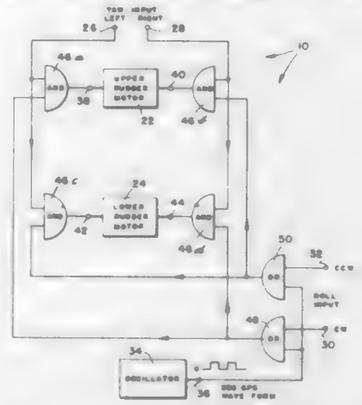
A presser foot usable in making "crack stitches" immediately adjacent a fold in a piece of material, said presser foot including a pair of laterally spaced toes defining a needle receiving slot therebetween. A guide surface is provided intermediate of said toes, and is adapted to be engaged by the fold in said material, whereby said material can be moved along said guide surface and a stitch made immediately adjacent said fold.

3,374,760
TORPEDO ROLL CONTROL SYSTEM
Edward M. Kimura, Pasadena, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 4, 1966, Ser. No. 548,820
2 Claims. (Cl. 114—20)

1. In an azimuth-roll control system for a torpedo including on-off control input consisting of a left yaw signal, a right yaw signal, a clockwise roll signal and a counter clockwise roll signal, the combination comprising;

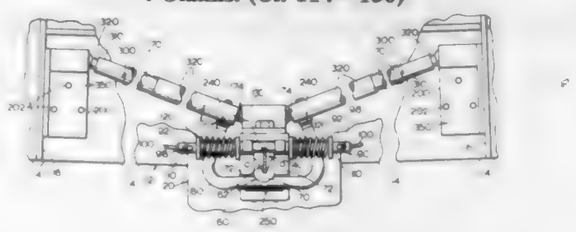
(a) upper and lower rudder surfaces separately pivoted about a common vertical axis, and upper and lower variable speed, reversible speed rudder motors geared to the upper and lower rudder surfaces, respectively,
(b) each of said motors having a first AND GATE input for receiving a signal for driving same in a predetermined angular direction about said axis and a second AND GATE input for receiving a signal for driving same in the opposite angular direction,

(c) means for generating a regular periodic pulse signal having a pulse frequency of an order of magnitude greater than the natural frequency of the motor,
(d) first and second OR GATES, said periodic pulse signal being applied to one input of each OR GATE, said clockwise roll signal and said counter clockwise signals being applied to the other input of the first and second OR GATE, respectively,
(e) means for applying the left yaw signal to the first AND GATE input of the upper motor, and to the first AND GATE input of the lower motor,



(f) means for applying the right yaw signal to the second AND GATE input of the upper motor and to the second AND GATE of the lower motor,
(g) means for applying the output of the first OR GATE to the first AND GATE of the upper motor and to the second AND GATE of the lower motor, and
(h) means for applying the output of the second OR GATE to the second AND Gate input of the upper motor and to the first AND GATE input of the lower motor.

3,374,761
HYDRAULIC STABILIZER FOR BOAT STEERING
Russell G. Bretz, Omaha, Nebr., assignor to Wave Crest Corporation, a corporation of Nebraska
Filed Sept. 12, 1966, Ser. No. 588,652
4 Claims. (Cl. 114—150)

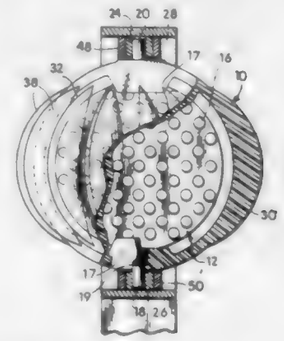


1. In combination: a boat, a controllable steering element mounted pivotally on said boat, a hydraulic stabilizer and control comprising a frame attached to said steering element, a valve attached to said frame and having two ports and having means forming a passageway between said ports, said valve having a controllable member movably mounted on said frame and operably correlated with said passageway forming means for closing said passageway at times and for opening said passageway at other times, spaced means to which control cable ends can be attached, means operably correlating said spaced means and said controllable member whereby when either one of said spaced means is pulled in a direction away from the other spaced means said controllable member is moved in a direction for opening said passageway, and means continually urging each of said spaced means into positions for causing said controllable member to be moved into a position for closing said passageway, a pair of elongated hydraulic cylinder assemblies, means attaching inner ends of said cylinder assemblies to said frame, means anchoring outer ends of said cylinder assemblies to said boat, said elongated assemblies extending generally in opposite directions approximately in parallelism with a line extending through said spaced means, each of said assemblies having a single port connected to one of said two valve ports, fluid in said cylinders and said passageway, and said cylinders being so constructed that said fluid flows from one of said cylinders to the other whenever one of said cylinders is shortened and the other lengthened by a movement of said frame toward the shortened cylinder, said means anchoring the outer end of each said cylinder assembly and the said means attaching the inner ends of each cylinder assembly to said frame together forming attachments sufficiently flexible as to permit a movement of said frame sufficiently for effective control of the steering of said boat.

3,374,762
PRESSURE INDICATOR
Alan W. Baldwin, 216 Panorama Drive, Oxon Hill, Md. 20021
Filed Jan. 27, 1967, Ser. No. 612,769
6 Claims. (Cl. 116—65)

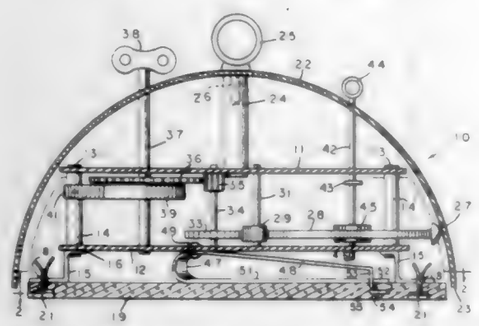
This invention is directed to a prosthetic device usable with a mechanical artificial hand to indicate the amount of force applied to an object being held in the hand. The device includes a sensing member in the form of a compressible chamber secured on the grasping face of a mechanical thumb which forces a non-compressible fluid through a tube to an indicator which is a part of a ring placed about one of the other fingers in view of the wearer. The pressure indicator indicates the force supplied in response to the finger pressure forcing an amount of fluid from the sensing chamber to the indicator. Upon release of the item held by the mechanical hand the fluid returns to the chamber with zero pressure indication of the indicator.

3,374,763
FLUID OPERATED FLASHER SIGNAL
Francis A. Browning, 2708 Bella Vista, Fort Wayne, Ind. 46809
Filed Feb. 24, 1965, Ser. No. 434,887
2 Claims. (Cl. 116—63)



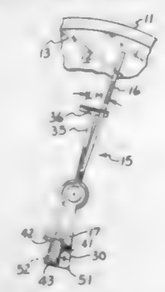
A flasher signal device is provided by a reflector element having a number of diffusor buttons mounted thereon and mounted within a rotating transparent globe causing a flasher effect signal when light comes into contact with the reflector element.

3,374,764
FLOOD DETECTOR
Martin R. Zawacki, 1857 W. Cullerton St., Chicago, Ill. 60608
Filed Oct. 21, 1965, Ser. No. 499,692
3 Claims. (Cl. 116—109)



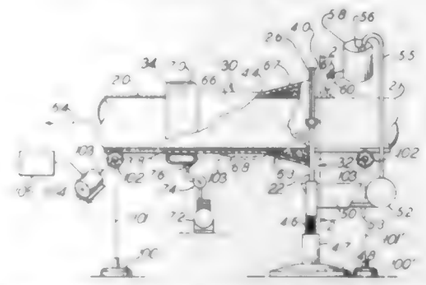
A flood detector for detecting and warning of flood conditions or leakage by the actuation of a bell mechanism having a bell dome covering a rigid frame housing a spring, gear and escapement mechanism for oscillating a bell clapper to strike the bell dome. An absorbent pad is spaced below the frame and a U-shaped spring has an upper arm secured to the frame with the spring located between the frame and the absorbent pad. One arm of the spring terminates in a tongue and the other arm terminates in a bifurcated end that receives the tongue, and a disintegratable wafer is positioned between the tongue and bifurcated end. When released by disintegration of the wafer, the upper arm lifts a release pin to allow the bell clapper and arm to oscillate and strike said bell dome thus providing an audible warning signal.

3,374,765
CHANGE INDICATOR FOR BAROMETER OR THE LIKE
Ralph H. Preiser, La Salle, Ill., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,063
1 Claim. (Cl. 116—129)



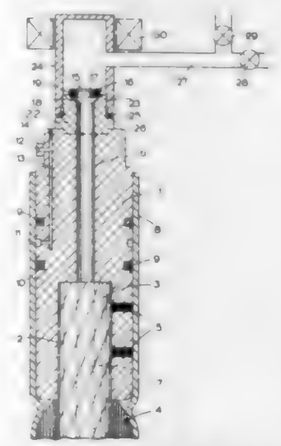
An indicating mechanism for a barometer or the like comprising an indicating hand having a tip portion and a tail portion, and a direction flag mounted on the dial under the indicating hand for indicating to the user the recent directon of movement of the hand. The direction flag is coupled to the indicating hand via a lost motion connection, and the tail portion thereof cooperates with notches in the tail portion of the indicating hand so that different corner areas of the flag are viewable in the notches at the respective limits of the lost motion, thereby providing an indication to the user of the recent direction of movement of the indicating hand. The tip portion of the flag is T-shaped, having a crossbar extending at right angles to the tip portion of the indicating hand, with a portion of the crossbar bent perpendicularly away from the dial. The bent portion of the crossbar has an elongated aperture, and the tip portion of the indicating hand is extended through said aperture to provide the lost motion connection.

3,374,766
EXTERNAL PIPE AND TUBE COATING APPARATUS
Jack W. Weaver, P.O. Box 1584 74101, and Barney L. Weaver, Jr., 5765 E. 30th Place 74114, both of Tulsa, Okla.
Filed July 25, 1962, Ser. No. 212,401
5 Claims. (Cl. 118—6)



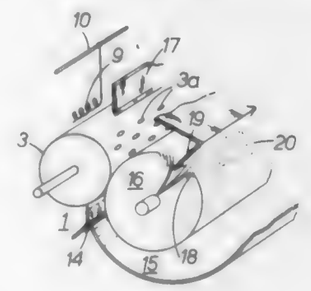
1. An apparatus for applying a coating to the exterior surface of a tubular workpiece comprising a sleeve member adapted to be disposed about and in substantial engagement with said tubular workpiece and formed of a flexible, imperforate material; said sleeve member having a cylindrical body portion including the outlet of said member and a conically configured inlet; means swingably mounting said sleeve member at the inlet and thereof whereby said member may adapt itself to non-axially-linear movement of said workpiece; said outlet being formed of an expandable material, a coating material supply associated with the inlet end of said sleeve whereby to apply coating material to said tubular workpiece; an annulus integral with and co-extensive with the outlet end of said member; fluid pressure means in communication with said annulus to effect uniform pressure and spacing of said outlet and with respect to an emergent coated portion of said workpiece whereby a coating of uniform and predetermined thickness may be produced.

3,374,767
MEANS TO IMPREGNATE A HOLLOW CABLE CORE
John Alfred Baskwell, Winchester, England, assignor to Pirelli General Cable Works Limited, London, England, a company of Great Britain
Filed June 4, 1965, Ser. No. 461,409
Claims priority, application Great Britain, July 27, 1964, 29,876/64
9 Claims. (Cl. 118—408)



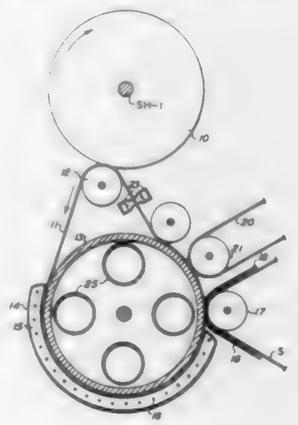
A tubular end plug utilized in impregnation of a sheathed conductor-cable and wherein one end includes means for sealing engagement with said cable and the other end includes (a) means adapted to be connected to a supply if impregnant and (b) magnetically responsive closure means whereby the cable and tubular plug may be sealed off with respect to the connecting means.

3,374,768
DEVELOPING APPARATUS FOR ELECTROPHOTOGRAPHY
Louis Frederick William Lawes, Walton-on-Thames, and Nicholas Gilbert Shreeve and Nandor Mihalik, Weybridge, England, assignors to Arlside Limited, Maidenhead, England, a corporation of the United Kingdom
Filed July 26, 1965, Ser. No. 474,743
8 Claims. (Cl. 118—637)



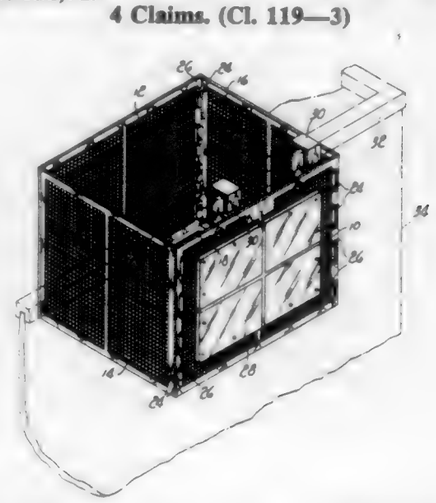
Developing apparatus for electrostatography includes a powder storage hopper opening to a metering roller having therein a plurality of recesses of predetermined shape, size and volume which are spaced axially and circumferentially from each other. A doctor blade scrapes excess powder off the metering roller, and a plurality of brush bristles are moved into contact with said metering roller and, at their point of contact with the metering roller, move in the same direction as the metering roller so as to pick up powder out of the recesses. A flick edge against and past which the bristles are moved discharges the powder from the bristles to form a powder cloud which will come into contact with the photoconducting surface of the apparatus.

3,374,769
TONER FUSING APPARATUS
Chester F. Carlson, Pittsford, N.Y., assignor, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 6, 1965, Ser. No. 511,652
3 Claims. (Cl. 118—641)



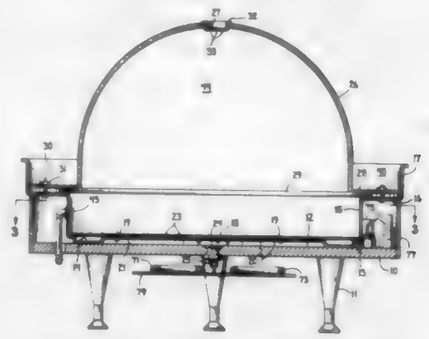
A fusing apparatus for fixing developed powder images having an intermediate transparent belt upon which is transferred the developed image and from which the developed image is placed upon a sheet of paper after being tackified while on the belt. To tackify the image, the image is passed between heater elements on one side of the belt and a reflective surface on the other for directing heat to both sides of the powder image layer.

3,374,770
FISH BREEDER
Henry Freudenberger, Mountainside, N.J., assignor to Springfield Tool & Die Company, Inc., a corporation of New Jersey
Continuation-in-part of application Ser. No. 544,224, Apr. 21, 1966. This application Feb. 14, 1967, Ser. No. 621,719
4 Claims. (Cl. 119—3)



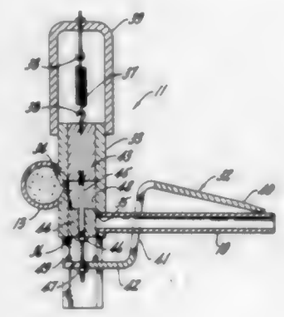
Fish breeder comprising a one piece molded plastic box like cage with perforated wall panels snapped together at their mating edges and collapsible to fold flat into overlapping relation.

3,374,771
AQUARIUM
Thomas J. Michie, 4131 Meadows Drive, Apt. E-1, Indianapolis, Ind. 46205, and John C. Bigham, Indianapolis, Ind.; said Bigham assignor to said Michie
Filed Jan. 18, 1966, Ser. No. 521,291
19 Claims. (Cl. 119—5)



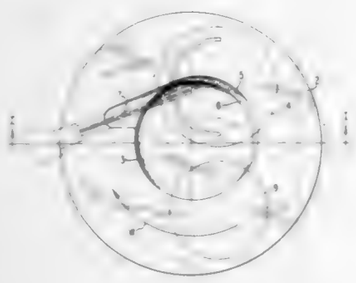
A dome-shaped aquarium provided with a water circulation system including a reservoir establishing an auxiliary or secondary pool separate from the main pool in the dome, and pumping means for delivering water to the main pool whence it will flow through an egress port substantially at the polar point of the dome back to the reservoir, which is open to the atmosphere for aeration of the circulating water, and from which it is drawn by the pump. In a preferred form, the auxiliary pool circumscribes the base of the dome and water from the egress port cascades over the external surface of the dome into the reservoir. Filter means, preferably of specified characteristics, may be cut into the circulating system by manipulation of valving means; a novel drainage means is provided; a cleaner device, energized by the circulatory water flow, may be utilized in either the main pool or the auxiliary pool; special illuminating means is provided; and the aquarium floor is specially designed to accommodate vegetation and other decorations without interference with circuation, cleaning, filtration and partial or complete drainage.

3,374,772
NOZZLE FOR ANIMAL FEEDING SYSTEM
Carl Van Gilst, Fort Atkinson, Wis., and Robert M. Peart, Lafayette, Ind., assignors to Purdue Research Foundation, Lafayette, Ind., a corporation of Indiana
Original application Sept. 20, 1965, Ser. No. 488,511, now Patent No. 3,326,187, dated June 20, 1967. Divided and this application Nov. 18, 1966, Ser. No. 595,423
4 Claims. (Cl. 119—71)



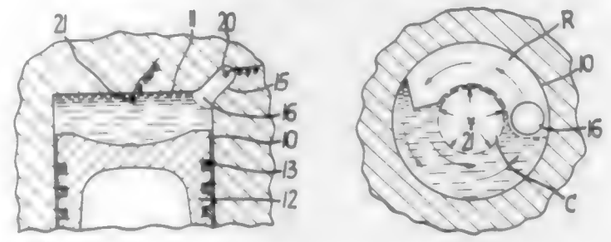
For feeding animals, a slurry of feed and water is circulated continuously from a hopper, through a dispensing conduit and then back to the hopper to be mixed with additional feed and water introduced into the hopper in amounts correlated with the amount of slurry withdrawn from the conduit by the animals. One or more feeding nozzles are connected to the conduit and each includes a valve operable to deliver a measured quantity of the slurry through the nozzle with a positive pumping action each time the animal bites on the nozzle.

3,374,773
DIESEL ENGINE
Hans O. Scherenberg, Stuttgart-Heumaden, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Apr. 27, 1965, Ser. No. 451,274
15 Claims. (Cl. 123—30)



The present disclosure relates to an improvement and to a further development of diesel engines, particularly four-cycle engines for motor vehicles, having an axially symmetrically shaped combustion chamber arranged in the piston and a nozzle arranged in the cylinder head obliquely, centrally or eccentrically to the center which injects the fuel in one or several compact jets against the combustion chamber wall in the same and/or opposite direction of an air vortex rotating about the combustion chamber axis. The fuel is caught on and held by one or more relatively wide shoulders in the central area of the combustion chamber walls. Preferably, a plurality of circumferential shoulders are provided, the decrease in width in the direction of the tangentially injected fuel and correspond in number to one or a multiple of the fuel jets. The shoulders may end circumferentially flush or in a splash off edge with respect to the combustion chamber wall.

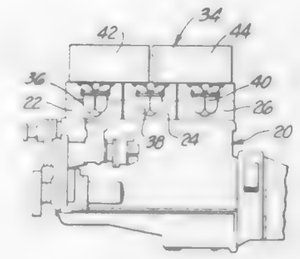
3,374,774
SUPERCHARGED OTTO GAS ENGINES
Gerhard Held, Augsburg, Germany, assignor to Maschinenfabrik Augsburg-Nuremburg A.G., Augsburg, Germany, a corporation of Germany
Filed Jan. 20, 1966, Ser. No. 521,856
Claims priority, application Germany, Jan. 26, 1965, M 63,929
14 Claims. (Cl. 123—30)



1. In internal combustion engine apparatus of the character described which can be readily converted from supercharged Otto gas operation to diesel-oil and diesel-gas operation and having an engine cylinder, a piston reciprocable in said cylinder, and a cylinder head disposed on said cylinder with valve-controlled inlet and outlet ports disposed therein, the combination which comprises a source of combustible gas mixture connected to said inlet port, an elongated substantially cylindrical ignition chamber extending upwardly and outwardly from said cylinder at the periphery thereof into said cylinder head and adjacent said outlet port and in flow communication with said cylinder through a port of relatively large cross section having gradually decreasing cross section from the said port to the opposite end thereof, spark means disposed in said ignition chamber at the end thereof opposite the said port thereof, means for firing said spark means, and swirl producing means in said inlet port for imparting a swirling movement to combustible gas mixture entering therethrough around the periphery of said cylinder and in a direction away from said ports of said ignition chamber whereby upon firing of said spark means a relatively small portion of said combustible gas mixture is ignited in the confines of said ignition chamber until such time as the flame front thereof progresses through said port thereof whereby a large cross section of ignited combustion gas is presented to the rotating movement thereof in said cylinder for the rapid and complete combustion of substantially all said combustible gas in said cylinder before knocking commences.

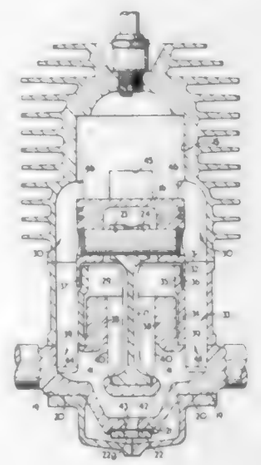
9. In a method for operating diesel-oil and diesel-gas engines as supercharged Otto gas engines by increasing the speed of combustion and completing the combustion of combustible gases consumed in the cylinder thereof to a time before the knocking cycles thereof commences, the steps which comprise introducing a combustible gas mixture into said cylinder in a swirling rotating pattern around the periphery thereof at a point therealong before the point of ignition of the said gas mixture therein, initiating combustion of the said combustible gas mixture at the point when the piston in said cylinder reaches dead center of the compression stroke by igniting a portion only of said mixture separated from the said cylinder forming a flame front for igniting the remainder of said mixture in said cylinder, conducting said flame front of said ignited combustion mixture in an approximately annular pattern around the periphery of said cylinder towards the outlet valve thereof and also spreading inwardly from the inner front of the said annular flame.

3,374,775
DIESEL ENGINE INTAKE AND EXHAUST SYSTEM
Kenneth F. Ferguson, Placentia, Calif., assignor to Hunt Foods and Industries, Inc., Fullerton, Calif., a corporation of Delaware
Filed Feb. 14, 1966, Ser. No. 527,119
6 Claims. (Cl. 123—52)



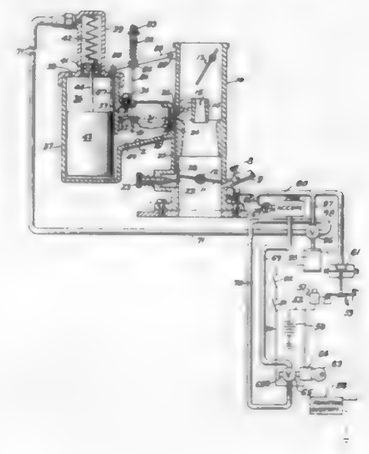
A piston engine intake and exhaust system having separate intake and exhaust manifolds for each pair of cylinders, together with a separate muffler for each exhaust manifold. Each pair of cylinders is provided with a Y-shaped intake passage which includes a common inlet portion terminating in branch outlet portions respectively leading to the cylinders. Each intake manifold is provided with a Y-shaped intake-manifold passage which includes branch inlet portions merging into a common outlet portion communicating with the inlet portion of the intake passage leading to the corresponding cylinders. The branch outlet portions of each intake passage and the branch inlet portions of the corresponding intake-manifold passage are arranged in a generally X-shaped pattern, thereby resulting in diagonal air delivery to the intake valves of the cylinders.

3,374,776
TWO-STROKE INTERNAL COMBUSTION ENGINE
Bernard Hooper, Wordsley, Stourbridge, England, assignor to The Villiers Engineering Company Limited, Wolverhampton, England, a British company
Filed Sept. 27, 1966, Ser. No. 582,341
Claims priority, application Great Britain, Oct. 8, 1965, 42,881/65
12 Claims. (Cl. 123—73)



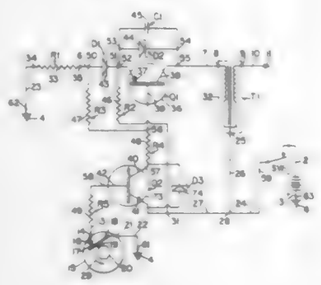
1. A two-stroke internal combustion engine employing crank case compression and including a cylinder, a piston reciprocable in the cylinder, a crank case defining a crank chamber, a crank shaft rotatably mounted by main journal means in the crank case and connected to the piston to form an assembly, main transfer passage means between the crank chamber and the cylinder for transferring the charge therebetween and auxiliary transfer passage means in said main journal means to pass the charge from the crank chamber to the main transfer passage means, and wherein during the major portions of the time during which transfer of the charge from the crank chamber to the cylinder occurs, two paths for the charge from the chamber into the main transfer passage means apart from the normal working clearance between the piston and the cylinder, the first of said paths being through the auxiliary transfer passage means and the second of said paths comprising a small clearance between the crank shaft and piston assembly and stationary abutment means of the engine, the relation between the restrictions offered to gas flow by the two paths being such that the major part of the charge flows through the auxiliary passage means during transfer.

3,374,777
VEHICLE CARBURETOR
Brooks Walker, 1280 Columbus Ave., San Francisco, Calif. 94133
Filed Nov. 6, 1964, Ser. No. 409,510
6 Claims. (Cl. 123—136)



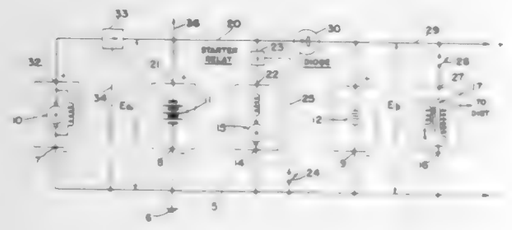
1. A carburetor for an internal combustion engine having an ignition system comprising a housing, a partition wall dividing the housing into a pair of adjacent chambers, an opening through said wall connecting said chambers, one of said chambers comprising a float bowl, a float in said bowl, a needle valve connected to said bowl for controlling the flow of fuel thereto from a supply source, means connecting said float and valve for closing the valve when the float is at a predetermined level in said bowl and for opening the valve when the float is below said level whereby to maintain a predetermined volume of fuel in said bowl; a plunger mounted in the other of said chambers for reciprocating movement therein, the volume of said second chamber beneath the plunger at one end of its stroke being sufficient to store the fuel from the float chamber whereby to prevent the feeding of fuel from the bowl, the cross-sectional area of the plunger being less than the cross-sectional area of the chamber to provide a loose fitting therein of the plunger, and the volume of said plunger being at least equal to the volume of the stored fuel, means for raising the plunger to one end of its stroke to withdraw fuel from the float bowl through said opening and into the other chamber, means for lowering the plunger to the other end of its stroke to force the fuel to return to the float bowl, and means connected to the plunger and said float for closing the needle valve when the fuel is withdrawn from the float bowl and opening the valve after the fuel is returned.

3,374,778
ELECTRONIC IGNITION SYSTEM
John A. Dixon, Los Angeles, Calif.
(7314 Variel, Canoga Park, Calif. 91303)
Filed Oct. 22, 1965, Ser. No. 501,094
2 Claims. (Cl. 123—148)



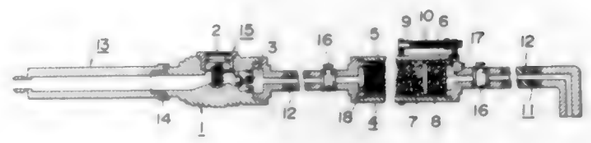
Electronic ignition systems for internal combustion engines, one using a transistorized positive ground system and another a transistorized negative ground system, the negative ground system having an ignition coil directly connected to the collector of the transistor and a circuit arrangement preventing a direct voltage path between the coil and the base of the transistor, and the positive ground system having a second transistor for turning on the first transistor and protected by a zener diode and by a circuit arrangement preventing a direct voltage path between the ignition coil and the collector of the second transistor to protect the second transistor from transient voltages and to permit the use of a lower power zener diode.

3,374,779
ELECTRIC SYSTEM
John H. Fergus, Taylors Lane, Riverton, N.J. 08077
Filed Mar. 4, 1966, Ser. No. 534,291
2 Claims. (Cl. 123—179)



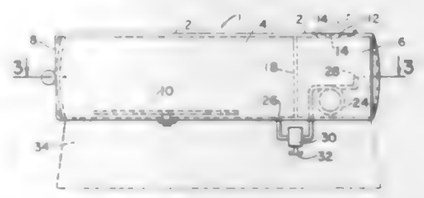
Automotive vehicular power supply system comprising a heavy-duty main battery, with means for charging it directly from the generator, and two supply leads directly connected therewith, one being a ground lead and the other being a high potential lead, and between which is maintained normally a predetermined voltage from the main battery as a current supply source for the system. An ignition circuit is connected between the supply leads to receive operating voltage therefrom in operation and is provided with a light-duty auxiliary battery connected directly with the ignition circuit for inclusion therewith. A diode rectifier is connected between the auxiliary battery and the remainder of the system exclusive of the ignition circuit and poled to prevent current flow from the auxiliary battery to the remainder of the system. When the supply voltage across the supply leads is too low for any reason, the auxiliary battery provides for supplying the ignition circuit which thus becomes isolated.

3,374,780
APPARATUS FOR SUPPLYING COMPRESSED AIR
Izumi Shimazaki, 4–25–1 Nakahara, Mitaka-shi, Tokyo, Japan
Filed Nov. 23, 1966, Ser. No. 596,518
Claims priority, application Japan, Nov. 27, 1965, 40/72,763
3 Claims. (Cl. 123—198)



1. An apparatus for supplying compressed air into tire tubes by the utilization of the compression stroke of an internal combustion engine, comprising a compressed gas intake pipe section having an outer air inlet port and a check valve; a filtrating section having a filter chamber containing adsorbent and a flow regulator composed of a plurality of regulating plates mounted around a supporting rod at appropriate intervals in staggered relation, and a gas detector having a transparent tube filled with gas detecting agent and communicating with the end of said filter chamber; and a compressed air supply port section; these sections being connected one another by means of high pressure hoses.

3,374,781
PRESSURE VESSEL
Maurice Bramson, 16 Woodcrest Road, Kings Point, N.Y. 11024
Filed Oct. 13, 1965, Ser. No. 495,435
3 Claims. (Cl. 126—369)

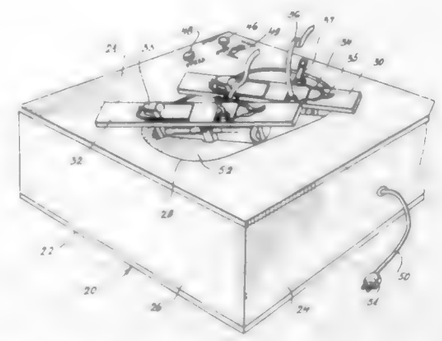


A vessel having a longitudinal body shell, said body shell including a steam pressure chamber and a condensation chamber, said chambers being tandemly arranged, said condensation chamber being at atmospheric pressure when said pressure chamber is above atmospheric pressure, partition means sealingly separating said chambers, and condensation means mounted within said condensation chamber, said condensation means having an inlet and an outlet opening, one said opening being in communication with said pressure chamber, the other said opening being in communication with the atmosphere, and valve means for regulating fluid flow through said condensation means.

3,374,782
EXERCISING MACHINE FOR SKIERS
Charles P. Izzo, 72 Main St., Ridgefield, Conn. 06877
Filed Oct. 22, 1965, Ser. No. 501,786
10 Claims. (Cl. 128—25)

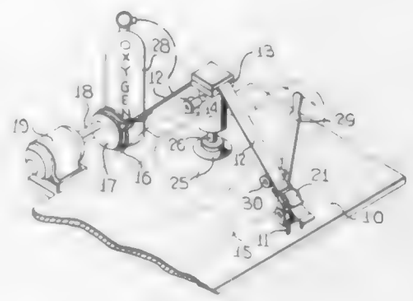
1. A machine for training and exercising a skier to perform simulated skiing movements, comprising a base, a pair of narrow platforms on said base simulating skiis for supporting a skier while both feet of the skier wearing ski boots stand on the platforms respectively, means on the platforms for engaging the ski boots, a drive motor, and a mechanism means inside the base operatively connecting the drive motor and platforms for executing continuous simulated ski turns in right and left directions by

turning the platforms simultaneously on parallel vertical axes in the same one direction while turning the platforms on parallel horizontal axes in a common angular



direction, and for elevating the rear end of only one of the platforms approaching a central vertical plane of said base during the turn in said one direction.

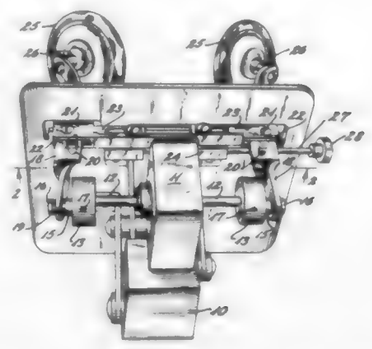
3,374,783
HEART MASSAGE UNIT
Hyman Hurvitz, 1313 Juniper St. NW., Washington, D.C. 20012
Filed Dec. 23, 1965, Ser. No. 515,865
8 Claims. (Cl. 128—51)



1. A heart massage unit, comprising
a plate underlying a patient,
a length of belt extending over the patient at the location of the sternum of the patient,
means securing said length of belt at both its ends to said plate,
a pressure applicator secured to said length of belt and extending from said belt into contact with said sternum,
said means comprising means for periodically tightening and releasing said belt at a rate of about 1 (reciprocation per second) and to an extent such that said applicator moves inwardly toward said sternum and is released at said rate for a distance of about 1",
said last means being located at least adjacent one end of said length of belt.

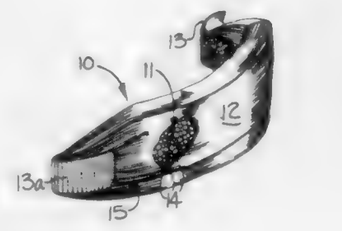
3,374,784
MECHANICAL MASSAGE APPARATUS WITH CRANK AND SLIDE
George T. Brent, 311 N. Fort Harrison St., 33515, and Edward S. Aronoff, 1826 Nottingham Lane, 33516, both of Clearwater, Fla.
Filed Jan. 7, 1966, Ser. No. 519,209
6 Claims. (Cl. 128—61)

1. A mechanical massager comprising massage elements located in a manner to engage and massage spaced portions of the body, an arm pivotally mounting each of said massage elements, each arm having an inclined slot along its length, a support, a pin extending through each of said slots and being attached to said support means connected to the end of each of said arms remote from



said massage elements, and power means for rotating said last mentioned means, whereby said arms will be projected, retracted, and oscillated to impart motion to said massage elements.

3,374,785
CERVICAL COLLAR
John F. Gaylord, Jr., Matthews, N.C., assignor to Medical Specialties, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Oct. 11, 1965, Ser. No. 494,422
7 Claims. (Cl. 128—75)

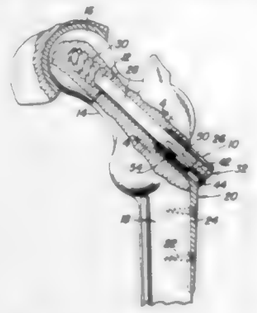


1. A cervical collar comprising:
(a) an elongate, resilient, porous core of discrete particles of polyurethane foam material bonded together, said core having
(1) a size generally corresponding to the overall shape of the collar;
(2) a density of about six pounds per cubic foot, and
(3) an enhanced porosity comparable to that of common polyurethane foam material of about two pounds per cubic foot density;
(b) a porous covering on said core; and
(c) means positioned on each end of said covered core for securement of such ends together when the collar is placed about a wearer's neck.

3,374,786
FRACTURED BONE SETTING FASTENER ASSEMBLY
George R. Callender, Jr., 1308 Quarrier St., Charleston, W. Va. 25301
Filed Dec. 15, 1964, Ser. No. 418,427
8 Claims. (Cl. 128—92)

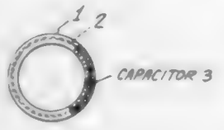
A nailing apparatus for fractured femoral bones consisting of a sleeve member and a femoral fastening member, the latter having parallel slots joined at their opposite ends by a circumferential slot, the slots cooperat-

ing with a keying means on the sleeve and a limit screw attached to one end of the fastening member to alternately



permit relative axial displacement of the fastening member or locking it against such movement.

3,374,787
INTRA-UTERINE CONTRACEPTIVE DEVICE
Fred L. Hatke, Skillman, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 18, 1965, Ser. No. 508,456
6 Claims. (Cl. 128—130)

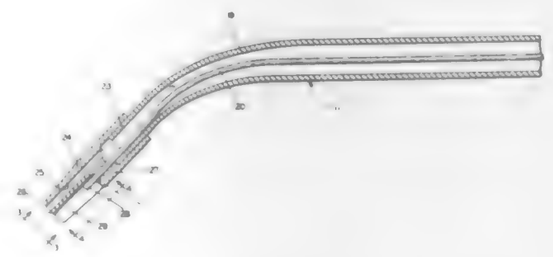


6. A contraceptive intra-uterine device comprising:
a smooth, flexible, resilient, tubular ring-like member adapted to be placed with its primary plane in the frontal plane of a uterus with the actual shape of said member conforming to the internal shape and dimensions of said uterus at the position of said member in said uterus,
a metallic electrically conductive wire ring internal to said member and conforming in shape to that of said member, said wire ring having a value of inductance determined by the shape thereof and therefore of the shape of said member when in said uterus, and
a capacitor internal to said member and connected to said wire ring to form with the inductance of said wire ring a resonant circuit having a resonant frequency determined by the value of said inductance and therefor the position of said member in said uterus.

3,374,788
CONTRACEPTIVE DEVICES AND METHODS
Gerald S. Rosenthal, Ogden, Utah, assignor to Deseret Pharmaceutical Company, Salt Lake City, Utah, a corporation of Utah
Continuation-in-part of application Ser. No. 461,281, June 4, 1965. This application Oct. 24, 1965, Ser. No. 515,284
22 Claims. (Cl. 128—130)

1. An intra-uterine contraceptive assembly comprising an intra-uterine contraceptive device of biologically inert material comprising a trunk portion from which a pair of oppositely disposed loops protrude, an elongated tubular member adapted to linearly receive the device with said loops being unlooped in side-by-side generally linear relation for placement of the device within the uterus, said tubular member being of such size and shape so as to extend at its distal end through the cervical os into the uterus and at its proximal end project entirely outside the body of the patient so as to provide an external portion which can be visualized and manually grasped for purposes of manipulation, and a plunger the leading end of which is joined the trunk portion of the device for to and fro joint manipulation so that when the plunger is slidably disposed within the tubular element but with the trailing end of the plunger projecting from the proximal end thereof pulling of the plunger outward through the proximal end of the tubular member a predetermined distance will load the device into the tubular member through the distal end thereof until the loops are unlooped in the mentioned side-by-side relation and, thereafter pushing the plunger inwardly through the proximal end of the tubular member a predetermined distance will accommodate ejection of the device, when the tubular element is so placed within the uterus, such that the loops, due to the shape-retention characteristics of the inert material, are restored to their looped positions within the frontal plane of the uterine cavity.

3,374,789
DENTAL SYRINGE WITH NOVEL NOZZLE TIP
John A. Maurer, Canton, Ohio, assignor to The Weber Dental Manufacturing Company, Canton, Ohio, a corporation of Ohio
Filed Sept. 18, 1964, Ser. No. 397,398
6 Claims. (Cl. 128—173.1)



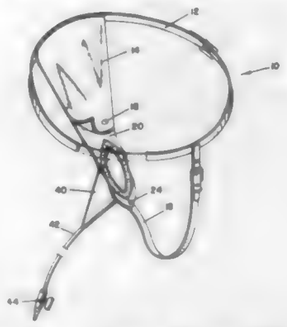
A dental syringe nozzle for selectively discharging air or water or an air-water mixture having an air tube terminal at the nozzle tip and a diametrically aligned adjacent water tube terminal spaced from the nozzle tip in a channel open at the side and end of the tip to discharge air alone when desired without aspirating unwanted water.

ERRATUM

For Class 128—189 see:
Patent No. 3,374,742

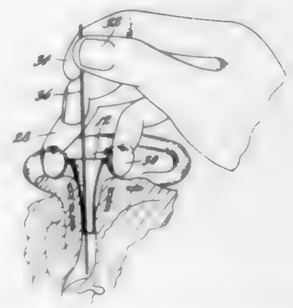
3,374,790
EXTERNAL FEMALE URINAL
Irene B. Mayhorne, Perry Hall Medical Center, Baltimore, Md.
Filed Dec. 2, 1963, Ser. No. 327,297
11 Claims. (Cl. 128—295)

9. A urinal adapted to be positioned at the vulva region of the body of a human female comprising an elongate sheet of material, said sheet being impervious to water and urine so as not to absorb urine which may come into contact therewith, and being pliable to thereby conform to the body of a said human female, said sheet having a generally elongate opening therein, said opening having its major axis extending longitudinally of said sheet, a pad on one side of said sheet, said pad surrounding said opening and being of flexible yieldable and resilient material, said pad being of lesser thickness at one end thereof and of greater thickness at the other end thereof with the thickness increasing in the direction of said axis of said opening, whereby it may engage with and substantially seal against the vulva region of a female human body, means extending from said sheet oppositely from said pad for receiving liquid passed through



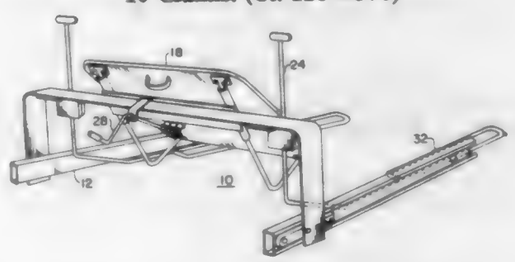
said opening, said means being of material which is pliable, foldable and impervious to water and urine, said means having a flexible tube attached to it in fluid conducting relationship at a point remote from said sheet, and substantially flexible means for securing said sheet and pad in position against the vulva region of a female human body.

3,374,791
EAR SPECULUM
Samuel Thomas Westerman, 519 E. Tabor Road, Philadelphia, Pa. 19120
Filed July 21, 1965, Ser. No. 473,738
2 Claims. (Cl. 128—343)



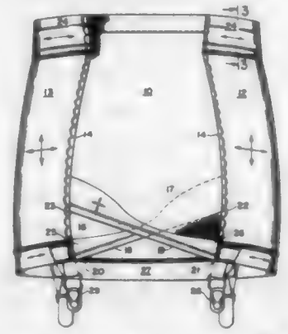
An ear speculum which terminates upwardly in a wide mouth which is finished with an outwardly rolled peripheral rim and a pair of rim connected, curved finger hold extensions substantially diametrically opposed and extending outwardy from the said rolled rim.

3,374,792
NEGATIVE PRESSURE DEVICE
Robert C. Armstrong, La Mesa, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Dec. 17, 1965, Ser. No. 514,622
10 Claims. (Cl. 128—376)



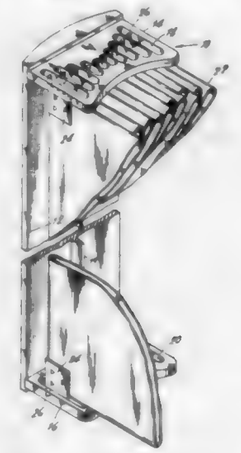
1. A negative pressure control device for a dry immersion bed comprising in combination:
(a) support means,
(b) negative pressure control means adjustably mounted on said support means, and
(c) head rest means adjustably mounted on said support means.

3,374,793
NON-ROLL FOUNDATION GARMENT
James F. Young, Dover, and John D. Ferguson, Alapocas, Wilmington, Del., assignors to Sarong, Inc., Dover, Del., a corporation of Delaware
Continuation of application Ser. No. 236,926, Nov. 13, 1962. This application Feb. 18, 1966, Ser. No. 528,505
6 Claims. (Cl. 128—533)



1. A girdle construction including a woven circumferentially elastic collar joined at its bottom edge to the top edge of the girdle proper, the collar being made of one-way stretch fabric having a high degree of longitudinal elasticity and containing vertically disposed threads having a fineness in the range of 200 to 700 deniers or equivalent fineness, said collar comprising a body portion and a lip portion, said body portion having at least two interwoven fabric layers, the upper edge of the collar being divided into two free separate overlapping lips each being integrally interwoven with the collar body and being integral extensions of its fabric layers, the body of the collar being wider and stiffer than the lips whereby tensions generated by movement of the body of the wearer are distributed through the collar to cause the lip portion to turn in towards the body of the wearer and thus substantially reduce rolling of the top of the collar.

3,374,794
RECORD HOLDER
Murray Z. Reed, Syosset, N.Y., assignor to Eagle Druggists Supply Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 6, 1965, Ser. No. 511,842
4 Claims. (Cl. 129—20)



Phonograph record album includes a support element, respective plates perpendicularly affixed near the opposite transverse ends of the element, a given plurality of parallel

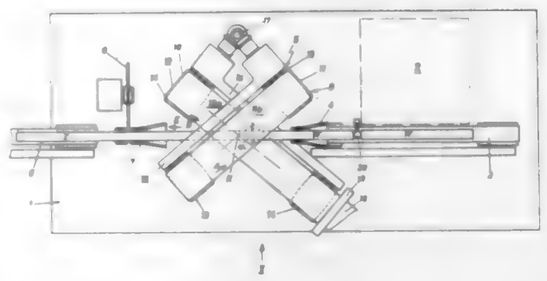
disposed openings provided in the plates, the openings being disposed substantially perpendicularly to the element and progressively symmetrically decreasing in size from the outer to the inner openings to provide an array of symmetrical bitrapezoidal configuration, corresponding ones of the openings in the upper and lower plates respectively being in registration, the corresponding openings receiving record containing sleeves therein, each of the sleeves including a pair of adjacent closed corners, and means insertable into the openings provided at each of the closed corners, each of the insertable means including a projecting tab for insertion into one of the openings to adapt a sleeve to be received into a pair of corresponding registered openings and an integral blank folded in half to define a pair of leaves, the projecting tab being aligned with the fold point of the blank, the sleeves having an open edge opposite the closed corners.

3,374,795
APPARATUS FOR MAKING CONTINUOUS CIGARETTE RODS
Desmond Walter Molins, Deptford, London, England, and Francis Auguste Maurice Labbé, Neuilly-sur-Seine, France, assignors to The Molins Organisation Limited, London, England, a corporation of Great Britain
Filed July 27, 1965, Ser. No. 475,113
Claims priority, application Great Britain, Sept. 11, 1964, 37,375/64
2 Claims. (Cl. 131—21)

In a continuous rod cigarette making machine, "shorts" are removed from the supply of tobacco in the hopper and are fed into a reservoir, from which they are discharged at a controlled rate into an air stream which carries tobacco for forming a tobacco filler. Control of the rate of discharge of shorts from the reservoir is effected by a detector which detects the quantity of shorts in the reservoir.

3,374,796
APPARATUS FOR CONTINUOUSLY ROLLING CIGAR CORES
Walter Galliker, Pfeffikon, Lucerne, Switzerland, assignor to Villiger Sohne A.G., Aargau, Switzerland, a corporation of Switzerland
Filed Dec. 9, 1964, Ser. No. 417,134
Claims priority, application Germany, Dec. 11, 1963, V 25,020
4 Claims. (Cl. 131—59)

An apparatus for continuously wrapping axially aligned, successively fed cigar cores, wherein said apparatus comprises a pair of conveyor belts each having longitudinally moving working courses, said working courses being disposed in different planes and crossing to define a rolling zone therebetween. One of said conveyor belts is arranged for receiving a wrapper on the working course thereof and for conducting the wrapper to the rolling zone. The cigar cores are axially introduced into the rolling zone with each of the conveyor belt working courses being positioned at an angle to the lengthwise axis of said cores introduced therebetween. The working courses are spaced apart a preselected distance to enable said working courses to engage each of said cores at two diametrically spaced locations within the rolling zone for simultaneously



rotating said cores to spirally wind a wrapper thereon and axially drive the cores through and out of said rolling zone in a wrapped condition.

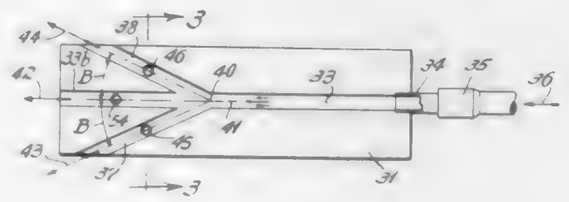
3,374,797
COLLAPSIBLE SHELTERS
Otto Walter Neumark, 2 Churchill Ave., Stockport, England
Filed May 25, 1965, Ser. No. 458,607
Claims priority, application Great Britain, May 25, 1964, 21,621/64
4 Claims. (Cl. 135—1)

A collapsible shelter or tent comprising, a canopy of substantially hexagonal shape when viewed in plan and with the canopy flattened. Posts are provided beyond at least three of the sides of the canopy. Supporting cables extend between the posts and to the ground, such cables defining an equilateral triangle between them. Secondary cables extend from the posts to the center of the canopy and couple thereat to a triangulated plate. Stressing cables are provided at the six sides of the canopy and these cables extend along upwardly curved lines which define the tops of the sides or walls of the resultant tent, the said sides or walls being convexly curved at the top by the action of the said stressing cables.

3,374,798
CAMOUFLAGE EQUIPMENT
Knut August Sigvard Samuelson, Stockholm, Sweden, assignor to Licentia, Ekman & Brundin, Stockholm, Sweden
Filed Nov. 29, 1965, Ser. No. 510,195
Claims priority, application Sweden, Dec. 7, 1964, 14,763/64
4 Claims. (Cl. 135—20)

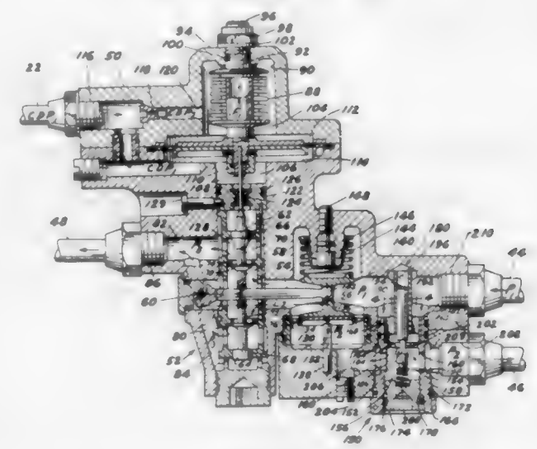
A readily transportable camouflaging device comprises a shaft; a plurality of ribs pivotally connected to the shaft adjacent one end of the latter and directed laterally in various directions from the shaft (after the manner of an umbrella) and camouflage net means supported on the ribs. The ribs are arranged in series, one over the other, to provide at least two groups of ribs, and are of varying lengths mutually and in the various series. A slide displaceable on the shaft and lockable in at least one position therealong is connected to said ribs through link means, for presenting the ribs in more or less extended portions.

3,374,799
FLUID FLOW CONTROL SYSTEM
Brooks Lyman, Pound Ridge, N.Y., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Original application June 21, 1962, Ser. No. 204,206, now Patent No. 3,194,253. Divided and this application Nov. 25, 1964, Ser. No. 413,943
2 Claims. (Cl. 137—81.5)



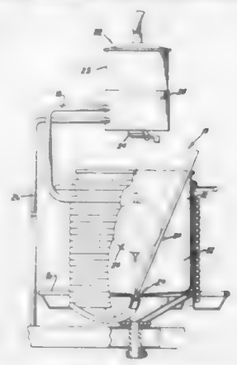
1. A method of selectively controlling the flow of a fluid along at least two predetermined flow paths; comprising the steps of
providing a fluid flow source;
establishing a continuous main fluid stream from said source;
establishing two symmetrically disposed divergent flow paths which communicate at a substantially common point with the main stream whereby at any given time at least a portion of said main stream is conducted along only one of said divergent flow paths, this fluid flow system normally remaining in a stable condition until caused by a predetermined fluid control signal having at least a predetermined minimum power to shift to another stable condition wherein at least a portion of the main stream is conducted along the other of said divergent paths;
applying a reduced fluid control signal having a power less than said predetermined minimum power to said [first and second] one of said divergent flow paths downstream of said common point;
interrupting the fluid flow along the main stream during the application of said reduced fluid control signal; and
re-establishing said main fluid stream during the application of said reduced fluid control signal so that at least a portion of the main fluid stream flows along only the said other of said divergent flow paths.

3,374,800
GAS TURBINE ENGINE CONTROL HAVING BY-PASS VALVE MEANS
Dean F. Wheeler, Detroit, and Warren H. Cowles, Birmingham, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Mar. 21, 1963, Ser. No. 267,017
9 Claims. (Cl. 137—117)



1. A hydraulic system, comprising a high pressure chamber; a low pressure return; a control valve between said high pressure chamber and said low pressure return; a source of air under pressure; a pneumatic pressure responsive system physically connected to and directly operating said control valve, said pneumatic system including a first chamber having a first pressure responsive means therein, a second pressure responsive means forming a movable wall between said first chamber and a second chamber, a conduit communicating between said first and second chambers, and a restriction in said conduit; and means enabling the use of a low pressure seal to separate hydraulic fluid from said second chamber, said means being the connection of said pneumatic system to said valve through said low pressure return rather than through said high pressure chamber.

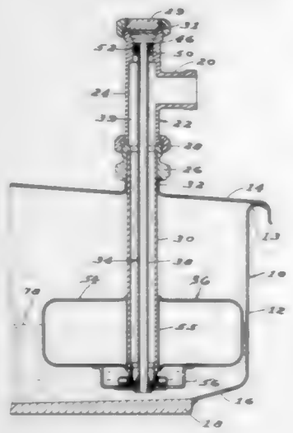
3,374,801
SIPHON BREAKING APPARATUS FOR MILK-HANDLING SYSTEMS AND THE LIKE
Robert H. Rander, Grand Rapids, Mich., assignor to Werner Machinery Company, Grand Rapids, Mich., a corporation of Michigan
Filed July 19, 1965, Ser. No. 473,149
2 Claims. (Cl. 137—143)



A liquid transferring apparatus of the type which has a container with an open top and a throat outlet at the bottom thereof which is connected to a long length of conduit or hose. The conduit or hose is subjected to vacuum so that any liquid poured into the container will be drawn through the conduit. The improvement in this device is means for causing the fluid to be drawn through

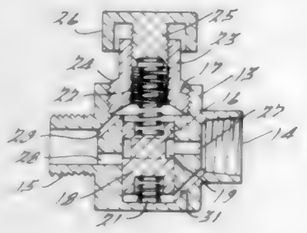
the pipe at a greater rate and comprises in combination with the above container and conduit a single length of pipe having a passageway throughout its length, the pipe being inserted into the throat of the container outlet so as to provide a supply of atmospheric air at the throat. The pipe is inserted in the throat and rests against the top edge of the container and it can be readily inserted or removed at will so as not to interfere with a valve within the container which shuts off the throat when the liquid within the container is exhausted.

3,374,802
FLOAT VALVE
Harry B. Egleston, Livonia, Mich., assignor to Ex-Cell-O Corporation
Filed Oct. 21, 1965, Ser. No. 500,404
14 Claims. (Cl. 137—432)



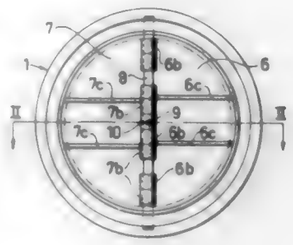
This invention relates to a float valve member having an unbalanced pressure force provided by a pressure surface or a differential of two pressure surfaces to assist in opening the valve to pass liquid from a liquid pressure source to a tank unit where a controlled liquid level is to be maintained. The float valve member has a rolling O-ring seal to assist in providing a more sensitive control level system.

3,374,803
VOLUME AND FLOW CONTROL DEVICE
Treffle J. Leveque, 16606 Glastonbury, Detroit, Mich. 48219
Filed June 17, 1965, Ser. No. 464,643
4 Claims. (Cl. 137—503)



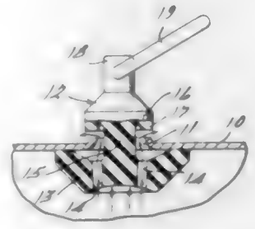
The valve of the present invention maintains a set pressure for operating a device to which it is applied irrespective of higher pressures at different supply sources. The body of the valve is a screw machine part having aligned threaded, recessed bosses. The recesses communicate with the valve body through passageways therefrom that are offset relative to each other. This prevents the valve body from binding and assures accurate control of the air pressure.

3,374,804
CHECK VALVES
Olof G. Stegerud, Timra, Sweden, assignor to Axel Larsson Maskinaffar AB, Bromma, Sweden
Filed July 7, 1965, Ser. No. 470,066
3 Claims. (Cl. 137—512.1)



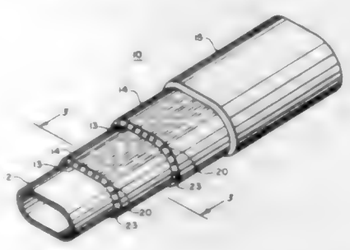
A check valve that is particularly well suited for pipe systems conveying fibrous material by the two semi-circular flanges of the check valve being provided with diametrical knife edges that engage each other upon closure of the valve so as to cut off neatly any fibers that may fasten between the knife edges.

3,374,805
PRESSURE RELIEF VALVE
David J. Trevarrow, Jr., Maple Glen, Pa., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,934
3 Claims. (Cl. 137—525)



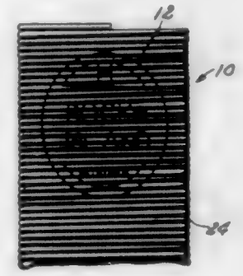
A one piece pressure relief valve for a container that is either automatically or manually operable for permitting the escape of excess gas from the container.

3,374,806
SUBMARINE HOSE
Clayton H. Skinner, Buffalo, N.N.Y., assignor to Hewitt-Robins Incorporated, Stamford, Conn.
Filed Feb. 10, 1965, Ser. No. 431,521
9 Claims. (Cl. 138—119)



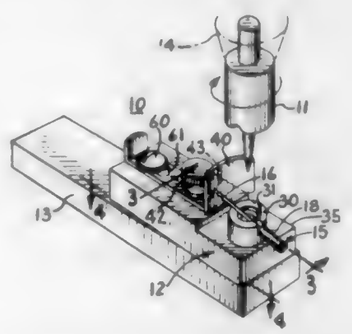
A submersible hose having a steel, copper head or other heavy material fiber or threads incorporated longitudinally in the hose fabric or impregnating the hose fabric for ballast purposes. The ballasted portions of the hose are preferably separated by unballasted hose fabric to provide a hinge portion about which the hose may collapse for compact storage on a reel.

3,374,807
LABELED ARTICLE AND METHOD FOR FORMING SAME
Vesta F. Michael, Wichita, Kans., assignor to Rock Island Oil & Refining Co., Inc., Wichita, Kans., a corporation of Kansas
Filed Nov. 25, 1964, Ser. No. 413,855
2 Claims. (Cl. 138—144)



1. An article of manufacture comprising a labeled, filament-reinforced cured resin pipe body; said body comprising layers of transparent filamentous reinforcements, said reinforcements comprising alternate layers of tensioned filaments arranged parallel and transversely to the longitudinal axis of said body embedded in cured transparent resin; label means locked in desired position and embedded beneath an outermost layer of helical filamentous reinforcements; the amount of glass-filaments and resin overlying said label means bein such that said label means may be clearly visible from the exterior of the pipe.

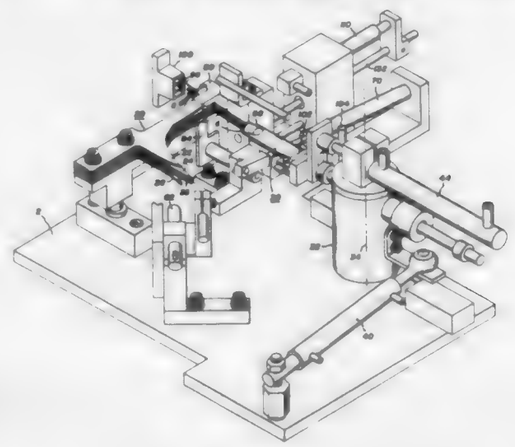
3,374,808
WIRE LOOPER
Erwin Schroeder, Roselle, Ill., assignor, by mesne assignments, to Precision Scientific Company, Chicago, Ill., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,455
11 Claims. (Cl. 140—102)



A tool for forming a loop on the end of a length of wire composed of a rotary forming head having a groove or shoulder for wrapping of the tip of the wire into a loop about a pilot pin extending from the forming head and a receptacle opposite the pilot pin for holding the wire in position and for allowing ironing of the completed loop.

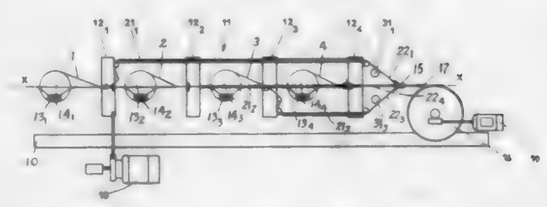
3,374,809
LEAD ORIENTOR
Elwin H. Fleckenstein, Alden, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 30, 1965, Ser. No. 476,071
5 Claims. (Cl. 140—147)

In a mechanism for automatically straightening the leads of an electronic component such as a transistor and inserting the leads into a receptacle, e.g., inserting the leads into the apertures of a test socket, the components (transistors) are fed down a chute where the leads are preoriented by virtue of a slot in the chute, the leads are further preoriented by a comb-like lead spreader which has tapered fingers that advance between the root portions of the leads of the lower most transistor and the chute in order to spread the leads apart in a vertical direction and also by a ram which moves forward and gives the lead a slightly forward rake in the horizontal direction in advance of the ram. Orientation of the leads in a vertical or elevational sense is provided by a comb-like member which consists of a plurality of leaf-like or plate-like teeth which extend generally horizontally and have a vertical spacing such as to accommodate the respective leads of the transistors. Once the leads of the transistor are preoriented, a



transfer arm which is mounted for oscillation about a vertical axis picks up the component and is rotated forward so that the leads are pulled through the comb and the leads are oriented in the vertical sense. In order to provide the proper orientation of the leads in a horizontal sense, a stop is provided at the end of the comb whereby the forward rake of the leads are intercepted by the stop and preferably a seating arm is rotated behind the leads in order positively to seat them against this stop and give the leads the desired orientation so that they may be inserted in a socket if desired. Preferably, the transfer arm holding the transistor is provided with an ejection means which moves the component forward is still the third direction of orientation either to insert the leads in a test socket or disposal bin.

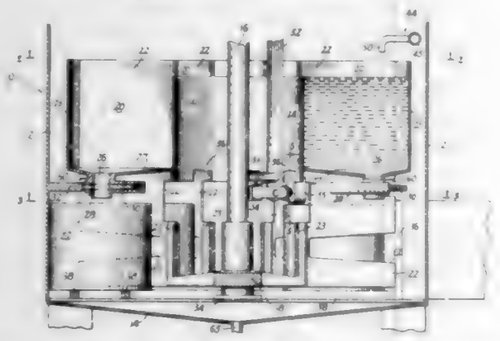
3,374,810
MANUFACTURE OF TELEPHONE QUADS
Roland Lemaire, Fere-en-Tardenois, France, assignor to Societe Etudes et Fabrications, Paris, France
Filed June 9, 1965, Ser. No. 462,521
Claims priority, application France, June 11, 1964, 977,935
5 Claims. (Cl. 140—149)



A wire quad manufacturing machine comprising a framework which is rotatable about a horizontal axis and which supports cradle members in horizontally spaced relation, each of which in turn supports an associated reel of wire for free rotation about a horizontal axis and from which the wire is drawn, by a pulling means common to

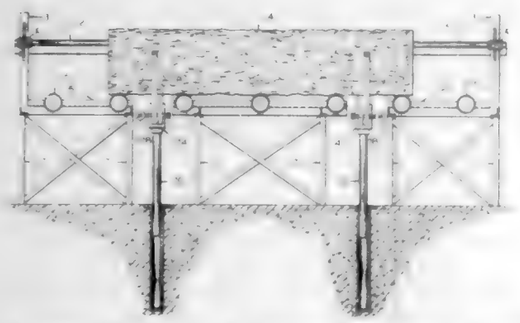
all of the wires, through a die plate means located beyond an endmost cradle member which is also common to all of the wires. Positioned between each reel and the die plate means is a pulley on which the wire passes for substantially a complete turn, the pulley being acted on by an adjustable brake-shoe for the application of an adjustable braking action on the pulley.

3,374,811
LIQUID MEASURING AND DISPENSING APPARATUS
Frederick Z. Goosman, 200 E. 57th St., New York, N.Y. 10022
Filed Aug. 12, 1965, Ser. No. 479,135
4 Claims. (Cl. 141—145)



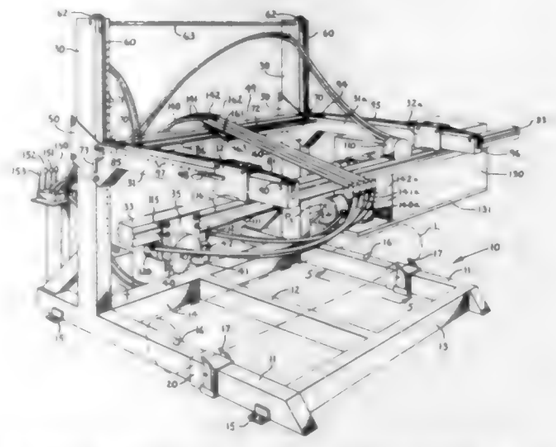
A liquid measuring and dispensing machine having a plurality of measuring compartments rotatably driven. Pusher elements depend from each compartment to engage an equal plurality of receptacles slidably disposed on a track. Each compartment has a weir for predetermining its fill level and a valve means dynamically controlled in operation to discharge its liquid content into its corresponding receptacle. Filling means for each compartment consists of several nozzles capable of delivery at different flow velocities and means are provided to assure the return of liquid spilling over the weirs to such filling means.

3,374,812
POSITIONING AND RETAINING DEVICE SYSTEM FOR LOGS IN A HIGH CAPACITY SAWMILL EMPLOYING A HORIZONTAL TRAVERSING BANDSAW ADJUSTABLY MOUNTED OVER THE LOG BEING SAWED
Charles E. McManama, Rte. 2, Box 81, Potlatch, Idaho 83855
Filed June 26, 1964, Ser. No. 378,118
2 Claims. (Cl. 143—19)



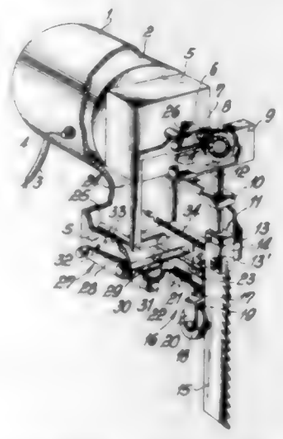
1. In a sawmill having a horizontal bandsaw which traverses in sawing upon paired side rails which straddle a log, a mechanism to adjustably support said rails as desired to saw dimensions of lumber from said log, and a log carriage to support the log; a log carriage comprising powerable and reversible rolls in a roll case aligned beneath and with said rails, and a number of log engaging vises having paired laterally opening jaws extending upward through the roll case between the rolls at appropriate intervals beneath and between said rails, a means in each said vise operating the jaws thereof so the log will be held in a centered position under the saw, and a means to raise and lower said vises from their positions between the rolls.

3,374,813
PORTABLE SAWMILL APPARATUS
Lawrence Ivan Tillery, 1201 Cedar St., La Grande, Oreg. 97851
Filed Feb. 7, 1966, Ser. No. 525,451
12 Claims. (Cl. 143—38)



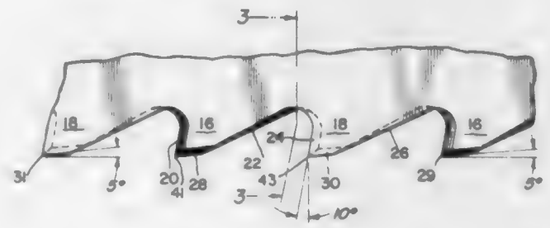
1. A sawmill comprising a base frame arranged to receive a log rolled over one side thereof into sawing position on the base frame, means for clamping the log on said base frame in said sawing position, a pair of uprights on the other side of said base frame, a pair of horizontal arms extending transversely over said base frame, vertically slidable cantilever supports for said arms on said uprights, a track bar extending longitudinally of said base frame mounted for transverse sliding movement along said arms, a saw carriage mounted for travel along said track bar, and horizontal and vertical circular saws on said carriage arranged to saw boards from the log when said carriage is traversed on said track bar.

3,374,814
SAWING APPARATUS
Albert Kaufmann, Zuchwil, Soleure, Switzerland, assignor to Scintilla A.G., Solothurn, Switzerland
Filed Jan. 20, 1966, Ser. No. 521,887
Claims priority, application Germany, Jan. 21, 1965, S 95,091
15 Claims. (Cl. 143—68)



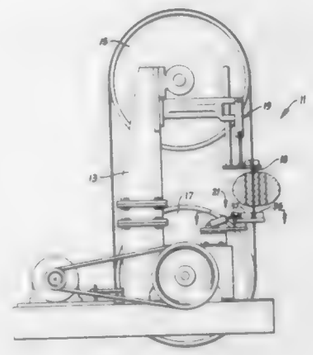
A sawing apparatus in which feeding means engage an elongated saw blade reciprocatable in longitudinal direction to impart to the saw blade during its reciprocation a feeding movement transverse to the direction of its reciprocation and in which operator controlled adjusting means cooperate with the feeding means for regulating the movement of the blade in the feeding direction between zero and a prdetermined maximum.

3,374,815
WOODCUTTING SAW BLADE
Leroy L. Anderson, Jr., and Frederick Drugan, Greenfield, Mass., assignors to Millers Falls Company, Greenfield, Mass., a corporation of Massachusetts
Filed Aug. 30, 1965, Ser. No. 483,680
2 Claims. (Cl. 143—133)



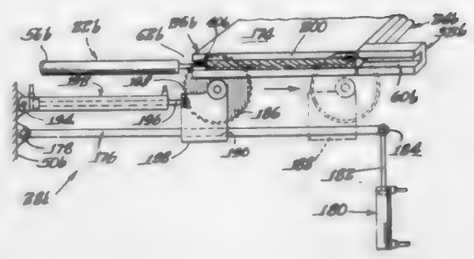
A reciprocating saw blade particularly adapted for woodcutting, comprising a plurality of cutting teeth which each include a generally transversely extending, chiseling edge and a scoring point such that, during the use of the saw blade, each of these cutting teeth both chisel and score the wood being cut.

3,374,816
BANDSAW GUIDE
John A. Alich, Burlingame, Calif., assignor, by mesne assignments, to The P. B. Yates Machine Company Limited, Hamilton, Ontario, Canada, a company of British Columbia
Filed Oct. 20, 1965, Ser. No. 498,286
14 Claims. (Cl. 143—160)



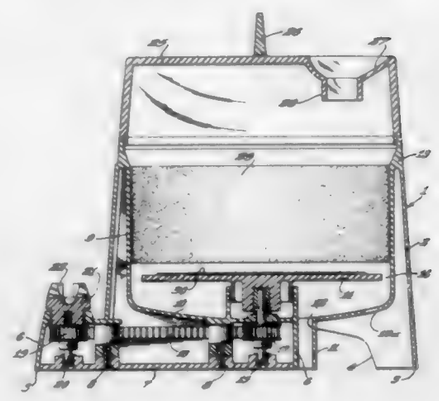
A bandsaw guide constructed for rapid movement between a guide position and a retracted position with the retraction being accomplished by powered driving means suitably controlled by a structure for switching the power to the power drive means so as to drive the guide between the two positions as desired; the preferred guide structure being mounted on a suitable base and having a fixed guide member and a retractable guide member slideably mounted and connected to a fluid cylinder serving as the power driving means, and control for the fluid cylinder in the form of a switching valve for directing fluid power to the cylinder and actuating it to retract the guide member and return same.

3,374,817
TANDEM STATION MACHINE FOR MAKING PIANO ACTION PARTS
Clifford W. Andersen, De Kalb, Ill., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio
Filed Sept. 1, 1965, Ser. No. 484,218
2 Claims. (Cl. 144—3)



Piano action parts making apparatus having two work stations, a parts blank being cut into individual unfinished parts at one station by a cutter that is arranged to trace a multi-sided path and finished parts being produced at the second station by reciprocably mounted tools.

3,374,818
VEGETABLE PEELER
Fred E. Knoedler, P.O. Box 397, Streator, Ill. 61364
Filed Mar. 10, 1966, Ser. No. 533,523
10 Claims. (Cl. 146—49)

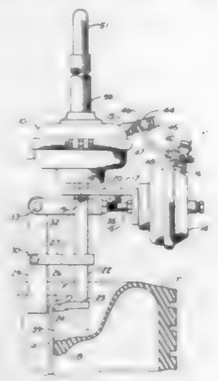


1. In a vegetable peeler,
a container having an opening at the top and an outlet opening at the bottom,
a flat-top turntable in the lower part of said container and of less diameter than the inside diameter of the container to leave a flow passage therebetween,
drive means to rotate said turntable connected to the underside thereof,
an abrasive band around the inside of said container in the region vegetables are located for peeling, and
an abrasive disc on the upper face of said turntable and of less diameter than the turntable.

3,374,819
TIRE REMOVAL TOOL
Richard H. Haynes, 144 Fulton St., New Milford, N.J. 07646
Filed Sept. 10, 1965, Ser. No. 486,324
2 Claims. (Cl. 157—1.17)

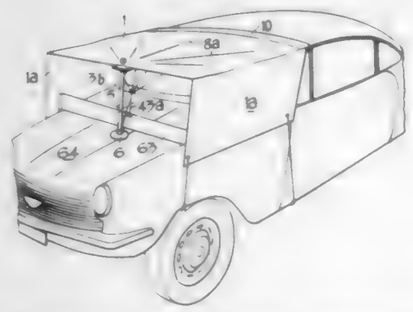
A tire removal tool having a first pneumatic means and a second pneumatic means mounted at right angles to each other on a common right angle bracket means and

gripping means operated by the first pneumatic means to grip the opposite sides of the wall of a wheel rim and



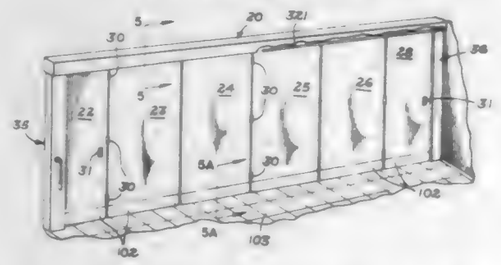
jacking means operated by the second pneumatic means to separate a tire bead from a wheel rim.

3,374,820
MEANS FOR FACILITATING THE VIEWING OF OPEN-AIR SPECTACLES FROM A MOTORCAR
Johann Stöckli, 4 Sanlam Bldg., Market St., George, and Aldo W. Dall'Oglio, Old Mutual Bldg., Oudtshoorn, both of Cape Province, Republic of South Africa
Continuation-in-part of application Ser. No. 476,899, Aug. 3, 1965. This application Oct. 11, 1965, Ser. No. 495,377
5 Claims. (Cl. 160—22)



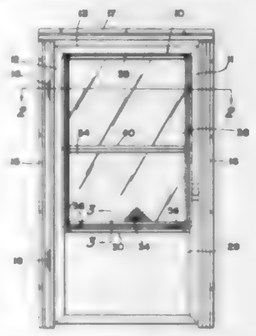
This specification discloses motorcar windscreen shields, adapted to be removably erected on a motorcar, and to shield the windscreen from rainfall and water running off the roof, comprising a flexible sheet material and collapsible frames of several types, and a splash catching strip extending transversely across the motorcar bonnet, applicable with minor obvious modifications to the shields of various frame types, for use in combination therewith for the purpose of minimising splashing into the windscreen.

3,374,821
MOVABLE SPACE DIVIDER STRUCTURE
Dean S. White, New Castle, Ind., assignor to New Castle Products, Inc., a corporation of Indiana
Filed Oct. 14, 1965, Ser. No. 495,988
9 Claims. (Cl. 160—40)



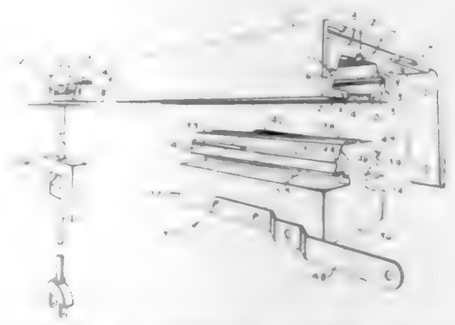
A folding partition incorporating a floor sealing mechanism operated by a handle, in which a plunger in the fixed jamb post engages a floor seal rod in the adjacent panel, with the rod motion being translated from panel to panel, the partition also incorporating end seals at the ends of the floor seals to effect sound isolation free of air gaps between panels and further incorporating a spring biasing mechanism for assisting in the turning of the first panel next to the jamb when the panels are moved from the extended position to the folded position.

3,374,822
SELF-STORING STORM DOORS
Dale J. Youssi, Dover, and Eugene L. Brand, Clinton, Ohio, assignors to Alsco, Inc., Akron, Ohio, a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,497
3 Claims. (Cl. 160—91)



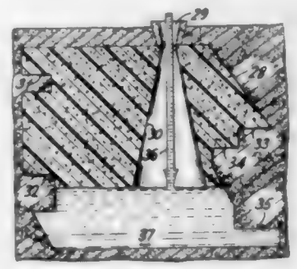
1. In combination with a storm door having a frame, a pair of sash units mounted in the frame, the improvement comprising means for retaining the pair of sash units in the frame, said retaining means including means defining a track, a third sash unit received by said track, means including means movable relative to said third sash unit and carried thereby engageable with said track for guiding said third sash unit between raised and lowered positions, said engageable means also being disengageable from said track to permit said third sash unit to be removed from the track while said track is mounted on the frame.

3,374,823
STRUCTURAL DEVICE
James A. Ford, Sturgis, Mich., assignor to Kirsch Company, Sturgis, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 375,276, June 15, 1964. This application Feb. 7, 1967, Ser. No. 614,473
25 Claims. (Cl. 160—331)



An assembly for supporting a movable panel for longitudinal traversing movement which comprises elongated guide means guiding and supporting said panel. Reaction means extends along said guide means and is fixed with respect thereto so that a power unit, which is movable longitudinally with respect to said guide means and generates a moving magnetic field, will be reactive with said reaction means to cause a mechanical motion of said power unit with respect to said guide means.

3,374,824
DISPLACEMENT PROCESS FOR THE CASTING OF METALS
Thomas E. Snelling, Rte. 2, Box 792, Boring, Oreg. 97009
Filed July 13, 1965, Ser. No. 471,679
5 Claims. (Cl. 164—34)

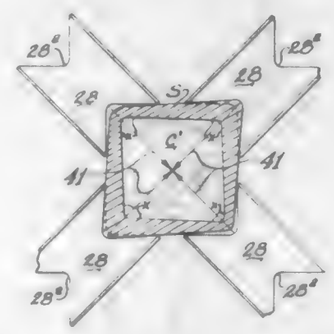


A method and mold are provided for producing metal castings. A pattern of porous plastic material is employed which, when heated, is capable of forming a vapor without leaving a residue. The pattern is confined within a sand mold and has an entry portion exposed to receive molten metal. As molten metal is poured into the entry portion of the pattern, the plastic material is decomposed and displaced by the molten metal until the metal occupies the space previously occupied by the plastic pattern.

3,374,825
CORE OIL COMPOSITIONS CONTAINING ORGANIC FIBERS
Robert J. Johnson, Chicago, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed June 21, 1962, Ser. No. 204,085
8 Claims. (Cl. 164—47)

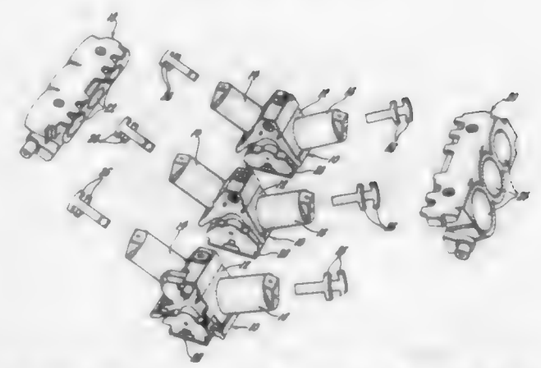
8. The method of casting metals which comprises mixing a core body material with a refractory minor portion of a core binder comprising: a mixture of an aliphatic dicarboxylic anhydride adduct and the polymeric reaction product of an oxirane-containing higher fatty acid ester, an aliphatic lactam, and a polyamine curing agent, and an admixture of organic fibers having a length of at least about one millimeter, forming a mold of the resulting composition, and casting the metal in the resulting mold.

3,374,826
PROCESS FOR CONTINUOUSLY CASTING ELONGATED METAL BODIES
James T. Black, Jr., Birmingham, Ala., assignor to H. K. Porter Company, Inc., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 436,033
4 Claims. (Cl. 164—82)



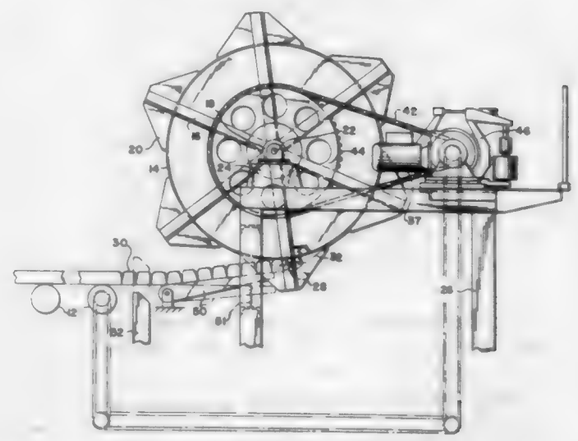
A process for delivering from a mold of a continuous casting machine a casting which in cross section conforms to the cross section of the mold, which process includes subjecting the casting to compressive forces on the outer skin thereof in the areas which are distorted relative to the shape of the mold, which forces are directed inwardly of the casting and which converge toward the cross sectional geometrical center of the casting, all the foregoing being carried out while the casting is being delivered from the mold, in continuous fashion.

3,374,827
METHOD OF USING VAPORIZABLE CORE ASSEMBLY SPACERS
Clarence A. Schebler, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 17, 1965, Ser. No. 508,197
5 Claims. (Cl. 164—137)



The speed and economy of preparing a mold which includes an assembly of two or more cores cemented together in a predetermined relationship, suitable for casting intricate articles is markedly improved by employing preformed expanded synthetic resin spacers to maintain the assembled cores in a desired spatial relationship to each other while the cement dries and/or the assembled cores are positioned in the mold, the resin spacers being vaporized by molten metal which is subsequently poured into the mold to form the cast article.

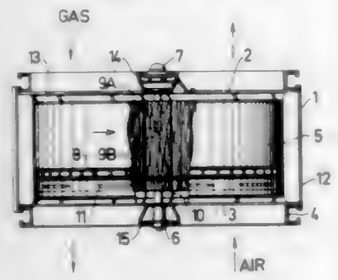
3,374,828
STORAGE APPARATUS FOR DUMMY INGOTS
Edouard Menu, Chaville, France, assignor to Societe Fives Lille-Cail, Paris, France
Filed Nov. 22, 1965, Ser. No. 509,056
Claims priority, application France, Nov. 23, 1964, 995,920
4 Claims. (Cl. 164—274)



A dummy ingot which plugs the bottom of a curved ingot mold at the beginning of each continuous ingot casting run consists of individual rigid elements connected by a pliable connecting member, and is wound on and unwound from a drum mounted on a frame above

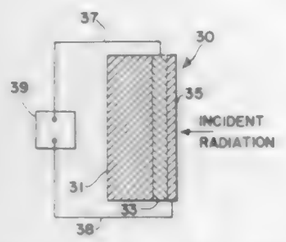
the conveyor which carries ingots from the mold, thus permitting storage of the dummy ingot near the conveyor without additional spaced requirements and permitting easy handling of the dummy ingot.

3,374,829
GAS PURGING SEAL IN ROTARY REGENERATOR
Kurt Veser, Schwetzingen, and Karl Heinz Mock, Neckargemund, Germany, assignors to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Aug. 11, 1966, Ser. No. 571,872
Claims priority, application Germany, Aug. 13, 1965, K 56,880
4 Claims. (Cl. 165—7)



Apparatus for use in rotary regenerative air preheaters which provides for reduction of gas flow leakage from the hot flue gas portion of the preheater to the air portion of the preheater, which apparatus includes a flue gas collecting chamber positioned adjacent a flue gas sector plate and also positioned along the edge adjacent the air flow portion of the preheater. The flue gas collecting chamber has an opening toward the end surface of the regenerator body which communicates with the flue gas supply duct so that the flue gas content of each compartment of the preheater leaving the gas flow portion thereof is forced out of the compartment and into the collecting chamber by air entering each compartment in the air portion of the preheater.

3,374,830
THERMAL CONTROL PANEL
William J. O'Sullivan, Jr., Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 28, 1966, Ser. No. 538,908
10 Claims. (Cl. 165—96)



1. A thermosensitive panel for achieving a predetermined temperature in an enclosure skin when said enclosure is subject to external solar or other high temperature electromagnetic radiation of steady or variable intensity either with or without flow of heat between the skin and the interior of the enclosure, comprising:

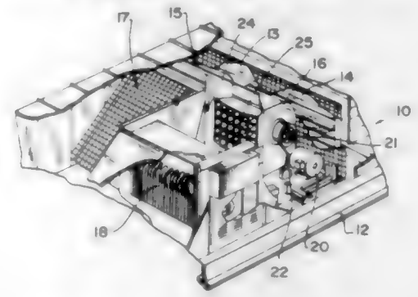
a laminate structure having variable radiation absorptivity/emissivity property characteristics disposed on the exterior side of said enclosure skin and in thermal contact with said skin,

said laminate structure including at least two electrically conductive layers, and having radiation absorptivity/emissivity characteristics such that the amount of incident radiation absorbed exceeds that emitted and causes the said skin temperature to increase, and

electrical means for applying an electrical potential to said conductive layers to alter the radiation absorptivity/emissivity characteristics of the laminate structure such that the amount of radiation emitted exceeds that absorbed and causes said skin temperature to decrease, means for sensing temperature in said enclosure skin, and

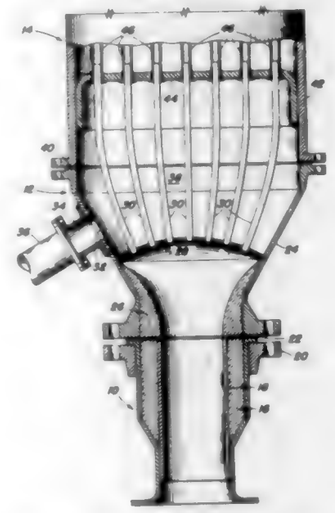
means for alternately applying and removing said electrical potential from said conductive layers so as to maintain the enclosure skin at a predetermined temperature.

3,374,831
BLOWER DIFFUSER
Wayne F. Sieverding, Union Grove Lake, Iowa, assignor to Lennox Industries Inc., a corporation of Iowa
Filed Jan. 25, 1966, Ser. No. 523,508
3 Claims. (Cl. 165—122)



An air treating device including a blower, a heat exchanger downstream of the blower, and a blower diffuser disposed at the outlet from the blower for converting the velocity energy of the air to static energy for improving the heat transfer of the air as it passes over the heat exchanger.

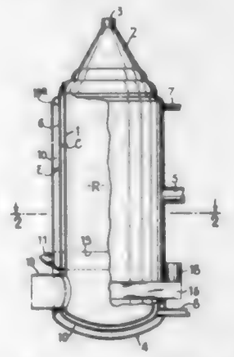
3,374,832
INLET CONE DEVICE AND METHOD
William Tucker, Great Neck, N.Y., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed May 13, 1966, Ser. No. 549,852
8 Claims. (Cl. 165—134)



This invention relates to a novel inlet device for connecting the output of a cracking heater with the inlet of a transfer line heat exchanger, and a method of operating

the same. In essence the present invention comprises the combination of a plurality of inlet cone tubes, the majority of said tubes being loosely slip-fitted into exchanger tubes, together with an inert fluid purge of the space between the exchanger tube sheet and inlet cone tube sheet, the inert fluid being supplied at a higher pressure than the heater effluent. In an alternate embodiment, the inlet cone tube sheet is eliminated by utilizing hexagonal tubes welded to each other. The inert fluid effectively purges the cone area of any hydrocarbon which may enter, and because of the slip-fit of the inlet cone tubes within the transfer line exchanger tubes, the inlet fluid may pass around the outside of the inlet cone tubes and into the exchanger tubes.

3,374,833
HEATING STILL
Jacques Henri Bernard, Livry-Gargan, France, assignor to Societe pour l'Equipement de la Blanchisserie et de la Teinturerie Francaises, Paris, Seine, France, a French body corporate
Filed May 4, 1966, Ser. No. 547,660
Claims priority, application France, May 12, 1965, 16,675
1 Claim. (Cl. 165—140)



A still comprising a tank for a liquid to be vaporized, a heating chamber which surrounds said tank and is in communication with a source of heating fluid, a heat exchange chamber disposed around said heating chamber, two expansion chambers adjacent said heat exchange chamber and in fluid communication therewith, a fluid to be heated being introduced into the heat exchange chamber through one of the expansion chambers and leaving the heat exchange chamber through the other expansion chamber.

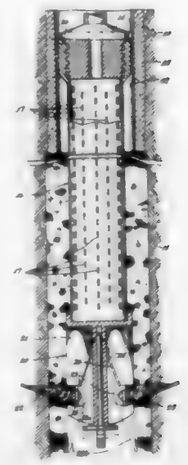
3,374,834
SOIL STABILIZATION AND GROUTING METHOD
Joseph Ramos and Roger F. Rensvold, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Oct. 31, 1966, Ser. No. 590,537
12 Claims. (Cl. 166—33)

1. A method of stabilizing earth formations which comprises injecting into the formation, an aqueous solution of a gelling material containing a quantity of finely divided inert solids and a quantity of a hydrous oxide of silicon, magnesium and/or aluminum characterized by a needle-like or acicular mode of crystallization as a suspending agent for the solids.

3,374,835
FRACTURE ACIDIZING
John A. Knox, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Jan. 21, 1966, Ser. No. 522,019
9 Claims. (Cl. 166—42)

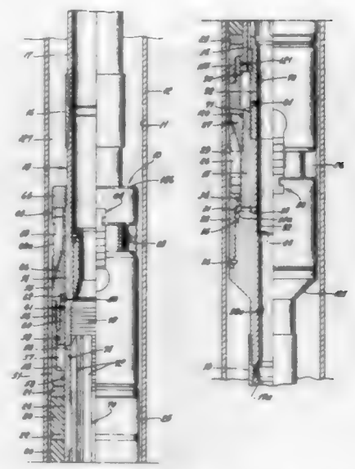
Fracture acidizing of a well is accomplished by injecting into an earthen formation an oily fluid composition having dispersed therein a finely divided acid soluble fluid loss component and then injecting into the formation an aqueous acidizing fluid capable of dissolving the fluid loss component.

3,374,836
LINER ANCHOR
Franklin P. Gribbin, P.O. Box 2102, Bakersfield, Calif., 93303
Filed Dec. 23, 1965, Ser. No. 516,048
6 Claims. (Cl. 166—51)



Anchor elements for a perforated liner in an oil well are located at the lower end of the liner, leaving the upper end unrestrained. This eliminates "creep" resulting from repeated thermal expansion and contraction cycles.

3,374,837
RETRIEVABLE PACKER
John S. Page, Lakewood, and Harvey R. Edwards, Bellflower, Calif.; said Edwards assignor to Page Oil Tools, Inc., Long Beach, Calif., a corporation of California
Filed Oct. 18, 1965, Ser. No. 496,831
12 Claims. (Cl. 166—120)

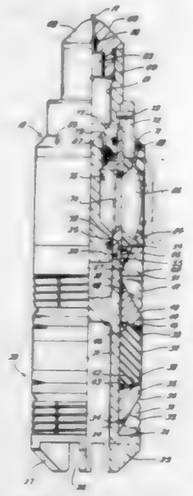


The invention provides for setting of a packer in a well by means of pressurization of fluid in a tubing string in relation to vertical manipulation of the string, the packer being carried on the string and typically being locked in set position; the invention also provides for release of the packer in response to pressurization of fluid in the string and vertical manipulation of the string.

3,374,838
FLUID EXPANSIBLE PACKER AND ANCHOR APPARATUS

James H. Current, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Nov. 8, 1965, Ser. No. 506,626
8 Claims. (Cl. 166—123)

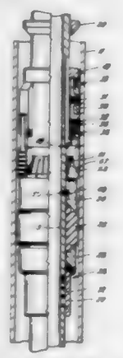


The particular embodiments described herein as illustrative of some of the various forms which the present invention can take include a well tool having a body member with slips and packing which are expanded by abutments movable relatively toward each other. In order to move the abutments relatively towards each other, pressure generating means is adapted to apply force to oppositely movable members, one of which is coupled to the body member and the other of which is coupled to one of the abutments. The oppositely movable members can include pistons and cylinders relatively sized to amplify the force applied to the body member and abutments. The oppositely movable members can be alternatively comprised of normally retracted expansible elastomeric means which can be expanded into engagement with the well casing wall and then elongated under pressure to apply force to the body member and abutments. Moreover, the present invention can include a releasing mechanism which is hydraulically operated to release the pressure generating means and oppositely movable members from the well tool after the slips and packing are expanded.

3,374,839
WELL PACKER APPARATUS

Maurice P. Lebourg, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Apr. 4, 1966, Ser. No. 539,794
4 Claims. (Cl. 166—131)

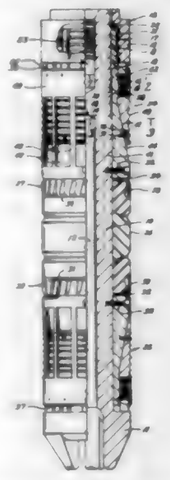


A well packer apparatus including a body member having a fluid passageway, slip and expander means for anchoring against movement in a well conduit, packing means for packing off a well conduit, port means in the body member extending between the passageway and the exterior of the body member, the packing means being normally disposed on the body member above the port means, and releasable means which couples the packing means to the body member and which is responsive to a predetermined force to permit movement of the packing means relative to the body member to position below the port means.

3,374,840
WELL TOOL

James H. Current, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Oct. 23, 1965, Ser. No. 503,945
6 Claims. (Cl. 166—134)

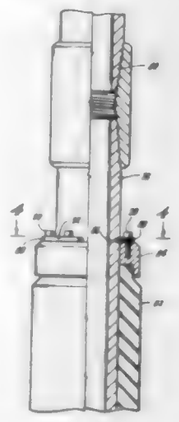


A well packer apparatus including a body member having a packing element mounted thereon, expander sleeves adjacent the end of the packing element, abutments engageable with the expander sleeves and movable relatively toward each other in order to advance the expander sleeves toward each other and thereby compress and expand the packing element, slip means movable on the expander sleeves to set positions, and means for moving the slip means to set positions independently of movement of the abutments relatively toward each other.

3,374,841
PACKER WITH SHEAR MEMBER

James H. Current, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Oct. 22, 1965, Ser. No. 500,946
3 Claims. (Cl. 166—138)



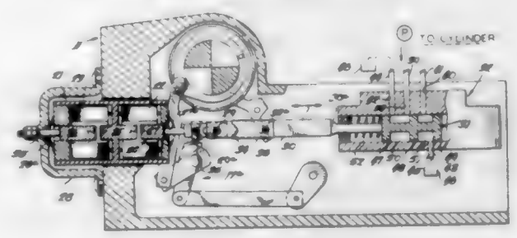
The particular embodiment described herein as illustrative of one form of the invention in well tools in-

cludes a mandrel with a packing element mounted thereon for packing off a well bore. An abutment engages one end of the packing element for exerting compression force thereon, and is releasably coupled to the mandrel by a shear member which normally prevents relative movement between the abutment and body, but which is responsive to a predetermined force to uncouple the abutment and mandrel. The shear member can be weakened along radial lines to permit segments thereof to be conveniently removed in order to selectively change the predetermined force necessary to uncouple the mandrel and abutment.

3,374,842
SOLENOID ACTUATOR FOR HYDRAULIC DRAFT CONTROL SYSTEM

Raymond H. Smith, Jr., Lockport, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Apr. 30, 1965, Ser. No. 452,093
8 Claims. (Cl. 172—7)

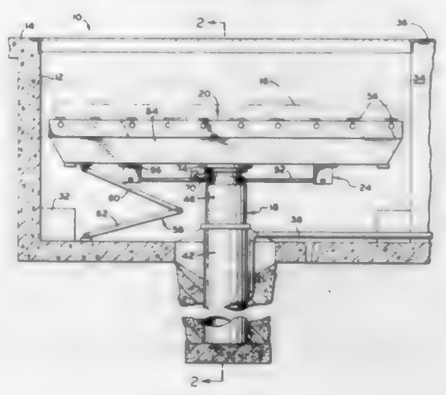


An electrical circuit capable of controlled positioning of a hydraulic valve in the power lift mechanism of a tractor to raise and lower a tractor-drawn implement in response to the sensing of undesired draft load conditions, which circuit includes a three member solenoid with two separate windings, the solenoid being operatively connected to the hydraulic valve for successive positioning thereof in response to successive energizing and deenergizing of the windings by switches which are actuated to make and break the circuit in response to a signal from a draft load sensing mechanism.

3,374,843
ELEVATING SCALES

Robert D. Ruggles, Weston, and Frank B. Carder, Darien, Conn., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Filed Feb. 18, 1965, Ser. No. 433,592
11 Claims. (Cl. 177—1)



1. A pallet-loading lift scale for use in assembling large palletized cargo loads comprising:

(a) means defining a recess in the floor of a pallet loading area;

(b) a pallet-supporting platform adapted to fit within said recess;

(c) a hydraulic piston assembly in said recess connected to said platform to selectively position said platform in positions above and below the floor level of the loading area;

(d) and load isolating and measuring means for determining the vertical component of force between said platform and said piston assembly, said load isolating and measuring means including:

(1) an elongated depending member rigidly secured to said platform and extending longitudinally with respect to said hydraulic piston assembly;

(2) a plurality of radially extending stay bars horizontally positioned to connect the uppermost end of said piston assembly with said platform to prevent horizontal motion therebetween;

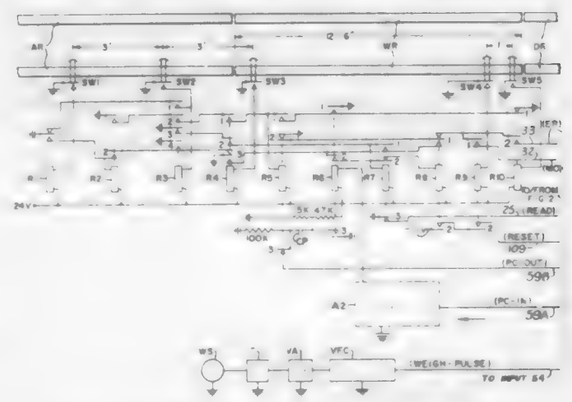
(3) horizontal force transmitting means positioned between the lower end of said depending platform member and said piston assembly to prevent horizontal motion therebetween;

(4) and a load cell positioned for through transmission of a vertical force from the platform to said assembly.

3,374,844
APPARATUS AND METHOD FOR WEIGHING RAILROAD CARS IN MOTION

Edward Laurence Rogers, Chicago, Ill., assignor to Railroad Machinery Development Corporation, Northfield, Ill., a corporation of Ohio

Continuation-in-part of application Ser. No. 365,470, May 6, 1964. This application Oct. 22, 1965, Ser. No. 501,391
21 Claims. (Cl. 177—134)



1. Apparatus for weighing successive railroad cars of a train in motion, said apparatus including a railroad track weigh section, members spaced from one another in a direction lengthwise of the weigh section for actuation in succession as the rolling equipment approaching the weighing position on the weigh section reaches predetermined successive positions for determining if the rolling equipment is a freight car to be weighed or a locomotive and for determining if the equipment is a freight car having trucks of two axles or of three axles, and a weight recorder controlled by said members.

3,374,845
COMMAND CONTROL SYSTEM FOR VEHICLES

Donald Selwyn, 238 Poplar Ave., Pompton Lakes, N.J. 07442

Filed May 5, 1966, Ser. No. 547,832
18 Claims. (Cl. 180—6.5)

1. A multi-function control system for generating a plurality of distinct control signals responsive to the com-

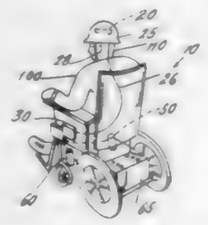
ponents of movement of a user's body in selectively determined command directions, comprising:

a housing structure having means for attachment to a user's body;

a sensing assembly carried by said housing structure;

said sensing assembly including sensing means for responding to the different components of movement of said housing structure, and providing output command signals operatively related to the particular directional components of movement of said housing structure;

a logic circuit including an input, signal processing means, and an output;



said sensing means output signals connected to the input of said logic circuit;

said signal processing means providing an output logic signal in accordance with the particular sensing means command signals presented to said logic circuit;

means for performing a multiplicity of functions operatively connected to the output of said logic circuit;

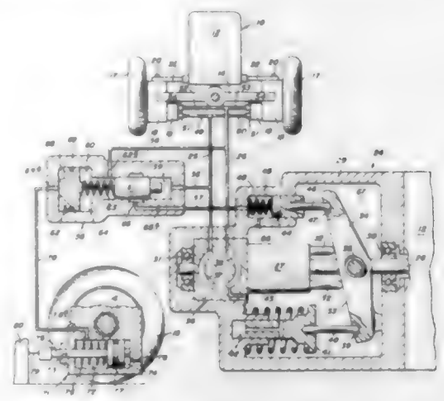
said output logic signal providing a plurality of control signals for controlling the operation of said multi-function means in a selectively determined manner, such that the direction of movement of said housing structure allows the user to selectively control the operation of said multi-function means by his body movement.

3,374,846
STEERING AND BRAKING HYDRAULICS
Luigi Massone, Genoa, Italy, assignor to Landini S.p.A., Reggio Emilia, Italy
Filed Oct. 21, 1965, Ser. No. 499,153
8 Claims. (Cl. 180—6.7)

A hydraulic steering clutch and steering brake control for a tracked vehicle including a pair of actuating spools each of which is movable from a spring biased position to sequentially cause disengagement of the steering clutch and engagement of the steering brake of its associated track.

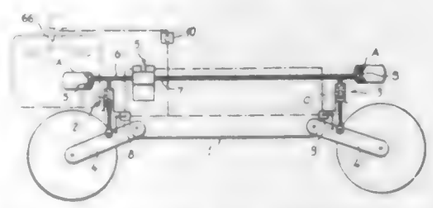
3,374,847
TRACTOR DRIVING EFFORT RESPONSIVE TO PULLED LOAD
Tadeusz Budzich, 80 Murwood Drive, Moreland Hills, Ohio
Filed Oct. 21, 1965, Ser. No. 509,672
27 Claims. (Cl. 180—14)

An auxiliary hydrostatic transmission for a farm tractor which employs a variable fluid pump adapted to drive fluid motors mounted on the wheels of the tractor. A force sensing cell is provided which is attached to the connecting couple of the tractor and through a control



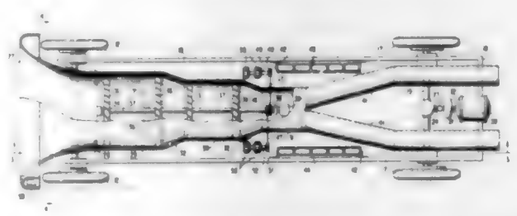
mechanism provides a signal to vary the energy output of the fluid pump corresponding to the magnitude of the load being pulled by the tractor.

3,374,848
VEHICLE ATTITUDE CORRECTING DEVICES
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, Seine, France
Filed Oct. 4, 1965, Ser. No. 492,647
Claims priority, application France, Jan. 20, 1965, 2.583, Patent 1,432,614
4 Claims. (Cl. 180—41)



A device for correcting the attitude of a vehicle including hydraulic means actuated by a fluid distributor to raise and lower the vehicle frame with respect to at least two of its wheels, and a control lever movable in response to relative movements between the frame and the wheels to actuate valve means which control the operation of the distributor in response to said relative movement. Regulating means are also provided which cooperate with the valve means to regulate the desired ground clearance of the frame.

3,374,849
ELECTRIC VEHICLE
Lawrence E. Redman, 2005 E. Adams St., Phoenix, Ariz. 85034
Filed Sept. 28, 1966, Ser. No. 582,647
7 Claims. (Cl. 180—65)



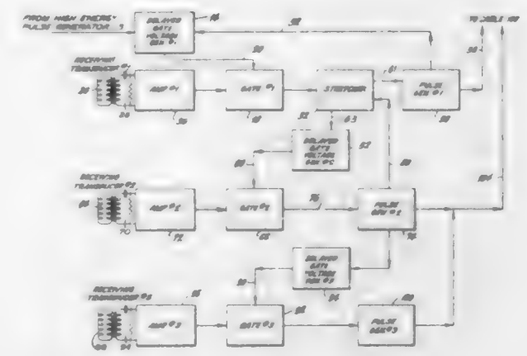
1. In a vehicle having a frame and a pair of driving wheels, an electric motor mounted on said frame and connected to said wheels for rotatably driving same, a support mounted on each side of said vehicle frame, a bank

of batteries in each support, an air scoop at the forward end of said frame, an elongated housing communicating with said scoop, a plurality of turbine elements positioned in said housing for rotation therein, a plurality of alternators driven by said turbine elements and control means for connecting said electric motor to one of said bank of batteries for driving said vehicle while connecting the other bank of batteries to said alternators for replenishing the charge in said other bank of batteries upon the rotation of said turbine elements.

3,374,850
RESILIENTLY BIASED STEERING SYSTEM
Donald A. Cech, Cicero, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 2, 1966, Ser. No. 569,747
1 Claim. (Cl. 180—79.2)

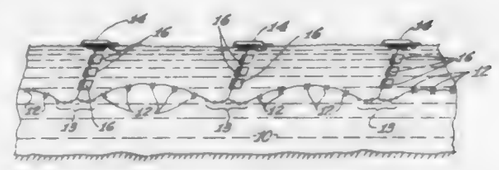
A device for use in a steering system for holding a rotatable steering wheel in a centered position, the device having a predetermined resilient bias force acting on a rotatable steering column which bias can be overcome by a sufficient steering turning force to then provide steering action.

3,374,851
SIMULTANEOUS DUAL SPACED ACOUSTIC WELL LOGGING SYSTEM
Adrian P. Brokaw, Stillwater, Okla., assignor, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 35,969, June 14, 1960. This application Aug. 25, 1967, Ser. No. 663,446
4 Claims. (Cl. 181—.5)



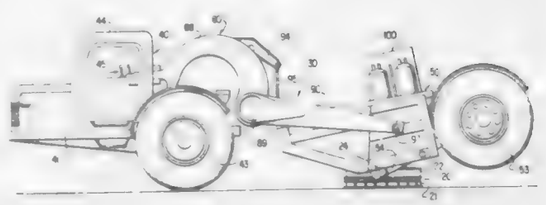
Three acoustic receivers are trailingly spaced from a single acoustic transmitter. The first receiver circuit is opened after a predetermined delay from the time of the acoustic pulse from the transmitter and closed upon receipt of the pulse. The second receiver circuit, being responsive to the first receiver circuit, is opened after a predetermined delay from the time the acoustic pulse is received in the first receiver circuit and closed upon receipt of the pulse in the second receiver circuit. The third receiver circuit, being responsive to the second receiver circuit, is opened after a predetermined delay from the time the acoustic pulse is received in the second receiver circuit and closed at a predetermined time after opening.

3,374,852
HYDROPHONE SUSPENSION SYSTEM FOR MAINTAINING HYDROPHONE FOR A PRESELECTED DEPTH
Booth B. Strange and Ben B. Thigpen, Shreveport, La., assignors to Western Geophysical Company of America, Los Angeles, Calif.
Filed Sept. 8, 1965, Ser. No. 485,896
1 Claim. (Cl. 181—.5)



A hydrophone suspension system for maintaining hydrophones at a uniform depth is provided which includes a positive buoyancy cable for supported plurality of spaced hydrophones. Weights are spaced along the cable to provide a negative buoyancy for the cable and weights. A plurality of floats are provided which are connected to the cable adjacent to the aforesaid weights to provide a net positive buoyancy for the entire suspension system.

3,374,853
TRANSPORTABLE SEISMIC WAVE GENERATOR SUPPORT
Lauren G. Kilmer, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 321,743, Nov. 6, 1963. This application Apr. 22, 1966, Ser. No. 544,482
4 Claims. (Cl. 181—.5)

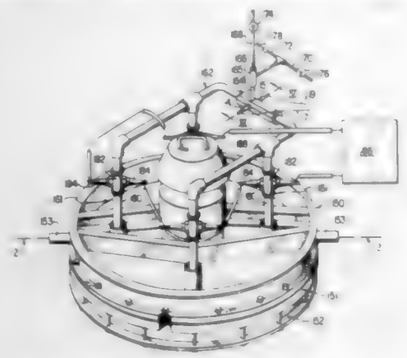


A two-part, transportable seismic wave generator support permitting engagement of the generator between forward and rear supporting wheels which is capable of moving the generator vertically including a shock absorbing unit arranged between the two parts thereof.

3,374,854
SEISMIC PULSE GENERATOR WITH GAS CUTOFF
Lauren G. Kilmer, Tulsa, and William W. Burress, Broken Arrow, Okla., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed June 9, 1966, Ser. No. 556,502
13 Claims. (Cl. 181—.5)

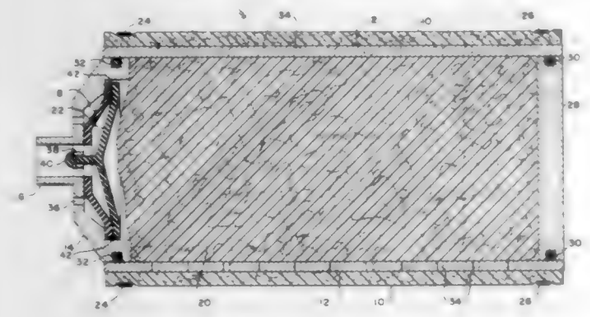
A gas exploder-type seismic wave generator including an explosion chamber and valved gas conduits for supplying gas to the chamber and having an ionization gap

across which current passes when a flame is present within the chamber. The current triggers solenoids which



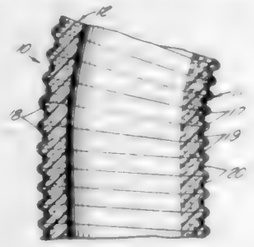
close valves in the gas conduits to insure that no more gas is supplied to the chamber once the flame has been initiated.

3,374,855
MUFFLER AND DIFFUSER FOR UNDERWATER DIVING
Thomas E. Kelly, Victoria, British Columbia, Canada, and Frederick Bigger, Key West, Fla., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 20, 1967, Ser. No. 634,039
10 Claims. (Cl. 181—36)



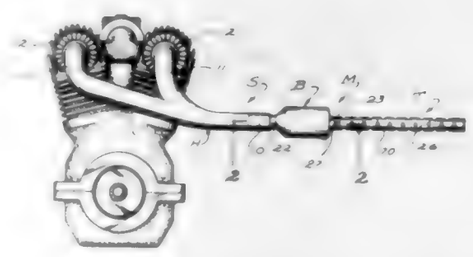
An underwater sound muffler comprising a container having a check valve for admitting air at one end. The container is apertured and filled with membraneless open cell type foam material. A layer of open cell type foam material having membranes covers the container allowing air to diffuse out without the formation of bubbles.

3,374,856
FLEXIBLE SOUND ATTENUATING DUCT WITH FOAMED PLASTIC LINING
Leslie S. Wirt, Phoenix, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Sept. 9, 1966, Ser. No. 578,362
11 Claims. (Cl. 181—42)



1. A flexible sound-attenuating duct comprising:
(a) a flexible tubular casing; and
(b) a liner in said casing, said liner being composed of a sound-damping material with a through-flow resistance of the same order of magnitude as the specific acoustic impedance of the fluid to be carried by the duct, said material having the characteristic of being extensible in a direction parallel to the axis of the casing when subjected to tension and retractable upon the release of such tension.

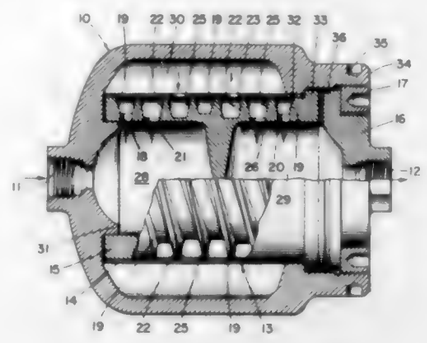
3,374,857
MUFFLER CONSTRUCTION
Hugh A. Hutchins, 1362 Green Lane, La Canada, Calif. 91011
Filed Dec. 29, 1966, Ser. No. 605,889
10 Claims. (Cl. 181—58)



1. A muffler construction of the character referred to including, an elongate, normally horizontally extending, tubular body with a cylindrical side wall and front and rear end walls, an elongate, central, forwardly opening, tubular inlet neck on and projecting forwardly from the front wall and communicating with the interior of the body, an elongate forwardly and rearwardly opening tail pipe concentric with and carried by the rear wall and having a forward portion projecting freely into the body and a rear portion projecting freely rearwardly from the body, a flat radially extending disc-shaped baffle in the central forward portion of the body and spaced rearwardly from the front wall and radially inward from the side wall and cooperating with said front and side walls to define a forward receiver chamber, a plurality of circumferentially spaced, radially extending vanes between the baffle and the side wall and pitched to impart cyclonic motion in and to gases and matter flowing rearwardly in the body between the baffle and the side wall, and a radially inwardly and axially forwardly inclined directing cone in the body between the forward end of the tail pipe and the side wall and spaced axially between the baffle and the rear wall to cooperate with the said baffle, side and rear walls to define a central separator chamber and a rear trap chamber, the outer rear portion of the cone being formed to define an axial opening adjacent the top of the side wall establishing communication between the separator and trap chambers.

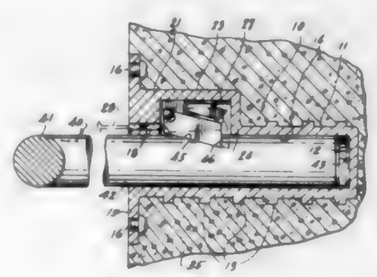
3,374,858
ACOUSTIC FILTER WITH PLURAL HELICAL PASSAGES
John F. Richards, Santa Paula, Calif., assignor to Wilhelm S. Everett, Ventura County, Calif.
Filed Aug. 24, 1966, Ser. No. 574,642
6 Claims. (Cl. 181—59)

1. An improved acoustic filter for decreasing pressure pulsations in a fluid line comprising: a closed housing having an inlet port and an outlet port connected in series with said line; first partition means defining with said housing an inlet chamber and an outlet chamber communicating, respectively, with said inlet port and outlet port; second partition means defining with said housing an intermediate chamber separated from said inlet chamber and said outlet chamber; a first helical passage extending circumferentially within said housing from said inlet chamber to said outlet chamber; a second helical passage extending circumferentially within said housing from said inlet chamber to said intermediate chamber;



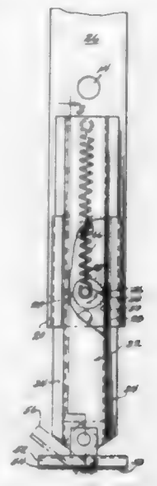
a third helical passage extending circumferentially within said housing from said intermediate chamber to said outlet chamber.

3,374,859
ANCHOR DEVICE WITH RELEASABLE LATCH MEANS
Alfred F. Dobert, Sand Lake, N.Y., assignor to Creative Associates of Albany, Ltd., Latham, N.Y., a corporation of New York
Continuation of application Ser. No. 386,335, July 30, 1964. This application July 24, 1967, Ser. No. 655,670
4 Claims. (Cl. 182—92)



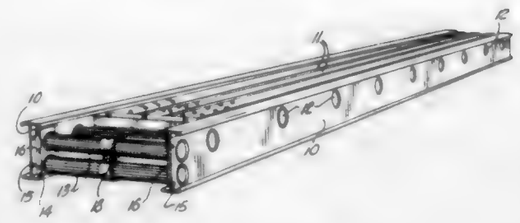
1. A fixture assembly for a poured concrete wall, said fixture assembly comprising, in combination, at least one socket insert for anchoring in the wall during pouring thereof, said socket insert comprising a laterally extended flange and a substantially rectilinear sleeve integral with said flange and extending normal thereto, said sleeve opening outwardly through said flange and having a closed inner end; said sleeve defining a relatively elongated socket; a pair of laterally spaced parallel walls extending rearwardly from said flange and substantially radially outwardly from said sleeve and defining, with a third wall extending therebetween and between said flange and said sleeve, an outwardly closed recess opening laterally from said socket; a pivot pin extending between said spaced parallel walls; a substantially flat latch pivoted to said pin and having a thickness substantially equal to the spacing of said parallel walls; biasing means operable between said latch and said third wall to bias said latch to project into said socket; and a fixture having at least one elongated substantially rectilinear shank substantially conformingly insertable into said sleeve with its length within said sleeve being in substantially full surface-to-surface engagement with said sleeve, and formed with a notch for locking inter-engagement with said latch to inhibit withdawal of said shank from said socket; said flange being formed with a passage extending inwardly from the outer face thereof and communicating at its inner end with said recess to receive a pin or the like to engage and pivot said latch to release the same from said notch.

3,374,860
SELF-LEVELING LADDER ATTACHMENT
Lyle F. Stewart, Tippecanoe, Ohio 44699
Filed May 2, 1966, Ser. No. 546,967
16 Claims. (Cl. 182—204)



A leveling attachment for a ladder including an extension member slidably received in a channel attached to the ladder leg and an eccentric cam pivotally secured to the channel member and adapted to frictionally engage a substantially flat, continuous locking surface on an interior face of the extension member.

3,374,861
SCAFFOLDING PLATFORM
Raymond H. Shaver, Newark Valley, N.Y., assignor to Harsco Corporation, Wormleysburg, Pa.
Filed Mar. 8, 1967, Ser. No. 621,688
2 Claims. (Cl. 182—222)

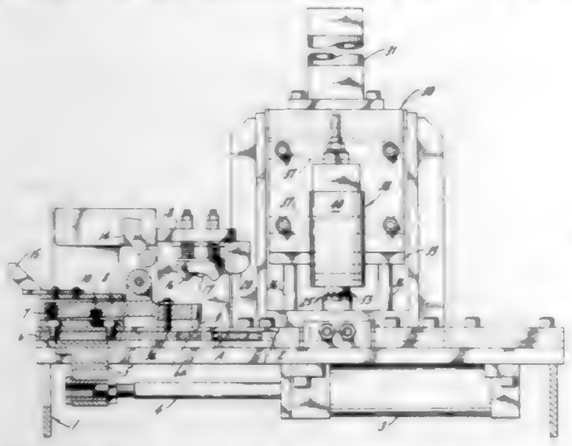


A scaffolding platform of light weight metal having a decking comprising longitudinally extending laterally interconnected floor slats supported on intermediate rungs or transverse bars between parallel rails. End rungs are positioned between end portions of the rails to protect the ends of said decking and to stiffen the platform structure against torsional strains. Said end rungs are mounted with their ends engaged in channels secured to the rails and are reinforced by rigid elements which securely connect their intermediate portions.

3,374,862
BEARING BALL GREASING MACHINE
Curtiss A. Reynolds, Rockford, Ill., assignor to Rehnberg-Jacobson Mfg. Co., Inc., Rockford, Ill., a corporation of Illinois
Filed June 3, 1965, Ser. No. 461,003
7 Claims. (Cl. 184—1)

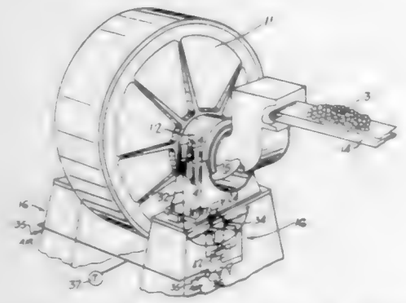
A greasing assembly for bearinigs having movable retainers, including a track, a finger movable into a bear-

ing and tiltable to move the retainer, and a grease nozzle alignable with the positioned retainer valleys to deposit



grease radially of the bearing and means for maintaining a clean nozzle.

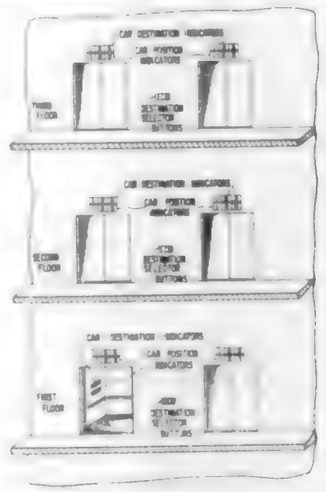
3,374,863
AUTOMATIC HIGH PRESSURE LUBRICATION SYSTEM FOR ROTARY GRINDING MILLS
Melvin M. Kozlowski, Montreal, Quebec, and Thomas E. Harris, Pointe Claire, Quebec, Canada, assignors to Dominion Engineering Works Limited, Montreal, Quebec, Canada
Filed Apr. 29, 1965, Ser. No. 451,842
4 Claims. (Cl. 184—6)



1. In a rotary grinding mill having a grinding drum rotatably supported on coaxially extending journals, having a journal low pressure lubricating system normally operative with operation of the mill to supply lubricant to said journals, the improvement comprising a high pressure lubricant supply means connected to the underside of said journals to provide journal lubricant at sufficient pressure to free and lubricate said journals prior to rotation of the mill, lubricant control means to control the operation of said supply means for a predetermined time interval, and means connecting said control means with the starting system of said mill to initiate operation of said control means whereby on starting the mill said high pressure means is energized to free and lubricate the mill prior to rotation thereof, said predetermined time interval overlapping the commencement of mill rotation to maintain lubrication by high press lubricant until said normally operative lubricating system becomes effective.

3,374,864
ELEVATOR CONTROL WHEREIN CAR DESTINATION IS REGISTERED BY SAME SWITCH WHICH REGISTERS CAR CALL
Leo Weiser Port, 10 Terrigal Ave., Turramurra, near Sydney, New South Wales, Australia
Filed Feb. 6, 1964, Ser. No. 342,975
4 Claims. (Cl. 187—29)

1. In an elevator system comprising at least two elevator cars each serving at least three floors, an array of floor selector buttons adjacent to the car landings at each floor, circuit means which are pre-set by operation of any one of said floor selector buttons, said circuit means being adapted, after pre-setting, to control the driving motors of the elevator cars so as to control one of said elevator cars to halt at a floor at which a floor selector



button was operated, and to remain there for a time sufficient to enable a passenger to enter said car, and then to control said car to travel to the selected destination floor and means located in each of said elevator cars for indicating the destination of that car and means located at each of said floors for indicating the destination of each elevator car.

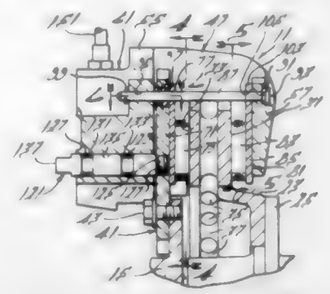
3,374,865
SNUBBER FOR DEPLOYING LINES
Jimmie M. Craig, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 17, 1966, Ser. No. 588,269
1 Claim. (Cl. 188—1)

Shock absorber for a line disposed between a parachute and a suspended load in which a portion of the line is looped within a plastic deformable tube which compresses in stacked convolutions as the line increases in tension, the convolutions providing increasing frictional resistance against shortening of the loop as the loop ends are pulled from the tube.

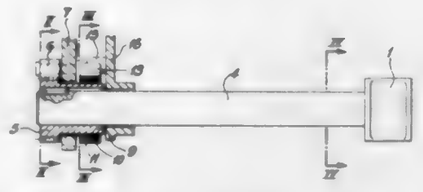
3,374,866
MOUNTING MEANS FOR A SLIDING CALIPER DISK BRAKE
Chester W. Miles, Detroit, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Oct. 6, 1966, Ser. No. 584,803
4 Claims. (Cl. 188—73)

A sliding caliper type disk brake embodying a torque plate carrying a pair of outwardly extending pins that

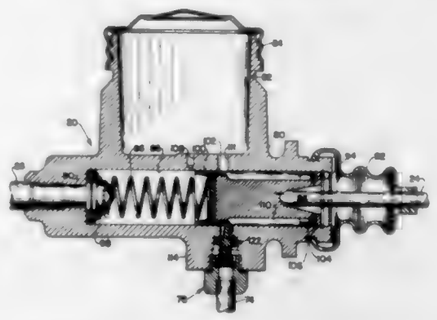
are perpendicular to the braking surface of the associated disk and which extend away from the disk. The caliper assembly of the brake has a pair of bores in one of its



legs that slidably supports the caliper upon the pins. Resilient O-rings are interposed between the pins and caliper bores for exerting a restoring force upon the caliper when the brakes are released.

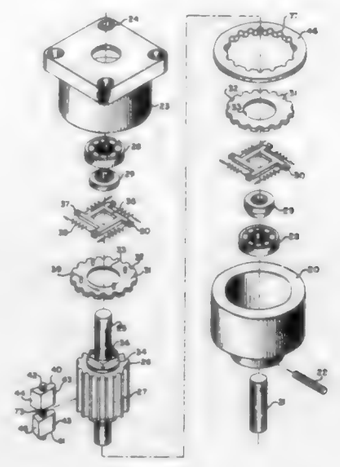
3,374,867
AUTOMATIC DEVICE FOR TAKING UP WEAR IN THE LININGS OF BRAKES
Max Henry Pirard, Chateau de la Cachette, Nouzonville, Ardennes, France
Filed May 16, 1966, Ser. No. 550,247
Claims priority, application France, Dec. 29, 1965, 44,142
5 Claims. (Cl. 188—79.5)

Braking system in which operator control is coupled to a brake by a ratchet and pawl in turn connected to a friction device which slips for taking into account the wear of the brake.

3,374,868
BRAKE SYSTEM
James C. Cumming, Pleasant Ridge, Mich., assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Continuation of application Ser. No. 491,774, Sept. 30, 1965. This application Sept. 20, 1966, Ser. No. 580,828
2 Claims. (Cl. 188—152)



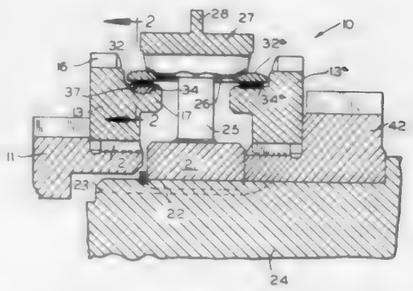
Master cylinder for a torque reaction brake system with independent primary and secondary circuits, the master cylinder having a piston, a portion of which pressurizes only the primary circuit and another portion of which controls a valve for isolating the primary and secondary circuits except when the brakes are released.

3,374,869
CAM OPERATED REVERSIBLE CLUTCH MECHANISM
James M. Steinke, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Sept. 2, 1966, Ser. No. 576,948
9 Claims. (Cl. 192—26)



A reversible clutch mechanism including an output shaft mounted within a driving member and a driven or brake member. A first set of cam members are mounted between the driving member and the output shaft with a second set of cam members mounted between the output shaft and the driven or brake member, corresponding cam members of both sets being interconnected for simultaneous movement. A control member operated externally of the clutch mechanism engages the interconnecting means to move one or the other set of cam members into an engaging position so that the output shaft is either driven or stopped. One embodiment of the clutch mechanism has wedged shaped cam members while a second embodiment has roller shaped cam members.

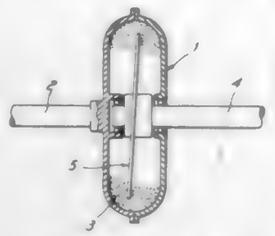
3,374,870
TRANSMISSION SYNCHRONIZER
Lawrence M. Johnston, Jr., Fort Wayne, Ind., assignor to International Harvester Company, a corporation of Delaware
Filed Nov. 4, 1965, Ser. No. 506,320
10 Claims. (Cl. 192—53)



A synchronizer clutch mechanism capable of controlling the engagement of two positively engageable clutch elements that form part of a torque delivery path between a driving member and a driven member of a power mechanism and involves a friction clutch of the type including a helically-wound spring capable of being wrapped or radially expanded into frictional or gripping engagement with a flexible strip ring so as to couple the driving and driven members together frictionally.

3,374,871
METHOD TO START HIGH-POWERED MACHINES BY MEANS OF CENTRIFUGAL POWDER OR GRANULAR TYPE JOINTS

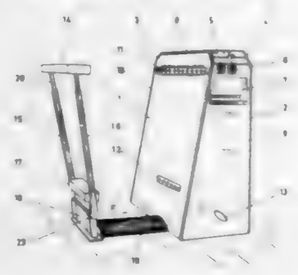
Ubaldo Ranzi, Via Roma 2, Legnano, Italy
Filed June 29, 1965, Ser. No. 467,850
4 Claims. (Cl. 192—58)



1. A torque transmitting coupling comprising relatively rotatable driving and driven elements, said driving element being a hollow casing with a drive shaft connected thereto, said driven element comprising a driven shaft having a disc rotatable therewith and disposed in said casing, said disc having a diameter less than the diameter of said casing, said casing having a mass of discrete granular material therein which serves as the torque transmitting medium between said elements, and the casing having an interior smooth and highly polished surface.

3,374,872
APPARATUS FOR AUTOMATICALLY CONTROLLING ADMISSION TO THEATERS AND THE LIKE

Theophile Guillerm, Cinema de Francais, 22 Cotes-du-Nord, Lannion, France
Filed July 28, 1966, Ser. No. 568,571
6 Claims. (Cl. 194—10)

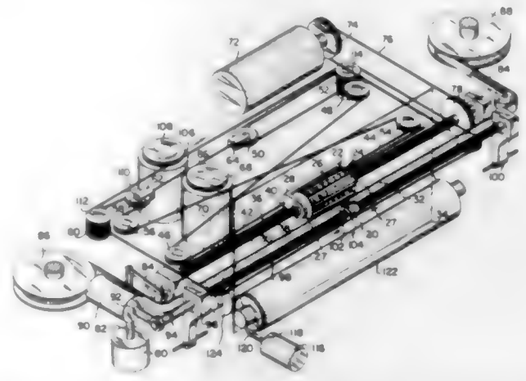


A housing at the entrance to a theater encloses a money handling device which counts and collects money introduced into the housing, gives change, and collects tokens. A ticket distributing device in the housing discharges tickets, and a token distributing device discharges tokens. The passing of a person past the housing is sensed. The several devices are connected with each other and an alarm by an electronic circuit so that the alarm is energized by the sensed passing of a person in one direction unless the alarm is inactivated by the collecting of money and the subsequent automatic delivery of a ticket, or by the collecting of a token. A token is discharged when the passage of a person in the opposite direction is sensed.

3,374,873
PRINTING APPARATUS EMPLOYING BIDIRECTIONAL STEPPING MOTORS TO POSITION TYPE MEMBER

George Takenaka, Santa Ana, Calif., assignor to Codamite Corporation, Anaheim, Calif.
Filed Feb. 17, 1964, Ser. No. 345,342
9 Claims. (Cl. 197—49)

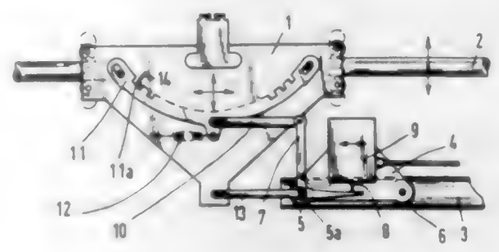
A printer is disclosed that utilizes a single font of somewhat cylindrical configuration, bearing type for various symbols upon its peripheral surface. The font is movably mounted to accommodate rotation and axial displacement, to set a desired symbol in printing position. The type font is controlled in movement by shift registers operating in combination with a source of pulses bi-directional stepping motors and reset apparatus. The printer is responsive to various codes which are registered by components in the shift registers which are then cleared



by pulses that step the stepping motors to position the type font by driving the stepping motors in a forward direction to accomplish the desired position in components. Thereafter, the type font is actuated to print the desired symbol. Structure is disclosed for returning the type font to a home position by reverse stepping the stepping motors.

3,374,874
SELECTOR SEGMENT SETTING DEVICE FOR TELETYPE MACHINES

Rudolf Rekewitz and Richard Reier, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Oct. 22, 1965, Ser. No. 505,138
Claims priority, application Germany, Dec. 11, 1964, S 94,576
7 Claims. (Cl. 197—72)

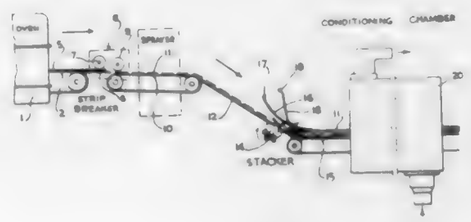


Code bar adjustment means in which the carrier for the code bar is vertically adjustable into at least three type group positions. The code bar carrier in the one form of the invention is horizontally and vertically shiftable, and the adjustment mechanism for the code bar is mounted on a carriage which is shiftable horizontally with the code bar carrier. The code bar is in the form of a segment of a circle and is adjustably mounted at its opposite ends on its carrier for movement generally conforming to the mean arc of the code bar. The actuator for adjusting the code bar is in the form of an electromagnet mounted on a carriage having an armature operating a bell crank lever pivoted to the carriage, intermediate its ends. The bell crank has a vertical arm pivotally connected at its upper end to a coupling link, pivoted to the code bar intermediate the ends of the code bar with its longitudinal center line extending generally tangentially of the lower side of the code bar. A spring connected to the code bar biases the code bar into one position of adjustment, while the

armature moves the code bar into a second position of adjustment. Vertical adjustment of the code bar carrier is compensated for by a second coupling link pivotally connected to the carrier in vertical alignment with the pivotal connection of the first coupling link to the carrier, and pivotally connected to the carriage for movement about the axis of the pivot of the bell crank. This provides a parallel compensating linkage arrangement connected between the code bar carrier and code bar, compensating for vertical adjustment of the carrier into its various positions of adjustment and enabling the positions of the code bar to be maintained uniform and to be uniformly adjusted in the various positions of adjustment of the carrier. In another form of the invention the armature of the electromagnet is directly connected to the first coupling link. The second coupling link is connected to the casing for the electromagnet. The electromagnet is mounted on a stationary support for horizontal movement, to compensate for angular movement of the first and second coupling links and the various elevations of the code bar carrier relative to the armature of the electromagnet. In a third form of the invention a cam is provided on the free end of the second coupling link and the coupling link is guided intermediate its ends for longitudinal and pivotal movement. The cam abuts an abutment surface extending from the casing for the electromagnet. This abutment surface is biased into engagement with the cam by a spring.

3,374,875
ARTICLE CONVEYING, SEPARATING AND STACKING APPARATUS

Arthur J. Griner, Wyckoff, N.J., assignor to National Biscuit Company, New York, N.Y., a corporation of New Jersey
Original application Dec. 31, 1963, Ser. No. 334,796. Divided and this application Dec. 21, 1966, Ser. No. 603,485
8 Claims. (Cl. 198—35)

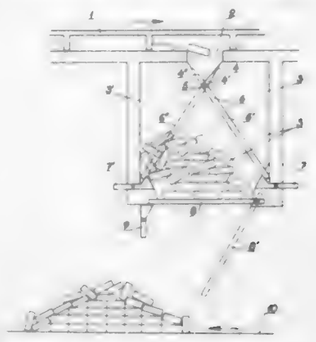


Apparatus for handling relatively flat articles comprising conveyor means for continuously feeding a column of articles onto a stationary inclined platform down which the articles slide for on-edge stacking on a slower delivery conveyor positioned a short distance below the lower end of the platform, and rotating cam members projecting through slots in the platform to lift the articles for permitting shingling thereof as the advance of the thus lifted articles is retarded by the delivery conveyor.

3,374,876
ARTICLE RECEIVING HOPPER

Alpo Rysti, Frisans, Finland, assignor to Safeko Oy, Helsinki, Finland, a corporation of Finland
Filed Oct. 26, 1966, Ser. No. 589,724
Claims priority, application Finland, Apr. 23, 1966, 1,065/66
2 Claims. (Cl. 198—68)

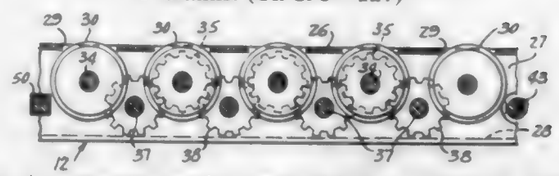
An article receiving hopper has a top opening and a shaft located within the hopper and carrying a swingable guide plate and a swingable partition. The guide plate and the partition divide the interior of the hopper into two compartments so that timber can be dropped through the top opening into any one of these two compartments. The partition can be located in any one of two end positions.



The bottom of the hopper is constituted by a lockable discharge hatch, so that timber can be dropped from the hopper upon a conveyor or the like.

3,374,877
SECTIONALIZED POWER DRIVEN CONVEYOR

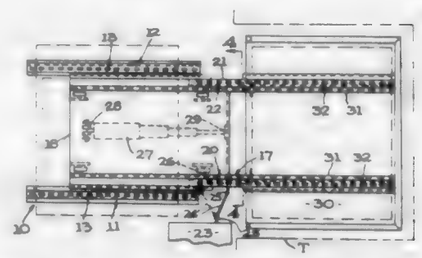
Edward T. Kornylak, Hamilton, Ohio, assignor to Kornylak Corporation, Hamilton, Ohio, a corporation of New Jersey
Filed Aug. 19, 1964, Ser. No. 390,576
5 Claims. (Cl. 198—127)



1. A conveyor section comprising a rollerway with power driven rollers, wherein the rollerway includes an inverted channel with a top web and vertical side walls, the top web having aligned longitudinally spaced openings therein adjacent one vertical side wall, axle means in said vertical side walls, rollers on said axle means and projecting slightly through said openings, each said roller comprising a hub rotatably mounted on said axle means, and having a hard elastomeric tire thereon and means within said channels for driving said rollers, said means comprising a gear formed on said hub adjacent said roller, at one side thereof, the channels are further provided with axle means mounted intermediate and below said rollers and including gears mounted on said latter mentioned axle means, said gears meshing with the gears on said hubs, and means for driving one of said gears.

3,374,878
ROLLER CONVEYOR SYSTEM

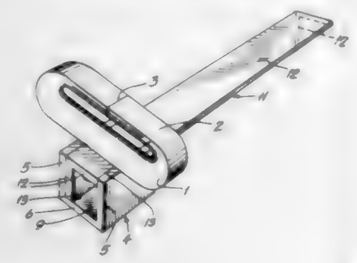
Andrew T. Kornylak, 400 Heaton St., Hamilton, Ohio 45011
Continuation-in-part of application Ser. No. 392,223, Aug. 26, 1964. This application July 25, 1966, Ser. No. 567,577
11 Claims. (Cl. 198—127)



The disclosure herein relates to an arrangement wherein two substantially aligned conveyors, i.e., a dockside conveyor and one on board a vessel or other carrier, are sepa-

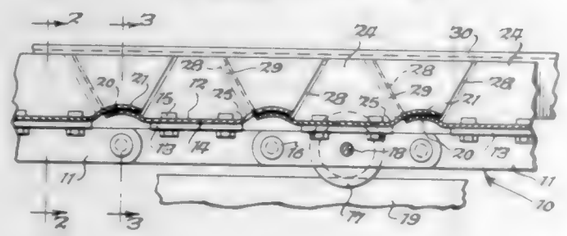
rated from one another. A movable conveyor section is arranged to move between the two aligned conveyors to bridge the gap between them. The movable or bridge section conveyor and the fixed or dockside conveyor are provided with rollerways having rollers therein and power operated means for driving said rollers. Intermediate rollers, below and between the conveyor rollers frictionally engage the conveyor rollers to drive same, and at least one intermediate roller is connected to a source of power. When the bridge section conveyor is connected to the second conveyor, on the carrier, the drive of its rollers is transferred to the rollers of the second conveyor. One form of movable conveyor is hinged on the end of the first or fixed conveyor. In another form, a carriage moves longitudinally in the space between the conveyor rails and bridges the gap between the first and second conveyors.

3,374,879
SCRAPER BLADE ATTACHMENT FOR STABLE CLEANER
Hector Vincent, St. Valerien, Quebec, Canada, assignor to La Cie Hydrolic Vincent Ltée, St. Valerien, Quebec, Canada
Filed Jan. 24, 1967, Ser. No. 611,311
7 Claims. (Cl. 198—176)



Scraper blade attachment for an endless belt.

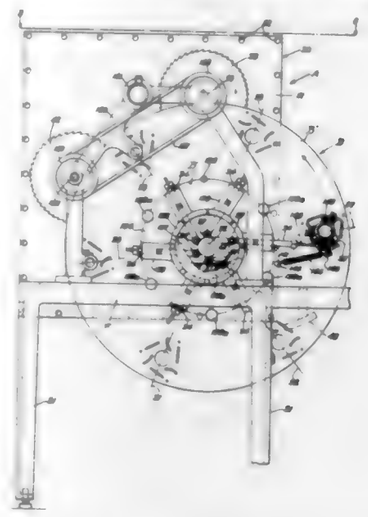
3,374,880
GUARD FOR APRON CONVEYORS
Frank J. Hohl, Snyder, N.Y., assignor to Hohl Machine & Conveyor Co., Inc., Buffalo, N.Y.
Filed Sept. 29, 1966, Ser. No. 582,839
10 Claims. (Cl. 198—196)



A plurality of aprons are arranged in overlapping relation to define a continuous conveyor supported for longitudinal movement. Inner and outer laterally spaced flights are secured to each apron adjacent each side margin for movement therewith. The flights project upwardly and form with the associated confined margins overflow channels extending continuously along the conveyor for retaining material overflowing the inner flights.

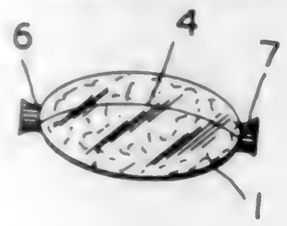
3,374,881
ARTICHOKE PROCESSING MECHANISM
Raymond C. Schwacofer, 23496 Sunset Drive, Los Gatos, Calif. 95030
Filed Sept. 15, 1965, Ser. No. 489,461
4 Claims. (Cl. 198—210)

An artichoke processing machine having a novel clamp for holding the stems of artichokes during processing. The clamp has a plurality of sets of gripping jaws mounted



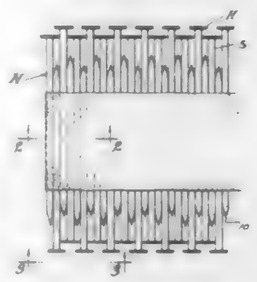
symmetrically around a peripheral portion of an indexing wheel.

3,374,882
COMPRESSED SPONGE PACKAGE
Arne S. Amaliksen, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,184
5 Claims. (Cl. 206—46)



1. A packaged, compressed sponge comprising a porous sponge, impregnated with an impregnating material, tightly compressed into a small size and totally enclosed by and sealed in a shrunken capsule of a synthetic thermoplastic film.

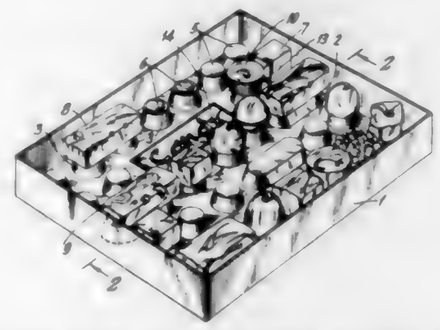
3,374,883
STICK OF FASTENERS FOR MAGAZINE SUPPLY
Richard E. Powers, San Marino, Calif., assignor to Powers Wire Products Co., Inc., El Monte, Calif., a corporation of California
Filed Feb. 7, 1966, Ser. No. 525,669
8 Claims. (Cl. 206—56)



1. A straight elongated and substantially rigid stick comprising a multiplicity of separably interengaged fasteners and wherein each fastener comprises an elongated axially disposed shank with an enlarged head concentric with the axis at one end, the axes of said multiplicity of fas-

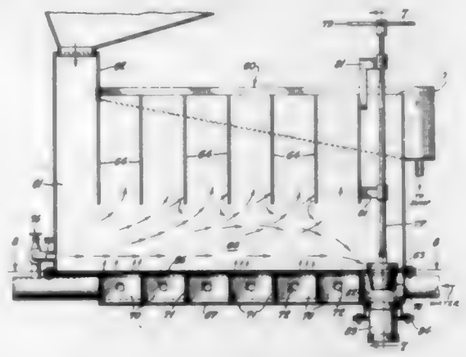
teners being disposed in a common plane and the shanks of each successive fastener being adjacent and parallel and engaged one with the other, the adjacent fasteners being oppositely faced, and each adjacent fastener being offset longitudinally along its axis with respect to the other thereby to space the heads thereof from the next adjacent shank, and there being means separately interconnecting the adjacently engaged shanks of the fasteners.

3,374,884
DISPLAY PACKAGE
Sam Chinkes, 95 Park Terrace E., New York, N.Y. 10034
Filed Apr. 13, 1967, Ser. No. 630,628
7 Claims. (Cl. 206—72)



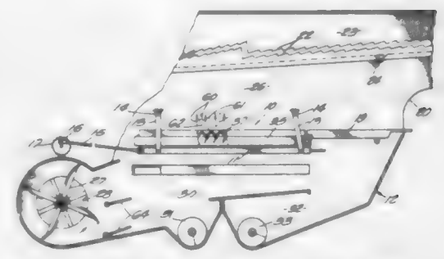
A packaging tray for small articles which is provided with adhesive coated platforms upon which the articles are removably adhered.

3,374,885
METHOD AND APPARATUS FOR BENEFICIATING MINERALS
Floyd J. Clawson and Michael C. De Stefano, Lakeland, Fla.; said Clawson assignor to Unifab, Inc., Camden, Tenn., a corporation of Tennessee
Filed Oct. 15, 1963, Ser. No. 316,372
11 Claims. (Cl. 209—17)



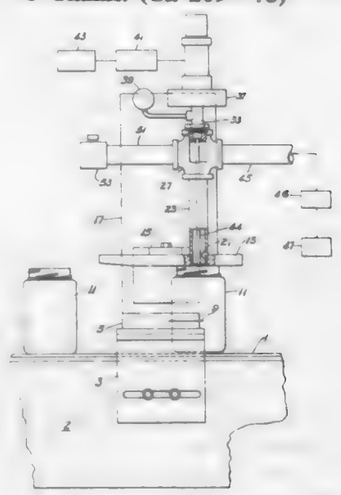
3. An apparatus for beneficiating minerals comprising:
feeder means for supplying a feed of a mineral slurry at constant volume and pressure,
a hydrocyclone for effecting a preliminary particle size separation into a lighter fines phase and a denser mineral phase of said mineral slurry,
means for delivering feed slurry from said feeder means to said hydrocyclone,
a deslimer,
means for delivering the denser mineral phase of said slurry from said hydrocyclone to said deslimer,
means separate from said denser mineral phase delivery means for injecting a first auxiliary liquid under pressure horizontally into said deslimer to move the particles in said slurry horizontally therethrough,
means for supplying a second auxiliary liquid upwardly into said deslimer under a pressure sufficient to remove the smaller slime particles but not the larger mineral particles,
means for delivering the overflow of slime particles from said deslimer back to said feeder means for reintroduction into said hydrocyclone,
and means for discharging the larger deslimed mineral particles from said deslimer.

3,374,886
GRAIN SEPARATOR CHAFFER ASSEMBLY
Arthur S. Lightsey, Cantua Creek, Calif. (1280 Allen Ave., Oakdale, Calif. 95361)
Continuation-in-part of application Ser. No. 346,719, Feb. 24, 1964. This application May 2, 1966, Ser. No. 546,914
2 Claims. (Cl. 209—28)



A chaffer assembly for combines and grain separators formed from corrugated material having rows of air inlet openings so arranged relative to adjustable air deflectors as to provide closely spaced sheet-like generally vertical streams of air flowing upward through the stream of chaff and straw passing rearwardly over the top of the chaffer assembly. The rising streams of air do not tend to blow the grain toward the rear end of the chaffer assembly and the relatively quiet air between the vertically rising air streams allows the grain to fall and pass through the air inlet openings into the grain collecting chamber below the chaffer assembly.

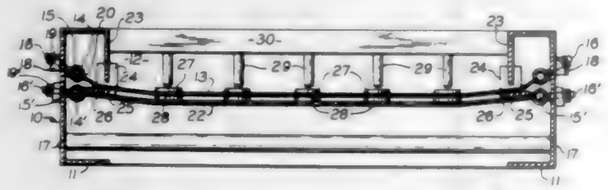
3,374,887
AUTOMATIC INSPECTION MEANS FOR CONTAINERS
Miller J. Paruolo and James H. McMeekin, Brockway, Pa., assignors to Brockway Glass Company, Inc., Brockway, Pa.
Filed Mar. 11, 1966, Ser. No. 533,521
5 Claims. (Cl. 209—73)



An apparatus for automatic inspection of containers that are advanced on a conveyor. The containers contact a switch which triggers a vacuum source. The vacuum

source will lift the container against a plate if the flat top of the container does not contain irregularities, cracks, holes or slits and register a maximum pressure difference. A reject mechanism will be activated if the top of the container contains sufficient irregularities to prevent the pressure inside from reaching a predetermined low value.

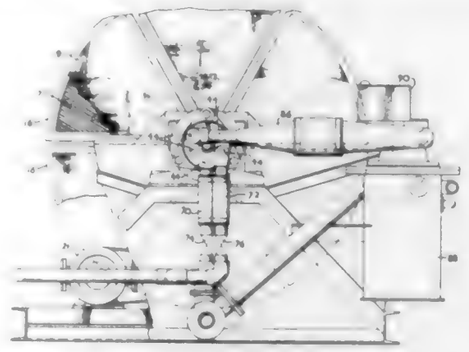
3,374,888
SCREENING MACHINE
Werner Volpert and Horst Hagen, Oelde, Germany, assignors to Haver & Boecker, Oelde, Westphalia, Germany, a private corporation
Filed Nov. 2, 1964, Ser. No. 408,187
Claims priority, application Germany, Nov. 8, 1963, H 50,779
3 Claims. (Cl. 209—319)



1. A material screening machine, which comprises a screen frame, a fine mesh screen disposed across said frame, a coarse mesh screen disposed across said frame in underlying parallel spaced relation to said fine mesh screen, a tension adjustment means connected to said frame and to said fine mesh screen to selectively adjust the tension thereof in each of two distinct lateral directions, a tension adjustment means connected to said frame and to said coarse mesh screen to selectively adjust the tension thereof in each of two distinct lateral directions, said fine and coarse mesh screens being disposed for independent tensioning adjustment by their respectively associated tension adjustment means, a first plurality of plate members secured to said fine mesh screen at individually distinct laterally spaced apart locations thereon, a second plurality of plate members secured to said coarse mesh screen at locations thereon underlying corresponding plates of said first plurality thereof, each of said first plurality of plates being disposed to receive impact forces and to transmit such received impact forces to corresponding underlying plates of said second plurality thereof, and a plurality of tappets each disposed for reciprocating movement along a path intersecting with a corresponding plate of said first plurality thereof and generally normal to the planes of said fine and coarse mesh screens to strike said plate and thereby excite vibrations in said fine and coarse mesh screens normal to their respective planes to aid in the screening of material through said screens.

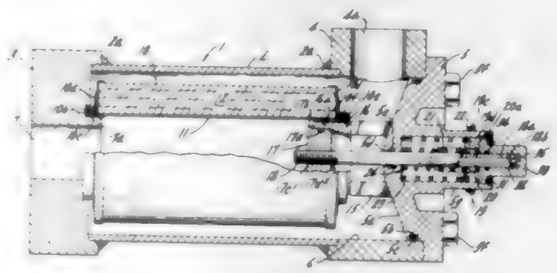
3,374,889
FILTRATION
Walter May Wallace, Carlisle, Cumberland, England, assignor to Simonacco Limited, Carlisle, England, a British company
Filed July 6, 1965, Ser. No. 469,471
Claims priority, application Great Britain, July 14, 1964, 29,201/64
1 Claim. (Cl. 210—77)

1. In a method of filtering a solid/liquid material wherein successive separate hollow filter sections of a rotatable filter assembly are cyclically immersed in said material and then removed from said material, the steps of applying vacuum to the interior of each section while it is immersed in said material to accumulate filter cake on said screening and periodically introducing compressed air into the interior of each said section in timed relation to rotation of the filter assembly to blow off filter cake while said section is removed from said material and only after said removed section has been successively immersed in said material a plurality of times so that a plurality of layers of filter cake are accumulated on each said section



before filter cake removal, said compressed air being applied to a filter section once during a period consisting of a complete revolution of the filter assembly plus a rotational increment thereof susbtantially equal to the reciprocal of the number of filter sections.

3,374,890
HYDRAULICALLY BALANCED BY-PASS INDICATOR FOR FILTERS
Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 19, 1965, Ser. No. 434,022
9 Claims. (Cl. 210—90)

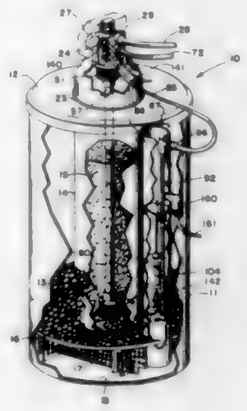


A filter assembly having a housing with an inlet and outlet, a filter element therein with a core directly communicating with the housing outlet, a closure member in said housing having a closed chamber therein, and a sleeve thereon sealingly extending into said core, a by-pass valve seating on said sleeve, an elongated rod extending through said valve into said closed chamber, said rod having an indicator thereon and a passage therein connecting said closed chamber with said core.

3,374,891
AUTOMATIC WATER SOFTENING APPARATUS
Louis J. Buchmann, Buffalo, N.Y., assignor to Aquionics Corporation, Buffalo, N.Y., a corporation of New York
Filed May 18, 1964, Ser. No. 368,024
9 Claims. (Cl. 210—126)

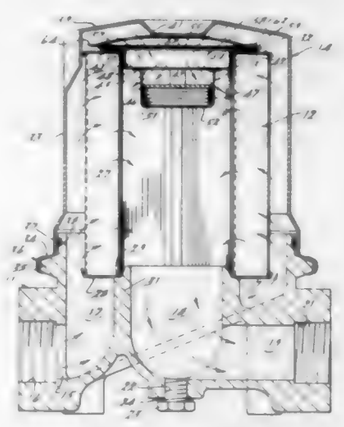
Automatic water softening apparatus which includes an outer tank for housing brine, said outer tank containing an inner tank for housing zeolites, a regeneration valve mounted on the zeolite tank, a brine valve assembly mounted within the brine tank, and associated conduits for effecting communication between the various tanks and valves. The brine valve assembly includes a columnar tube for shielding a float member from brine

pellets, and a poppet valve mounted on a common shaft with the float member for terminating flow of water from a first conduit leading into the brine tank when a predetermined level is reached in the brine tank. In addition, a poppet valve is loosely mounted on the common shaft for terminating flow from said brine tank into said first conduit leading to the zeolite tank when the level drops to a predetermined value. In addition, a handle



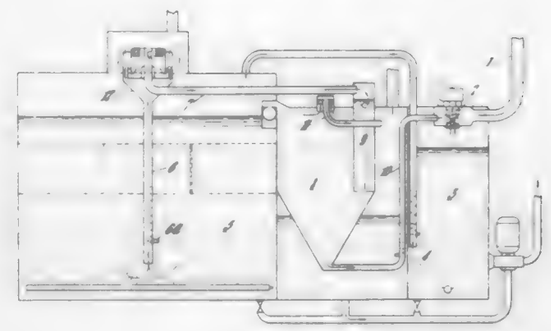
is mounted on the brine valve and is accessible from outside of the tank for varying the shut-off level of liquid in the brine tank. The regeneration valve includes a slide valve movable between a water softening and a regenerating position upon the actuation of a solenoid, and the regeneration valve includes associated conduits for effecting communication between: the brine tank and the zeolite tank; a hard water source and the zeolite tank; and the hard water source and the brine tank.

3,374,892
FILTER ASSEMBLY HAVING FILTERED BYPASS FLOW
Eugene J. Samaion, Racine, Wis., assignor to Walker Manufacturing Company, a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 521,020
4 Claims. (Cl. 210—132)



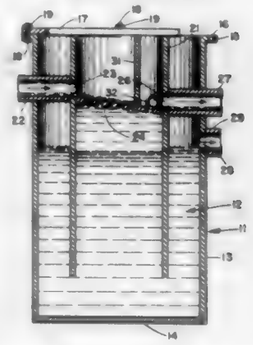
A filter assembly embodying a bypass valve assembly that incorporates a relatively coarse screen for removing large particles from the fluid when the main filter element is being bypassed. The bypass valve assembly is supported within one end of the central flow passage of an annular filter element and incorporates a leaf type spring for maintaining a seal between certain elements of the assembly.

3,374,893
SEWAGE PURIFICATION PLANT
Henry Jackson Stretton, Slough, England, assignor to G. D. Peters & Co. (Engineering) Limited, Slough, England, a British company
Filed May 23, 1967, Ser. No. 640,548
Claims priority, application Great Britain, Dec. 6, 1966, 54,607/66
4 Claims. (Cl. 210—195)



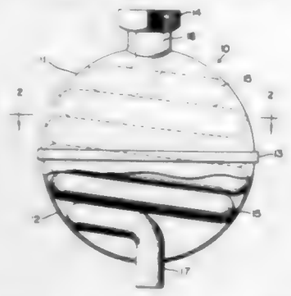
Means for transferring sewage at a substantially constant rate from one portion of an aerobic sewage treatment plant, e.g. the aeration tank, to another portion, e.g. the settlement hopper comprises an air lift pump feeding sewage from the first portion into a transfer box provided with a first weir leading back to the first portion and a lower, substantially shorter, second weir leading to the other portion, the second weir being formed in or attached to a float so as to respond to the level of sewage in the transfer box. The second weir may be a lip of a telescopically slidable upper end portion of an outlet pipe projecting into the transfer box. Flow to the second weir may be smoothed by a baffle dipping into the sewage in the transfer box. The bulk of the flow into the box returns over the first weir and the level in the box varies little, any variations being compensated by the float moving the second weir so that the height of said level above the second weir is substantially constant.

3,374,894
SEPARATING DEVICE FOR LIQUID FUEL AND WATER MIXTURES
John D. Webster, 5532 Janet Drive, Norfolk, Va. 23513
Filed July 12, 1966, Ser. No. 564,699
10 Claims. (Cl. 210—257)



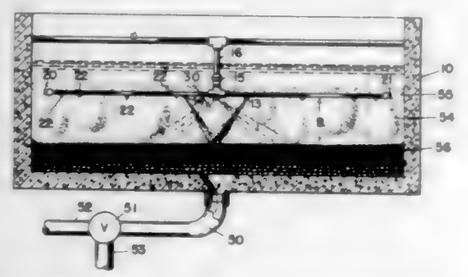
A device for separating liquid fuel and water consisting of a container in which the water level is maintained substantially constant by providing a water outlet in the side but below the fuel outlet. The mixture enters a central tubular member, flows across and through an inclined perforated baffle with the water settling to the lower section of the container while the fuel rises and is discharged at the upper fuel outlet.

3,374,895
WATER FILTER DEVICE
Zaharias Krongos, 328 W. 49th St., New York, N.Y. 10019
Filed July 18, 1967, Ser. No. 654,175
3 Claims. (Cl. 210—266)



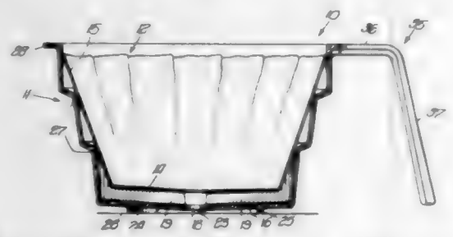
A filter adapted to be attached to faucets. The filter is comprised of a casing which contains a continuous length of coiled tubing therein. The tubing contains sequential zones of various filtering material.

3,374,896
FILTER BED AGITATOR
Charles E. Palmer and Robert H. Palmer, Fairview, Pa., assignors to Palmer Filter Equipment Company, Erie, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 553,936, May 31, 1966, which is a continuation-in-part of application Ser. No. 147,648, Oct. 25, 1961. This application Oct. 31, 1966, Ser. No. 590,816
1 Claim. (Cl. 210—272)



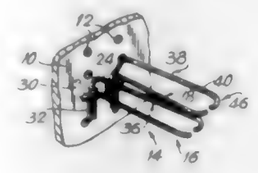
A self-propelled filter bed agitator comprising a horizontally rotatable arm supported at its center above the bed, nozzle means on opposite sides of the arm and the center to rotate the arm and agitate the bed and two nozzles on opposite sides of the center and directed downwardly inwardly to agitate the area of the bed directly below the center.

3,374,897
ONE-PIECE FUNNEL WITH INTEGRAL RIBS FOR HOLDING DISPOSABLE COFFEE CARRYING FILTER
John C. Martin, Springfield, Ill., assignor to Bunn-O-Matic Corporation, Springfield, Ill., a corporation of Delaware
Filed Feb. 1, 1966, Ser. No. 524,184
4 Claims. (Cl. 210—455)



A one-piece funnel for holding a disposable coffee carrying filter comprising an apertured sloping bottom and stepped frusto-conical sidewall. Ribs integral with the bottom and handle integral with the flanged upper end of the sidewall.

3,374,898
SAFETY-GUARDED PEGBOARD DISPLAY HANGER
Donald Karmin, 10 Hillcrest Drive, Glen Head, N.Y. 11545
Filed June 28, 1966, Ser. No. 561,174
7 Claims. (Cl. 211—59)

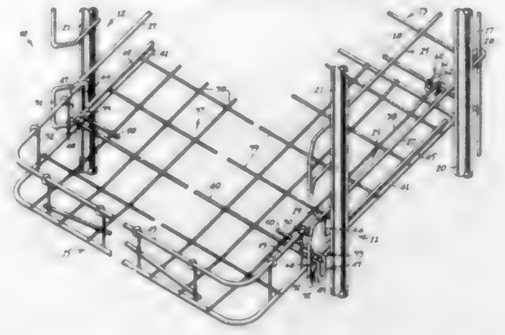


1. A guarded display hanger, said hanger including means detachably mounting the hanger on a perforated pegboard, an elongated shaft fixed on one end to said mounting means and projecting horizontally away from the pegboard, said shaft having an upwardly inclined blunt-ended tip at its forward portion, the shaft being adapted to have articles hung thereon, and a safety guard, said safety guard including means detachably mounting the guard on the pegboard in relative close proximity to the hanger, an elongated member fixed on one end to said mounting means and projecting horizontally away from the pegboard, said member having a blunt portion at its forward end, said blunt portion having at least a leading segment thereof located above and forward of the blunt end of the shaft of the display hanger and being closely adjacent but spaced above the same so as to permit packaged articles to be hung onto and removed from the shaft of the display hanger without interference, said blunt portion having a transverse dimension substantially greater than the transverse dimension of the shaft of the display hanger and being configured so as to present to the front a surface which is curved away from the front whereby a person falling against the hanger will be deflected by the safety guard from injurious contact with the tip of the display hanger.

3,374,899
TOWEL BAR WITH FOLDING RACK
Jesse A. Bator, 43 Mang Ave., Kenmore, N.Y. 14217
Filed May 13, 1966, Ser. No. 550,047
6 Claims. (Cl. 211—96)

The towel bar shown is unique in that one half-portion is equipped with a built-in small article utility rack. This rack is characterized by several projectable and retractable arms pivoted in a recess in a manner that these arms can be completely folded within the recess. When thus folded the entire rod is available for one or more towels. When the arms are projected they can be used in whatever manner desired while the other half-portion of the bar can be used without hindrance. Also, the arms are linked for simultaneous cooperation and the linking means is operable by a knob-equipped slide.

3,374,900
DISPLAY RACK TRAY SUPPORT
Clark B. Rollins, Jr., % Nashville Display Manufacturing Co., P.O. Box 491, 1415 Elm Hill Road, Nashville, Tenn. 37210
Filed Oct. 3, 1966, Ser. No. 583,558
8 Claims. (Cl. 211—133)

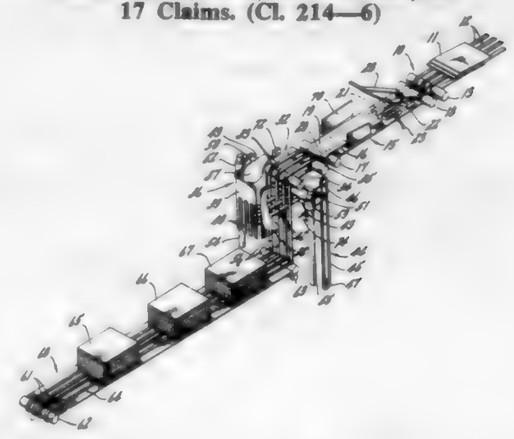


1. A tray support for a display rack comprising:
(a) an upright side support frame having an inside and an outside, and a front and rear,
(b) a tray having a side frame, said tray being adapted to be received within said rack with said side frame adjacent the inside of said side support frame,
(c) said side support frame comprising a forwardly projecting hanger rod,
(d) a wing member diverging outwardly from the front of said hanger rod,
(e) a hanger member projecting outwardly from said side frame and terminating in a depending tongue,
(f) said tongue being spaced outwardly from said side frame sufficiently that said hanger member extends across said hanger rod and said tongue depends adjacent the outside of said hanger rod when said tray is received in said rack,
(g) said wing member limiting the forward movement of said tongue.

3,374,901
LIVE BOOM SUPPORTING LIVE BOOM OR HOIST TRACK
Ray Ferwerda, 1050 NW. 163rd Drive, North Miami, Fla. 33169
Continuation-in-part of applications Ser. No. 362,331, Apr. 24, 1964, and Ser. No. 453,651, May 6, 1965. This application Apr. 18, 1966, Ser. No. 543,277
9 Claims. (Cl. 212—55)

In a backhoe having a main boom with power means for slewing it about a vertical pivot mounting on a carrying vehicle, and having a first hydraulic jack mounted between said vertical pivot mounting and the end of the main boom for oscillating the latter about a first horizontal pivot on said vertical pivot mounting, and having a second hydraulic jack pivotally mounted near the vehicle end of the main boom and adapted to have its outer end pivotally connected to a dipper stick of a backhoe bucket; means is provided, after the dipper stick is disassembled, to mount the lower end of an auxiliary boom on a second horizontal pivot intermediate the ends of the main boom, and for then pivotally connecting the outer end of the second jack to a point on the auxiliary boom spaced from said second horizontal pivot. The parts are so arranged that one operator may so convert the backhoe for use of the lifting boom. In one modification the lifting boom may support a rigid vertical hoist assembly which may be folded compactly for vehicle travel.

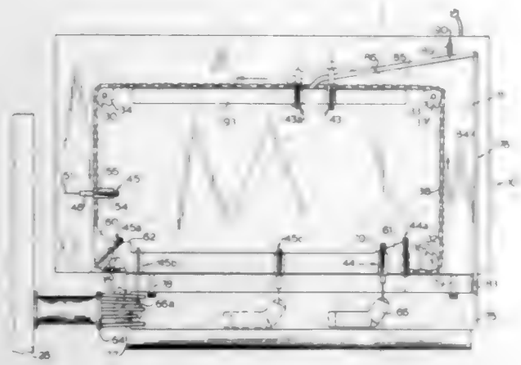
3,374,902
METHOD AND APPARATUS FOR JOGGING AND STACKING SIGNATURES
Harvey E. Mills, Kokomo, Ind., assignor to The Cuneo Press, Inc., Chicago, Ill., a corporation of Illinois
Filed July 20, 1964, Ser. No. 383,765
17 Claims. (Cl. 214—6)



9. Mechanism for converting a continuous stream of signatures into a stacked pile, such mechanism including, in combination:
means for shingling a continuous stream of signatures, said shingling means comprising a moving surface upon which lay the signatures, said moving surface having a rate of speed greater than the rate of speed of the stream of preshingled signatures, and
vacuum means arranged to cause each signature in the stream to be urged against the moving surface to thereby facilitate separation of each signature in contact with the vacuum means from the immediately succeeding signature in the stream, and to prevent slippage between each signature and that portion of the moving surface with which it is in contact,
means for collecting the shingled signatures in a stack,
means, responsive to the collection of a predetermined amount of signatures, for terminating operation of the shingling means,
means for moving the collected stack to a removal zone, and
means for reinstituting operation of the shingling means upon movement of the stack of signatures to the removal zone.

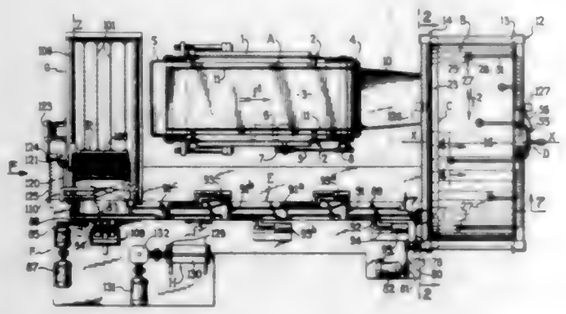
3,374,903
HOSIERY STACKING APPARATUS
Clarence J. Glover, Denton, N.C., assignor to Surratt Hosiery Mill, Inc., Denton, N.C., a corporation of North Carolina
Filed Feb. 21, 1966, Ser. No. 528,912
6 Claims. (Cl. 214—6)
An automatic hosiery transfer and stacking device includes a series of chain-mounted retractable needles

adapted to engage successive hose in the delivery station



fingers of a hosiery everting machine, pull the hose to its full length and then release the hose for stacking.

3,374,904
MACHINE FOR ARRANGING LETTERS AND THE LIKE INTO ROWS
Marcel François, Chatenay-Malabry, France, assignor to Hotchkiss-Brandt, Paris, France, a corporation of France
Filed Mar. 23, 1965, Ser. No. 442,145
Claims priority, application France, Mar. 24, 1964, 968,435
12 Claims. (Cl. 214—7)

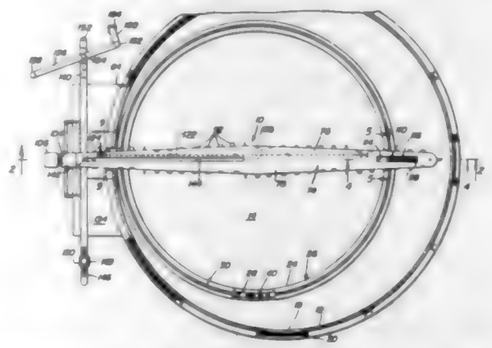


A machine for arranging letters in stacks comprising in combination: means for feeding a heap of letters, arranged haphazardly, to the lower end of a substantially cylindrical inner face of a drum having suckers for seizing the letters from the underside of said heap and releasing the seized letters at the top of the drum into letter receiving and aligning means which feed the aligned letters to a stacking magazine.

3,374,905
METHOD AND APPARATUS FOR TRANSPORTING RECEPTACLES
Harri David, Hamburg-Lohbrugge, Otto Erdmann, Hamburg-Bergedorf, Claus Jahnig, Hamburg, and Willy Rudszinat, Dassendorf, near Hamburg, Germany, assignors to Hauni-Werke Korber & Co., KG., Hamburg-Bergedorf, Germany
Filed Oct. 22, 1965, Ser. No. 500,988
Claims priority, application Great Britain, Oct. 22, 1964, 43,111/64
21 Claims. (Cl. 214—16)

Cigarettes produced by a first battery of machines are loaded into trays which are circulated by an endless feed conveyor extending along a second battery of machines which convert filled trays into empty trays. Surplus trays (including filled and empty trays) are circulated by the feed conveyor and by a second endless conveyor. Rows of empty and filled trays are accumulated in magazines disposed between the two conveyors and two sets of storing conveyors are provided, one for each magazine, to transfer empty and filled trays unidirectionally through the respective magazines from one of the conveyors to the other conveyor and to transfer empty and filled trays from the other conveyor to the one conveyor.

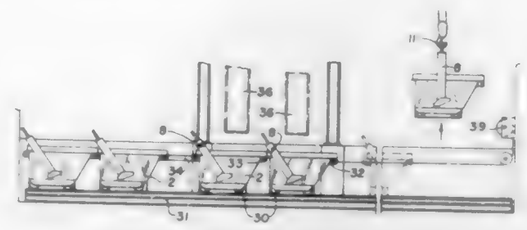
3,374,906
BOTTOM TYPE SILO UNLOADER
Harold M. Zimmerman, R.D. 1, Ephrata, Pa. 17522
Filed Jan. 6, 1966, Ser. No. 519,129
16 Claims. (Cl. 214—17)



A silo unloader for removing silage from the interior of a silo through an opening in a wall portion of the silo. The unloader includes the combination of an elongated conveyor, a drive mechanism for the conveyor, and means for moving one end portion of the conveyor horizontally orbitally with respect to the interior of the silo and for moving the conveyor horizontally reciprocally with respect to the opening in the wall portion of the silo. The conveyor cuts and conveys silage through the opening as it sweeps across at least a portion of the silo interior.

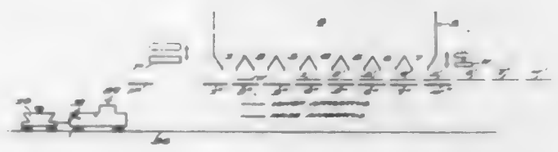
3,374,907
DUMP BUCKET
James M. Phillips, Bridgeville, and Alfred D. Parke, Jr., Pittsburgh, Pa., assignors to Phillips Mine & Mill Supply Co., Carnegie, Pa., a corporation of Pennsylvania
Filed July 5, 1966, Ser. No. 565,646
7 Claims. (Cl. 214—41)

This application discloses a so-called automatic dump bucket wherein the bucket and lifting bail for the bucket are so interconnected that when the bail is suspended from a crane hook the bucket is locked in a level position, but when the bucket is set on the ground, the bail is free to swing in an arc toward the rear of the bucket only through a limited arc to an inclined position where the bail is substantially clear of the top of the bucket, but does not extend substantially beyond the rear end of the bucket. However the arrangement is such that when the bail is lifted at an angle relative to the bucket, the bucket is then free to swing through an arc of 90° for discharging the



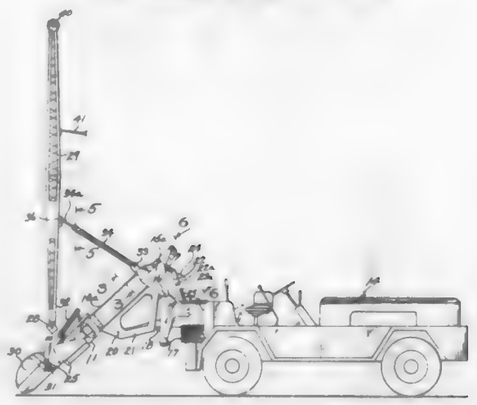
contents of the bucket. Additionally, buckets so provided are provided with wheels so that they may be close-coupled and run in succession on tracks under a discharge chute, and the bail at the inclined angle does not interfere with this close coupling, nor with the discharge of material into the open tops of the buckets.

3,374,908
SYSTEM FOR LOADING TRAIN OF CARS WITH SOLID FLUENT MATERIAL
Paul F. Giesking, Seven Islands, Quebec, Canada, assignor to Pickands Mather & Co., Cleveland, Ohio, a corporation of Delaware
Original application May 24, 1963, Ser. No. 283,041, now Patent No. 3,251,487, dated May 17, 1966. Divided and this application Oct. 23, 1965, Ser. No. 503,923
5 Claims. (Cl. 214—42)



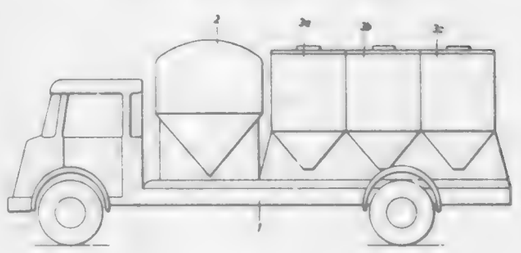
A vehicle including a receptacle spring-mounted on a wheeled truck, said receptacle having a top opening in the form of a hatch normally closed by a hatch cover, is loaded at a loading station with solid fluent material derived from a storage container for the fluent material located at said loading station as follows: The storage container is provided with at least one outlet and with means including a cam follower-controlled means for effecting discharge of fluent solids from said storage container through said outlet. The hatch cover of the vehicle receptacle is movable between a generally horizontal closed position and an upright open position, and is provided with a longitudinally extending cam track facing upwardly when the hatch cover is in its open position. Means is provided for arranging the vehicle for movement along a path of travel as will carry the hatch of the vehicle's receptacle under said container outlet, and at the approach side of said loading station there is provided means for opening of said hatch cover, said cam track then being engageable with the aforesaid cam follower means, when the vehicle reaches the loading station, to effect discharge of fluent material into said hatch while the vehicle is moving. The cam track becomes disengaged from the cam follower means by the lowering of the receptacle on the vehicle's springs, thereby terminating discharge of fluent material when a predetermined weight of the material has been loaded into said receptacle. The hatch cover is reclosed by means located at the departure side from the loading station.

3,374,909
COACTING BOOM STRUCTURE
Ray Ferwerda 1050 NW. 163rd Drive, North Miami, Fla. 33169
Filed Apr. 24, 1964, Ser. No. 362,331
12 Claims. (Cl. 214—671)



1. Coacting boom structures comprising a telescoping boom having a fixed boom section and a movable boom section slidably mounted in said fixed section for movement longitudinally retracted into and extended out of said fixed section, means for retracting and extending said boom, a rigid boom having an end pivot connection and an intermediate pivot connection intermediate the ends of said rigid boom and spaced a predetermined distance from said end pivot connection, a rigid strut shorter than said telescoping boom extended and having end pivot connections at its opposite ends, a pivot mounting fixed relative to said fixed boom section, a pivot mounting on said movable boom section, one end pivot connection of said strut adapted to pivotally coact with said rigid boom intermediate pivot connection, and said rigid boom end pivot connection and the other of said strut end pivot connection being interchangeably connectable to either of said pivot mountings, whereby, with said rigid boom end pivot connection pivotally connected to either one of said pivot mountings and the other of said strut end pivot connections pivotally connected to the other of said pivot mountings, retraction and extension of said telescoping boom will cause oscillation of said rigid boom about its end pivot connection.

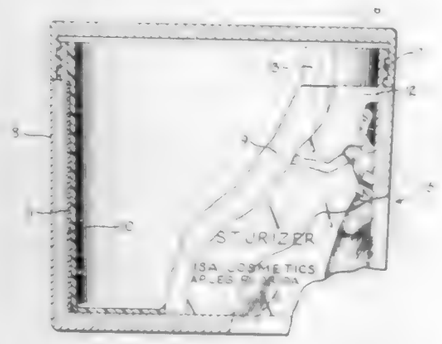
3,374,910
RECEPTACLE VEHICLE FOR BULK MATERIAL
Wilhelm Hermanns, Frankfurter Strasse 462, Porz-Urbach, Germany
Filed Aug. 10, 1965, Ser. No. 478,772
Claims priority, application Germany, Aug. 25, 1964, H 53,630
3 Claims. (Cl. 214—83.28)



A receptacle vehicle for dispensing bulk material including a pressure tank type change-over receptacle, a plurality of bulk material storage cells. A compressor in communication with the change-over receptacle is operable to supply compressed air to the receptacle to discharge bulk material therefrom and is further operable

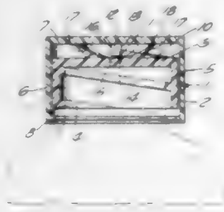
to apply a vacuum to the receptacle to draw material from a pre-selected one of the storage cells into the change-over receptacle.

3,374,911
PLASTIC COSMETIC JAR
Robert V. White, 1041 E. Knapp St., Milwaukee, Wis. 53202
Filed May 15, 1967, Ser. No. 638,245
2 Claims. (Cl. 215—8)



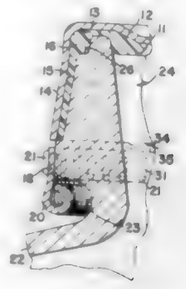
A plastic jar for cosmetic creams has a liner of plastic that is impervious to such creams inside an outer shell of clear transparent plastic, with a paper band encircling the liner and tightly confined between the contiguous surfaces of the side walls of the shell and liner, the band having decorative indicia thereon which is visible through and protected by the clear transparent side wall of the outer shell.

3,374,912
SAFETY BOTTLE TOP
Evert D. Velt, 6182 Roy St., Los Angeles, Calif. 90042
Filed July 18, 1966, Ser. No. 566,074
5 Claims. (Cl. 215—9)



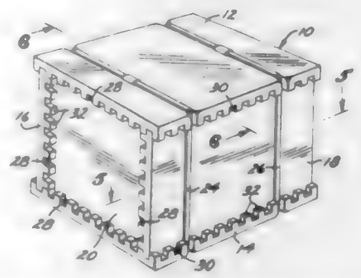
A safety bottle top comprises an inner member having an end wall and a cylindrical side wall engaging the thread of a bottle, which inner member is enclosed by on outer member having an end wall and a cylindrical side wall, the two members being rotatable relative to each other and axially movable relative to each other with spring means normally holding the two walls apart. One of the two end walls has a lug in a given radial zone projecting towards the other end wall and the other end wall has a ramp in said radial zone which merges at one end with the end wall and terminates at the other end in an abutment facing in a left hand direction. Said other end wall further has a recess in said radial zone forming a second abutment facing in the right hand direction, whereby the lug means on said one end wall may engage said first abutment when the axial spacing of the two end walls is reduced to a given degree in opposition to the spring means and whereby the lug means may enter said recess to engage said second abutment when the lug means registers with said recess and the axial spacing of the two end walls is reduced to greater than said given degree in opposition to said spring means.

3,374,913
TAMPER-PROOF PACKAGE
Donald H. Zipper, Western Springs, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 8, 1965, Ser. No. 494,082
5 Claims. (Cl. 215—39)



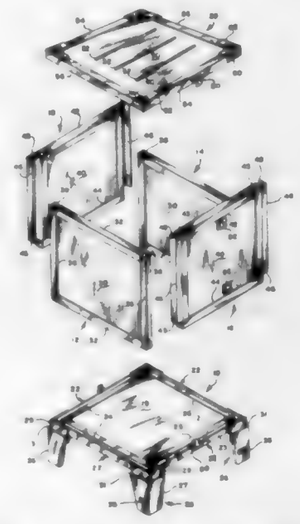
1. A tamper-proof package comprising a container having a sealing finish, said sealing finish having a plurality of cam surfaces thereon, an outwardly facing smooth circumferential portion disposed below said cam surfaces, a cylindrical portion disposed below said circumferential portion, a plurality of spaced lug means on said cylindrical portion, each of said lug means projecting radially outward from said cylindrical portion, a closure cap received over said sealing finish, said closure cap having a tap panel covering the top of said sealing finish and a depending skirt at the marginal edges of said top panel, said skirt being spaced from said sealing finish and a deformable gasket substantially filling the space between said skirt and said circumferential portion, said gasket extending into engagement to form a cam surface for co-operation with said cam surfaces on said finish, a tamper-proof band frangibly joined through spaced bridging portions to a lower portion of said skirt, said tamper-proof band having a series of spaced recesses therein with closed upper and lower ends for receiving said lug means on said cylindrical portion thereby to prevent rotation of said band, whereby rotation of said closure cap to effect removal from said package will serve to fracture said bridging portions thereby indicating that said package has been opened, the vertical length of said spaced recesses substantially exceeding the vertical length of said lug means so as to permit said tamper-proof band to drop down when it has become separated from said skirt.

3,374,914
SHIPPING CONTAINER AND STRUCTURAL MATERIAL THEREFOR
William D. Adam, Newport Beach, Calif., assignor to W. D. Adam Company, Inc., Costa Mesa, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 503,270
2 Claims. (Cl. 220—4)



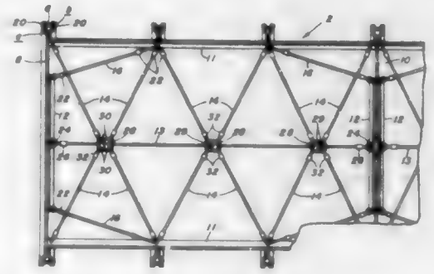
A knock-down shipping container made of sections of material provided with a uniform pattern of intersecting channels, the edges and channels of the sections being interfitted and held together to define an internal shipping space.

3,374,915
COLLAPSIBLE AND STACKABLE CONTAINER
Donald Verhein, 2116 N. Peninsula Road, and Gene D. Verhein, 150 Main St., both of Waukesha, Wis. 53186
Filed July 21, 1966, Ser. No. 566,812
6 Claims. (Cl. 220—4)



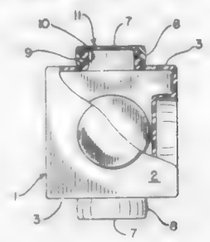
A knock-down or collapsible type container that has the side and end walls seated in a groove around the edge of a base. The end walls engage the side walls on assembly and are connected to the base to form an opened top container. A top is placed on the side and end walls in mating engagement with the top edge of the side and end walls to close the container. The base is formed to provide a storage space for the side and end walls and the top is used to hold the walls in place on the base.

3,374,916
LIQUID STORAGE TANK
Louis M. Herff, Penn Hills Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,685
6 Claims. (Cl. 220—5)



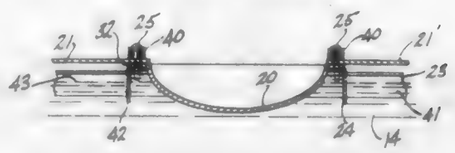
1. A tank for storing liquids comprising
an elongated metal shell,
end plates secured to the ends of said metal shell,
a primary cable secured to said end plates and extending lengthwise through said tank,
a plurality of secondary cables connected between the inner walls of said shell and said primary cable, a group of at least two of said secondary cables connected to said primary cable at a common node, and each oriented at an acute angle to said primary cable,
and baffle elements connected across alternating spaces between said secondary cables of said group to inhibit the lengthwise flow of liquid in said tank.

3,374,917
INTERLOCKING STRUCTURAL ELEMENTS
Constantine T. Troy, 1330 Cleveland Ave., Wyomissing, Pa. 19610
Filed Jan. 9, 1964, Ser. No. 336,670
4 Claims. (Cl. 220—23.4)



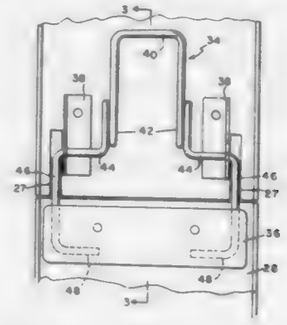
1. A closed hollow container adapted to store and dispense various materials comprising:
a cube bearing a male member on both of its end faces and a female member on each of its four side faces;
the male and female members being adapted to register in locking frictional engagement with each other and being spaced on the periphery of the cube in a manner such that planes drawn tangent to the entrance of each of the female members and tangent to the trailing portions of each of the male members will lie on the surfaces of the cube;
whereby the container may be secured in mating relationship with another similar container in any of the three planes parallel to the principal axes of the container.

3,374,918
FLOATING DECK FOR STORAGE TANK
Lou C. Creith, Allentown, Pa., assignor to Olin Mathieson Chemical Corporation, a corporation of Viriginia
Filed Jan. 25, 1966, Ser. No. 522,900
4 Claims. (Cl. 220—26)



A floating deck for use in liquid storage tanks is provided in which a plurality of individually buoyant pans to keep the deck afloat. In areas of the deck not occupied by said pans, sheets of metal are provided to avoid vaporization.

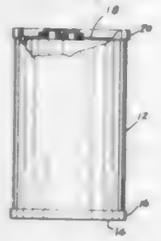
3,374,919
SPRING HINGE SUPPORTING MEANS FOR POWER HOUSING
Hendrik A. J. de Vos, Wenham, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 23, 1966, Ser. No. 559,863
7 Claims. (Cl. 220—35)



An arrangement for supporting a power housing from the arm of a luminaire in which a spring hinge secured

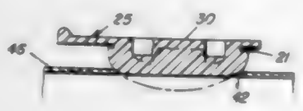
at one end thereof to the power housing is rotatably supported intermediate its ends in hinge hooks mounted on said arm.

3,374,920
CONTAINER WITH EASILY OPENED SEGMENT
Walter M. Perry, 76 Locust Hill Road, Darien, Conn. 06820
Filed Dec. 1, 1965, Ser. No. 510,742
14 Claims. (Cl. 220—54)



A can, typically for a beverage, has an end, usually aluminum, with an openable segment defined by score lines, and a lift tab disposed transversely of the segment. The tab may be widened and fastened to the segment by two spaced rivets preferably integral with the segment. One rivet is tight, and the other preferably has clearance to permit partial raising of the lift tab before taking effect, in order not to interfere with initial rupture of the segment at the first fastening means when starting to open the can. The score line grooves are formed in the top surface of the can end near the lift tab, and are formed in the bottom surface at parts of the segment remote from the lift tab. A single rivet may be used, preferably triangular, with its apex directed toward the transverse lift tab. These improvements reduce the force needed to open the container.

3,374,921
PUSHBUTTON CAN CLOSURE
Theron R. Kelley, Mattapoisett, Mass., assignor to Tedan, Inc., West Hanover, Mass., a corporation of Massachusetts
Filed Aug. 16, 1966, Ser. No. 572,831
4 Claims. (Cl. 220—60)



1. A removable-replaceable elastomer closure for a symmetrical opening in a plate of predetermined thickness, including

(a) a plug portion substantially the segment of a sphere having top and bottom faces, the outer circumferential wall of the plug curving downwardly and inwardly from the top to the bottom face,

(b) a circumferential collar of substantially rectangular cross-section area extending upwardly from the top face of the plug portion, the outer diameter of the collar being longer than the plate opening diameter,

(c) a circumferential, substantially rectangular groove with its open end facing outwardly provided in the collar,

(d) the groove being in a plane parallel to and spaced above the top face of the plug,

(e) the inner diameter of the groove being longer than the diameter of the plate opening, and the thickness of the groove being less than the thickness of the plate,

(f) a flange extending radially outward from the collar above the groove, the lower face of the flange lying in the same plane as the upper face of the groove,

(g) a pull tab extending radially outward from the flange,

(h) a pushbutton extending upwardly from the plug and positioned substantially centrally of the plug, the outer wall of the pushbutton and inner wall of the collar defining a trough therebetween,

(i) whereby the plug material below the trough constitutes a readily flexible web transmitting pressure exerted on the pushbutton axially of the closure to elongate it and reduce its circumference to pass through the plate opening.

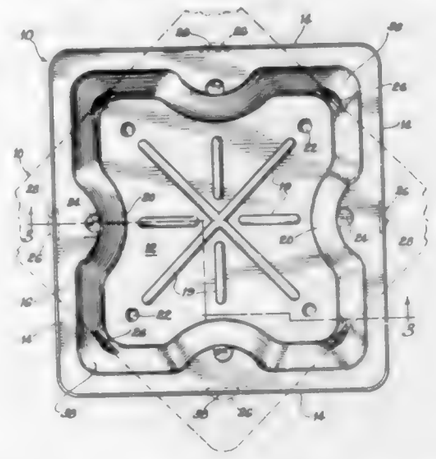
3,374,922
FOAMED CONTAINERS
Richard K. Shelby, Downers Grove, Ill., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 392,186
11 Claims. (Cl. 220—97)

1. A one-piece plastic container having a base, a side wall with substantially parallel opposed, inside and outside surfaces, a portion of said side wall composed throughout of a single layer of thermoplastic material which comprises a foamed polymer portion extending from within the body of said thermoplastic material and forming said outside surface, and a non-foamed polymer portion integral with said foamed polymer portion and forming said inside surface, said foamed polymer portion extending outwardly beyond the remainder of said wall, and nesting means for maintaining said foamed polymer portion of said side wall out of contact with the inside surface of the side wall of a like container when one container is supported within another of said like containers.

3,374,923
BUS BOX CONSTRUCTION
Ralph Ettlinger, Jr., Highland Park, Ill., and John M. Welch and William Le Roy Watkins, Columbia, Mo., assignors to Raburn Products, Inc., Wheeling, Ill., a corporation of Illinois
Filed Aug. 18, 1966, Ser. No. 573,229
5 Claims. (Cl. 220—97)

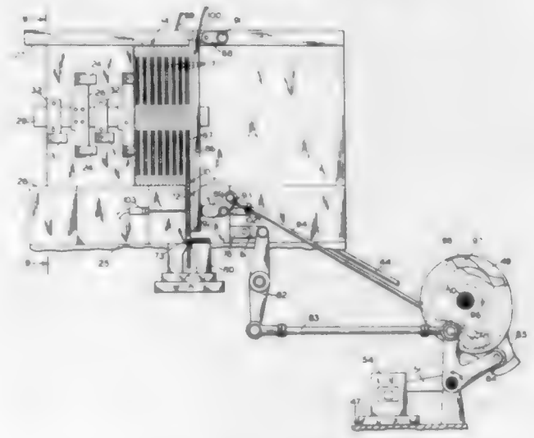
A bus box construction for restaurants comprising a tray having bottom and side walls with a flat upper rim portion. The upper rim portion is provided for supporting dish racks whereby material from dishes placed on the racks will pass through the racks and be collected in the bus box. Notches are provided at the corners of the bus box, and beaded portions are formed in the bottom wall adjacent the corners to provide interlocking means whereby the bus box can be associated with a separate box

located at a 45° angle thereto. The notches engage the upper rim of the separate box, and the beaded portions



are received by depressions defined in the rim portion of the separate box.

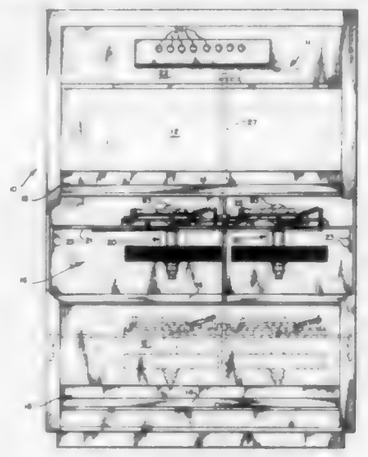
3,374,924
APPARATUS FOR JOGGING AND DISPENSING ARTICLES FROM A RACK
Charles R. Fegley, Laureldale, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 23, 1966, Ser. No. 574,357
12 Claims. (Cl. 221—11)



A rack containing rows of articles is successively advanced to present each row to a chute having an escapement device which dispenses the articles individually onto an exit trackway. Each dispensed article drops through the chute and is rotated to fall onto the trackway in an oriented position. A cyclically operated sensing brush jogs the articles and senses any jammed articles to insure that all the articles are dispensed from a row before another row of articles is presented to the chute.

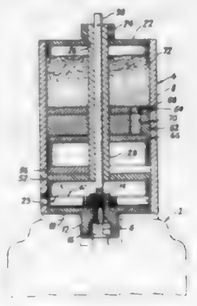
3,374,925
AUTOMATIC RECORD DISPENSER
Arnold E. Ristau and Alfred G. Ristau, Kaukana, Wis., assignors to Melodie Vendor Corporation, Appleton, Wis.
Continuation-in-part of application Ser. No. 451,581, Apr. 28, 1965. This application Dec. 1, 1966, Ser. No. 598,445
3 Claims. (Cl. 221—129)

A record dispensing apparatus having a reciprocally movable bar carrying a number of selectively actuated lever type hook arms for engaging one of a number of dispensing devices positioned in close proximity to the bar. Each dispensing device having a crank arm which is engaged by the lever means to simultaneously release a record while moving a holding means into position to



prevent the fall of more than one record. On release of the actuating bar the lever means will return to its original position dropping the next record into position to be dispensed.

3,374,926
METHOD AND APPARATUS FOR HEATING AQUEOUS MEDIA
Robert M. Friedenberg, Baltimore, Md. (7319 Laurel-Bowie Road, Apt. 204, Laurel, Md. 20810), and John Medige, 106 Wingate Ave., Buffalo, N.Y. 14216
Filed Feb. 21, 1966, Ser. No. 528,994
12 Claims. (Cl. 222—1)

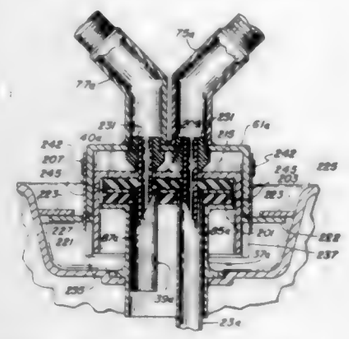


There is disclosed a dispenser for dispensing a heated aqueous medium having a casing assembly which provides a reservoir, a discharge outlet, a storage chamber, and a reactant chamber adjacent the discharge outlet. A thermogenic agent is within the storage chamber and an aqueous medium is within the reservoir. The dispenser includes means for segregating a limited volume of thermogenic agent from the storage chamber and passing it into the reactant chamber and for sealing the storage chamber from the reactant chamber. Means for discharging the aqueous medium from the reservoir includes a valve actuatable by pressure applied externally of the casing assembly and a conduit member open at a point spaced from the discharge outlet so that the discharging means and casing assembly direct a portion of the aqueous medium from the reservoir into contact with the limited volume of agent for thermogenic reaction therebetween and elevate the temperature of the reacted portion of the aqueous medium. This heated portion of the aqueous medium is then directed to the discharge outlet of the casing assembly and reacted medium is admixed with unreacted medium to provide a heated admixture of aqueous medium which is then dispensed from the dispenser through the discharge outlet.

3,374,927
TAPPING ARRANGEMENT FOR CONTAINERS

Philip H. Schmidt, Olympia, Wash., assignor to Olympia Brewing Company, Olympia, Wash., a corporation of Washington

Continuation-in-part of application Ser. No. 444,671, Apr. 1, 1965, which is a continuation-in-part of application Ser. No. 554,245, May 2, 1966. This application May 19, 1967, Ser. No. 639,809
17 Claims. (Cl. 222—82)

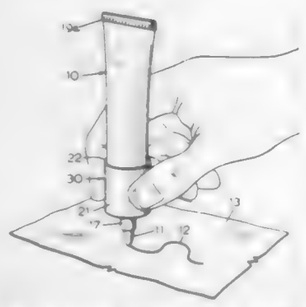


A cask tapping arrangement including a tap rod unit for the cask wherein the tap rod unit has a replaceable puncturable disc which seals the upper ends of parallel, offset, liquid outlet and gas inlet passageways, and wherein a tapper unit mounts on the tap rod unit and has puncture tubes for puncturing said disc in register with said passageways.

3,374,928
PROTECTIVE COLLAR FOR SQUEEZABLE TUBES

Reginald Harrie Alfred Hope, 7 W. Dean Valley Road, Islington, Ontario, Canada

Filed June 7, 1966, Ser. No. 555,792
16 Claims. (Cl. 222—105)

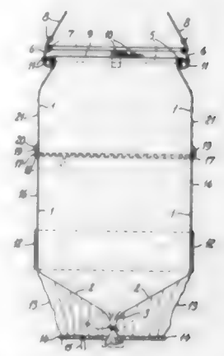


1. A collar for a tube having an annular dispensing end with an outer circular periphery of fixed diameter and a tubular wall extending from said periphery to a flattened end of the tube, the tubular wall being capable of being squeezed manually to dispense the contents of the tube through said dispensing end, the collar comprising a generally cylindrical body that is relatively undeformable as compared to said tubular wall and that has an open end whereby the collar is slidable over said periphery and tubular wall to encompass a portion of the tubular wall within the collar, the body having an internal surface that clears said periphery and tubular wall save for circumferentially spaced apart lands raised on said internal surface adjacent at least the other end of the body which lands are snugly engageable frictionally with said periphery of the dispensing end to resist displacement of the collar relative to the tube whereby the collar can then be gripped manually to press the dispensing end of the tube against a surface on which the contents of the tube are to be dispensed without forcing the collar longitudinally off the tube, the collar being sufficiently stiff to protect the portion of the tubular wall that is encompassed by the collar and prevent substantial squeezing thereof.

3,374,929
BULK CONTAINERS

Lennart Silfverskiö'd, Strandvagen 61, Stockholm, Sweden

Filed Sept. 23, 1966, Ser. No. 581,560
5 Claims. (Cl. 222—105)

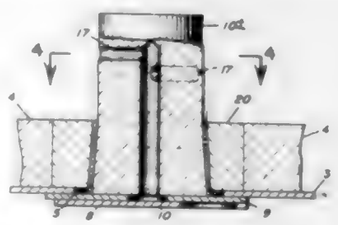


1. In a bulk container the combination of an elongated tubular fabric container body, a funnel shaped flexible container bottom extending from the lower end of the contained body, having a closable lower end opening and being foldable into a substantially flat position, when the container is empty, a band encircling and secured to the lower end of the body, having its lower edge adjacent the jointure of the body and the funnel shaped container bottom and being sufficiently rigid to retain the tubular container body expanded substantially to its full circumference, and an additional bottom closure for the encircling band comprising a fabric skirt exterior of the container bottom and having its upper edge secured to the lower edge of the band and extending downwardly therefrom with its lower edge free, the skirt having a length approximating the radius of the band and securing means associated with the free edge of the skirt for releasably securing the skirt in substantially flat position under the container bottom, when the latter is in a folded in, substantially flat position.

3,374,930
DISCHARGE BRICK FOR CASTING LADLES, INTERMEDIATE CONTAINERS AND THE LIKE

Horst Hase, Wiesbaden, and Hans-Joachim Winkler, Krefeld-Urdingen, Germany, assignors to Stoecker & Kunz GmbH, Krefeld-Linn-Rheinhafen, Germany

Filed Dec. 3, 1965, Ser. No. 511,497
Claims priority, application Germany, Dec. 5, 1964, St 23,040
7 Claims. (Cl. 222—566)

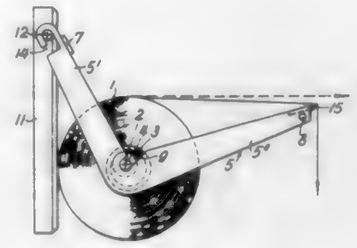


A discharge spout brick for a pouring container of casting ladles and the like wherein the body of such brick is fixed in stationary position at the bottom of the container. The body has a substantially vertical passage therein closed at the top and connecting the interior of the pouring container with the passage are a plurality of substantially horizontal inlet conduits staggered vertically. These conduits extend from the passage to the interior of the container and may be distributed equally or irregularly around the passage. They also may have a cross-section of geometrical form and the outlet of the passage is closed by a slide shutter.

3,374,931
TEAR-OFF DEVICE FOR ROTATABLY MOUNTED PAPER ROLLS PARTICULARLY TOILET PAPER ROLLS

Anton Abraham, Perchtoldsdorf, Lower Austria, Austria, assignor to Wiener Kammfabrik Anton, Abraham Komm. Ges., Wiener Neudorf, Lower Austria, Austria, a corporation of Austria

Filed Jan. 27, 1966, Ser. No. 523,386
Claims priority, application Austria, Jan. 27, 1965, A 700/65
3 Claims. (Cl. 225—79)

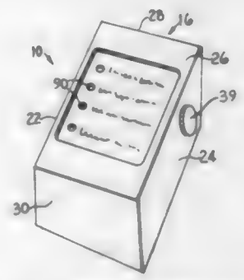


A tear-off device for rotatably mounted paper rolls, particularly toilet paper rolls, wherein, due to the pressure exerted upon a separation knife disposed at one end of a lever, said paper roll is pressed towards a wall plate and prevented from rotation thereby, which comprises a mandrel adapted to support rotatably a paper roll, and two levers bent for about a right angle at substantially the center thereof and disposed parallel relative to and spaced apart from each other at a distance corresponding with the length of the paper roll. At least one cross-member is provided which connects the levers to form a pair of levers. A carrying plate is adapted to be secured to a wall, and the pair of levers is swingably mounted on the carrying plate at the free end of one of the levers to swing about a common axis, and the free end of the other of the levers is disposed in a horizontal plane, higher than a horizontal plane extending through the rotary axis of the paper roll, so that upon pulling downwardly the end of the paper roll the latter is pressed towards the carrying plate and prevented from further rotation. A separating knife is carried by the free end of the other of the levers, and the mandrel is rotatably mounted in the levers at least near to the bent portion of the latter.

3,374,932
INFORMATION HANDLING AND STORING APPARATUS

Robert E. Spinner, 26 Deer Trail Road, North Caldwell, N.J. 07006, and David F. Wolfe, 173 Riverside Drive, New York, N.Y. 10024

Filed Feb. 23, 1966, Ser. No. 529,482
6 Claims. (Cl. 225—93)

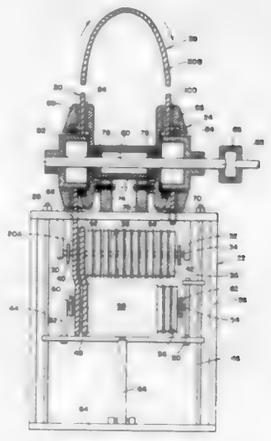


The disclosure is of information-handling apparatus comprising a housing which includes a pair of reels, one a supply reel and one a takeup reel, between which a master information roll is supported. The master information roll includes columns of apertures, each aperture being associated with a unit of information, with the columns offset laterally and longitudinally from each other along the roll. An information-receiving member positioned beneath the roll is used to enter information from each column of apertures in the roll.

3,374,933
LOOP ERECTION SYSTEM

Niels O. Young, Lincoln, Mass., assignor to Block Engineering, Inc., Cambridge, Mass., a corporation of Delaware

Filed Aug. 15, 1966, Ser. No. 572,557
11 Claims. (Cl. 226—118)



1. An erection device comprising, in combination,
an elongated flexible element forming a closed loop;
guide means providing a constraining path for a portion of said loop so that said element is movable substantially along its longitudinal axis in said path at said guide means;
means for holding a variable proportion of said element in ordered storage, the remainder of the loop not in said guide means or in storage being unconstrained, and
means for providing a thrust to said element along said path to impart speed to said element sufficient to cause said unconstrained remainder of said loop to erect into a substantially rigid structure.

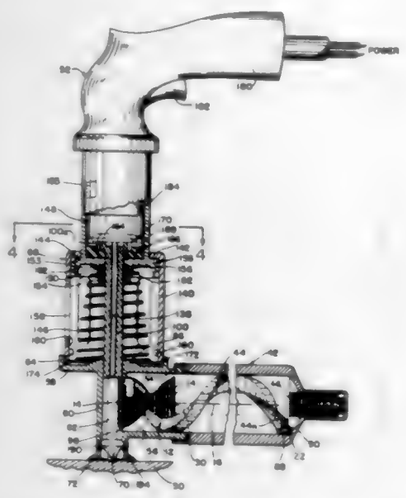
3,374,934
NAIL DRIVING APPARATUS

Robert B. Dickson, Evanston, Ill., assignor to Dickson Weatherproof Nail Company, Evanston, Ill., a corporation of Delaware

Original application Nov. 5, 1963, Ser. No. 321,450, now Patent No. 3,212,622, dated Oct. 19, 1965. Divided and this application Aug. 19, 1965, Ser. No. 481,003
13 Claims. (Cl. 227—130)

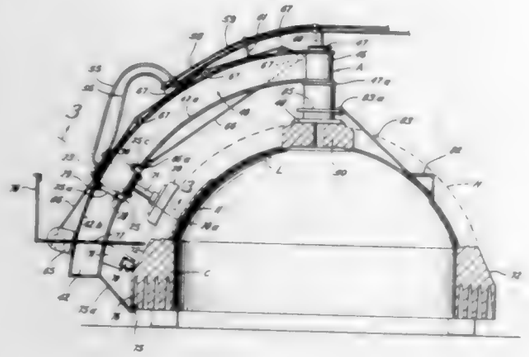
A nail driving tool in which nails are fed thereto along a helical path with their heads contacting each other and defining a cylindrical surface of revolution with their shanks also contacting each other at the axis thereof. The lead nail is helically guided into a poised position with its head partially intruding in a bore in which a piston is reciprocated manually to discharge the nail into the bore and a power driven hammer advances the nail with repeated blows on the piston step by step as the handle is moved towards a work piece keeping the piston in contact with the nail. The piston includes a nail set stem therein which is reciprocated with respect thereto by rela-

tive rotation induced by movement of the handle. The leading nail can be retracted from its poised position for



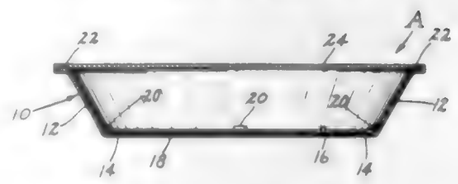
tool storage to clear the piston in its fully advanced position in which it is locked when not in use.

3,374,935
APPARATUS FOR USE IN MANUFACTURING LAMINATED HEADS OR CLOSURES
Raymond E. Pechacek, Houston, Tex., assignor to Hahn & Clay, a corporation of Texas
Filed Mar. 28, 1966, Ser. No. 537,805
7 Claims. (Cl. 228—44)



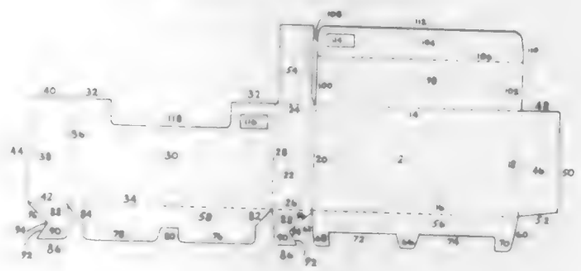
1. An apparatus for use in manufacturing laminated heads or closures, comprising:
(a) a pressure ram adapted to force an outer curved layer into close contact with an inner layer which is shaped as a partial sphere,
(b) a rotatable support arm having a curvature generally conforming to the external surface of the inner layer,
(c) a pivot pin adapted to be positioned at approximate the central point of the inner layer for pivotally mounting one end of the rotatable support arm thereto,
(d) guide means on the other end of the rotatable support arm maintaining the rotatable support arm spaced from the inner layer a predetermined distance during rotational movement thereof, and
(e) means mounting said pressure ram on said rotatable support arm for lateral movement rotationally with the support arm and for longitudinal movement in a curved path conforming to the curvature of the support arms.

3,374,936
DISPOSABLE FOOD STORAGE AND SERVING DEVICE
Albert E. Colato, Tujunga, Calif., assignor to Plastics, Inc., St. Paul, Minn.
Filed Aug. 18, 1965, Ser. No. 480,701
1 Claim. (Cl. 229—2.5)



1. A disposable food storage and serving device comprising:
(a) a dish-like body portion having an annular outwardly flaring wall structure,
(b) said annular wall structure having an annular flange extending radially and directly inwardly from the inner periphery thereof to form a bottom support and a void concentrically of the wall structure,
(c) a flat circular bottom portion resting on the flange, the diameter of said bottom portion being no greater than the outer diameter of said arcuate flange means where it extends from said annular flaring wall,
(d) lug means extending radially inwardly from said wall structure and spaced from said annular flange and under which said bottom portion is secured in pressing engagement with said flange,
(e) said wall structure molded of a plastic material whereby the device with material therein has sufficient rigidity to be held by the fingers of one hand in an extended position without external support.

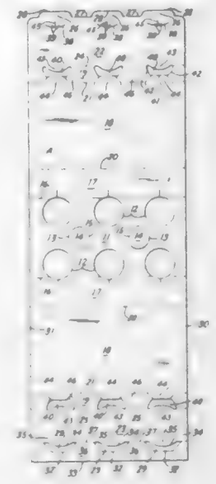
3,374,937
COLLAPSIBLE SETUP CARTON
Le Roy P. Wilson, 84 Cambridge St., Lindsay, Ontario, Canada
Filed Jan. 24, 1966, Ser. No. 522,680
5 Claims. (Cl. 229—39)



This invention relates to improvements in collapsible setup cartons and more particularly to cartons which may be set up and then filled with stationery such as envelopes by means of automatic machinery; preferably the subject carton is made from sturdy paper board commonly employed for cartons of this nature.

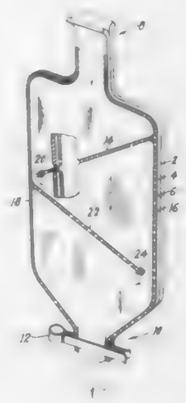
3,374,938
CONSTRUCTION OF INTERLOCKING BOTTOM PANELS FOR WRAPAROUND TYPE BOTTLE OR CAN CARRIERS
Chester J. Pierce, Jr., Palo Alto, Calif., assignor to Certipak Corporation, New York, N.Y., a corporation of Delaware
Filed May 5, 1967, Ser. No. 636,435
7 Claims. (Cl. 229—40)

The present improvements provide a construction of interlocked bottom panels of a bottle or can carrier of the wraparound type. The improved construction results in a tightly interwoven disposition of the exposed bottom panel edges in the sense that the edge of one panel alternately



overlies and underlies exposed edge portions of the other panel producing a seam which will not catch on rough or irregular surfaces over which the carrier is placed or slid.

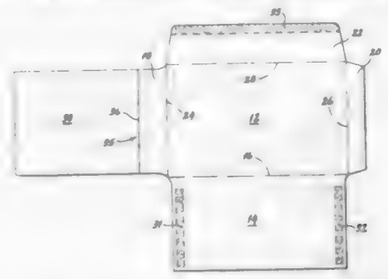
3,374,939
DISPOSABLE CONTAINERS WITH LIQUID TRAP
William R. McMenimen, 290 Haverhill St., North Reading, Mass. 01864
Filed June 22, 1966, Ser. No. 559,628
1 Claim. (Cl. 229—53)



A flexible disposable container having first and second sides formed of plastic and joined around their peripheries by heat sealing, the container being provided with an inlet and an outlet, first and second baffle means formed in said container by joining the sides by heat sealing, the baffle means cooperating to permit the flow of liquid from the inlet to the outlet, but acting to substantially obstruct flow in the reverse direction.

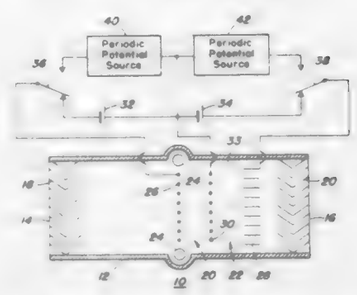
3,374,940
ENVELOPES WITH INTEGRAL, DETACHABLE COUPONS CONTAINED THEREIN
Robert D. Allison, 140 Garfield Road, West Hartford, Conn. 06091
Filed June 15, 1966, Ser. No. 557,798
7 Claims. (Cl. 229—70)

An envelope is made from a single blank of paper or other similar sheet material. The blank includes an extension which constitues a coupon or other item to be enclosed in the envelope. To form the envelope the blank is folded and sealed in such a way that the extension is completely enveloped and concealed. The extension is unsealed to any other part of the blank and is detachably



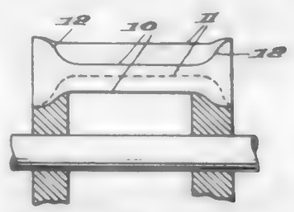
secured to the remminder of the blank by a line of perforations so that when the envelope is opened the extension may be readily removed therefrom.

3,374,941
AIR BLOWER
Ernest Carl Okress, Elizabeth, N.J., assignor to American Standard Inc., a corporation of Delaware
Filed June 30, 1964, Ser. No. 379,183
10 Claims. (Cl. 230—1)



An air blower in the form of a conduit has an inlet and an outlet. Within the conduit is means such as field generating electrodes, or other ionizing devices for ionizing the gas molecules without dissociation. Other field generating electrodes and/or magnetic devices generate fields which accelerate the ionized particles which by normal collision processes drive unionized gas molecules from the conduit outlet.

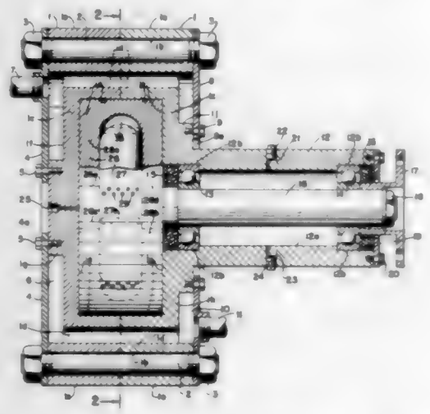
3,374,942
ROTARY PRESSURE TRANSFORMER
Claude Seippel, Zurich, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Aug. 8, 1966, Ser. No. 571,012
Claims priority, application Switzerland, Aug. 12, 1965, 11,353/65
8 Claims. (Cl. 230—69)



1. In a rotary pressure transformer comprising a circular array of elongated cells in which energy conversions accompanied by compression and rarefaction waves are produced by opening and closing of the cell ends in rotation in conjunction with connection of the cell ends when opened with gas inflow and outflow channels, the improvement wherein said cells except for the opposite end

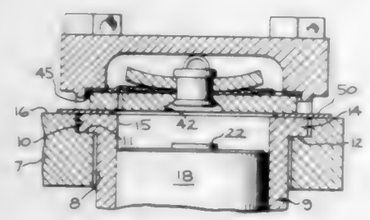
portions thereof have a cross-section favorable to the flow of the gas, and said end portions of said cells are constricted in a circumferential direction and enlarged in a direction perpendicularly thereto.

3,374,943
ROTARY GAS COMPRESSOR
Kenneth G. Cervenka, 204 N. Dewberry, Midland, Tex. 79701
Filed Aug. 15, 1966, Ser. No. 572,534
15 Claims. (Cl. 230—152)



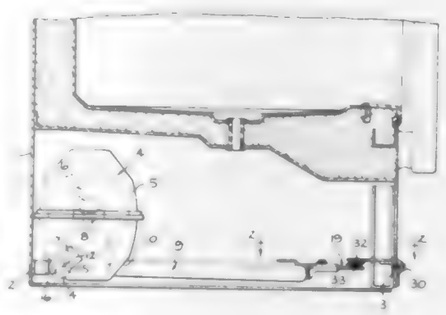
1. A rotary gas compressor comprising an outer casing having a cylindrical recess therein; a bearing carrier on said casing disposed axially of said recess; an input shaft journaled in said carrier and extending into said recess; a cylindrical inner compression casing within said recess and having an axial hole for said shaft, and having a non-cylindrical double bi-center semi-torus ring compression chamber therein provided with two sets of suction gas ports and discharge gas ports; a cylindrical rotor within said compression chamber keyed to said shaft and of width conforming with that of the compression chamber, the periphery of the rotor and the peripheral wall of the compression chamber being rounded on the same radius whereby the rotor is tangent to the walls of the compression chamber at points on the horizontal axis of the shaft thereby leaving crescent-shaped compression spaces between the upper and lower portions of the rotor and the top and bottom portions of the compression chamber disposed 180° apart into which the discharge ports and suction ports extend; said rotor having four radial slots spaced 90° apart; slidable vanes in said slots having peripheries rounded on the same radius as the peripheral walls of the rotor and compression chamber, and means for cooling the outer casing and inner compression chamber carried thereby.

3,374,944
COMPRESSOR UNIT
Owen H. Scheldorf, Fern Creek, and Robert E. Rogers, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Aug. 26, 1966, Ser. No. 575,290
3 Claims. (Cl. 230—172)



1. A compressor comprising:
a frame,
a drive shaft supported by said frame and having a crank pin at one end thereof,
a cylinder,
said frame including a cylinder support member having an opening therein for loosely receiving said cylinder and means for supporting said cylinder with the axis thereof in the plane of rotation of said crank pin,
a piston in said cylinder,
means for operatively connecting said piston to said shaft comprising a yoke rigidly connected to said piston and a cross slide reciprocating in said yoke and having a transverse bore for receiving said crank pin,
a valve plate having a peripheral edge overlapping said one end of said cylinder,
said plate and piston including a cooperating means for positioning said plate relative to said piston when said piston is at the top of its stroke,
a cylinder head including a discharge cavity and an annular relieved area surrounding said cavity for loosely receiving said valve plate, said relieved area including a shoulder for engaging the upper edge portion of said plate,
and fastening means for securing said cylinder head to said cylinder support member to clamp said plate and cylinder in operative positions relative to said piston.

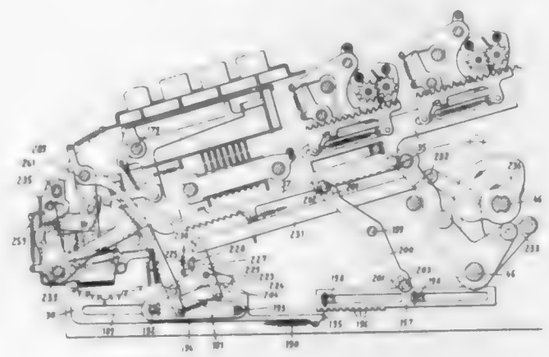
3,374,945
RESILIENT MOUNT FOR HERMETIC MOTOR COMPRESSOR UNITS
Chester F. Engleman and Alfred G. Butsch, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed July 1, 1966, Ser. No. 562,366
2 Claims. (Cl. 230—235)



1. In combination:
a supporting frame including spaced first and second support members,
a hermetic compressor unit comprising a sealed casing positioned adjacent said first support member and an elongated member rigidly connected to and extending substantially horizontally and outwardly from one side of said casing towards said second support member with the outer end thereof spaced from said second support member,
a motor-compressor disposed within said casing and including a compressor and a motor connected to said compressor by a drive shaft disposed for rotation about a horizontal axis substantially perpendicular to said oil cooling tube,
resilient support means for pivotally supporting said casing on said first support member,
and means for resiliently supporting said unit on said second support member comprising a generally hair-pin shaped spring wire including spaced legs connected by a return bend portion,

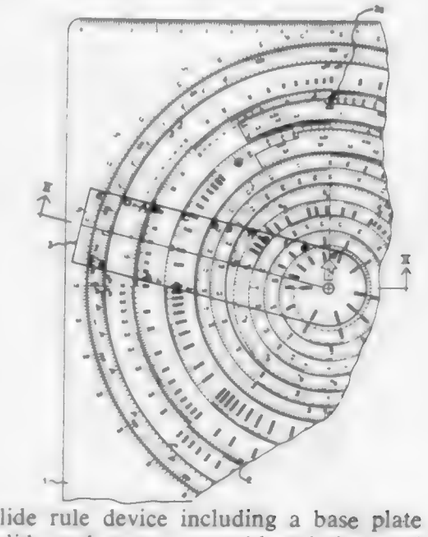
means for rigidly securing the end portions of said legs to said outer end of said elongated member and means for rigidly securing said return bend portion to said second support member,
an intermediate portion of each of said legs being formed to provide a shock and vibration absorbing substantially vertical coiled section.

3,374,946
COMPUTER FOR MULTIPLICATION WITH ABBREVIATED, CONTINUAL ADDITION OR SUBTRACTION
Otto Haberkorn, Gerstetten, Wurttemberg, Germany, assignor to Walther Buromaschinen G.m.b.H.
Filed Aug. 9, 1965, Ser. No. 478,050
Claims priority, application Germany, Aug. 7, 1964, W 37,344
24 Claims. (Cl. 235—60)



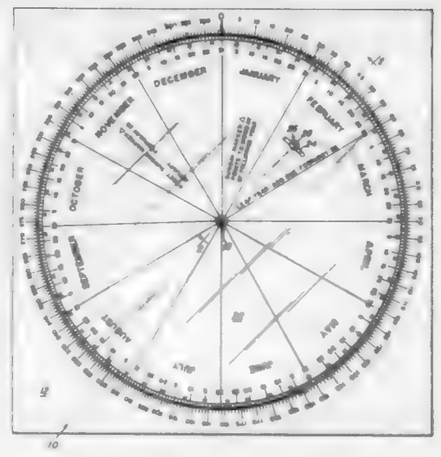
1. A calculating machine for performing multiplication with an abbreviated number of sequential additive or subtractive operations, respectively, of the multiplicand wherein the number of machine cycles for each decimal place of the multiplier, correspond to the value of the individual multiplier digits 1–5 or to the complementary value of the individual multiplier digits 6–9, respectively, characterized by the fact that the sum total of the required machine cycles assigned to the given multiplier digits is reduced, said calculator comprising at least two movably mounted distributor counter registers; means for storing a multiplicand; means for storing a multiplier; means sensing said multiplier storing means for transferring an addition or subtraction of the multiplicand for each individual multiplier digit sensed to said registers; means selectively coupling said registers to said transferring means for distributing the addition or subtraction among two or more distributor counter registers; second means for transferring the accumulated amounts of all but one of the distributor counter registers into said one distributor counter register to form the final product; a plurality of multi-members associated with each multiplier digit and longitudinally movable by an amount corresponding to the numeric value of the multiplier digit, one edge of each of said multi-members being notched to form a row of steps descending with increasing multiplier digit value for the digits 1–5 and a row of ascending steps for the digit values 6–9 with each scanned step elevation corresponding to one machine cycle, characterized by the fact that, except for the step 5, each step is assigned a number corresponding to that of the distributor counter registers used of multiplier digits following one another in the natural series; said means for sensing the position of each multi-member, for each multiplier digit, including means for enabling transfer of the multiplicand from said first transfer means during each machine cycle corresponding to a scanned elevation in each case only once into one or more than one distributor counter register.

3,374,947
SLIDE RULE
Carl Rune Wern, George Herman Wern, and Lars Åke Wern, all of Vartavagen 59, Stockholm, Sweden
Filed May 13, 1966, Ser. No. 549,882
Claims priority, application Sweden, May 20, 1965, 6,568/65; Aug. 20, 1965, 10,922/65; Mar. 11, 1966, 3,213/66
7 Claims. (Cl. 235—84)



A slide rule device including a base plate and a circular slide and runner rotatable relative to the base and to each other about an axis through the center of the base plate. Provision is made for so solving multiplication and division problems and exponential and other equations and of providing powers and roots as to simultaneously provide both the sequence of digits in the answer and the correct location of the decimal point. Also, provision may be made for computing logarithms and ascertaining sine, tangent, and arc values of angles, areas of circles having a specified radii or diameters, and reciprocals of numbers as well as other functions.

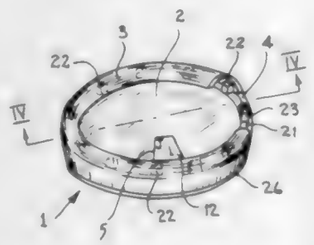
3,374,948
CALENDAR CALCULATOR
George L. McColm, 6 Boatclub Road, Poona 1, India
Filed Oct. 21, 1965, Ser. No. 500,051
3 Claims. (Cl. 235—88)



This invention relates to a calendar calculator including a base having a circle therein divided into 365 equal parts numbering consecutively from 0 to 365. A first disc is rotatably mounted on the base concentrically with the circle and is also divided into 365 equal portions and designated with the months and days of each month consecutively. A second disc is rotatably mounted on the base above the first disc and concentrically therewith.

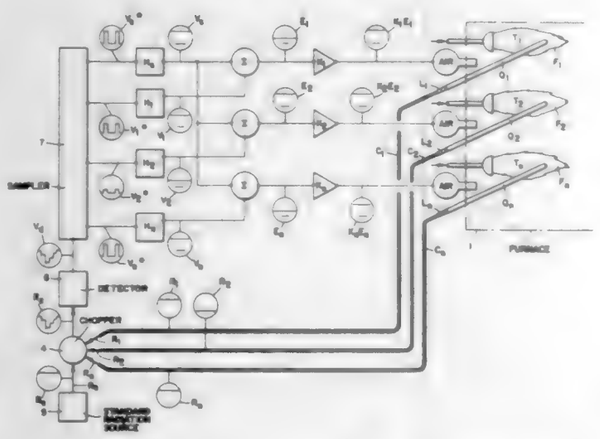
The second disc is also divided into 365 equal segments and bears indicia indicating consecutively every 7th day of the week. The indicia on the base and first and second discs are so positioned as to provide ready alignment and reading of values as needed whereby the indicia on the second disc may be selectively aligned with the indicia on the first disc to indicate on what dates a specific day of the week falls throughout the year and whereby by aligning a specific date on the first disc with the zero number on the base indicia the elapsed days from this date to any date on the first disc may be determined by reading the number on the base indicia aligned with said date.

3,374,949
RELIGIOUS ROSARIES
Martin Cecil Hayden, Loyola, 41 St. Assam's Ave., Raheny, Dublin, Ireland
Filed Nov. 23, 1966, Ser. No. 596,607
4 Claims. (Cl. 235—123)



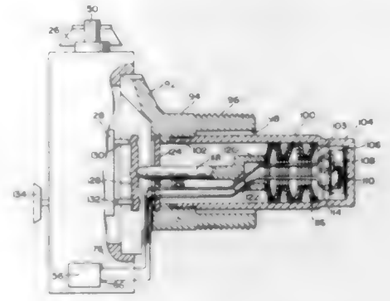
A ring-type rosary composed of a rotatable bead ring disposed within a casing with a portion of the casing slotted for manually moving the bead ring. A picture wheel having a plurality of separate radially extending sectors is positioned within the casing, and each time the bead ring completes one revolution, ratchet means within the casing move the picture wheel a predetermined angular distance. The casing has a transparent window in register with one of the sectors on the picture wheel for displaying the material depicted in the sectors.

3,374,950
PHOTO-PYROMETRIC CONTROL SYSTEM FOR EFFICIENT COMBUSTION IN MULTIPLE-BURNER, RESIDUAL-FUEL-FIRED FURNACES
Thomas C. Menzel, Orange, and John E. Gerrard, Matawan, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,292
5 Claims. (Cl. 236—15)



4. Apparatus for the control of a multiple burner furnace comprising means for measuring the radiation of each burner flame; a standard radiation source; means for converting the measured radiation of each burner flame and of said standard radiation source to proportionally equivalent electrical signals; means for sequentially comparing each electrical signal proportional to said radiation of each burner flame with the electrical signal from said standard radiation source; and means responsive to the difference between the compared signal levels for adjusting the air-fuel supply to each burner.

3,374,951
DUAL THERMOSTATIC CONTROL DEVICE
Wilbur F. Jackson and Theodore J. Dykzeul, Rolling Hills, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Apr. 28, 1966, Ser. No. 545,958
7 Claims. (Cl. 236—21)

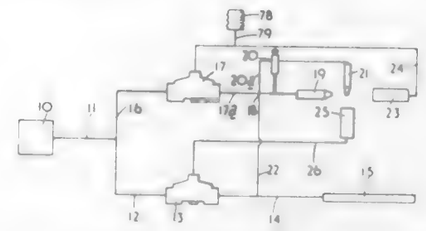


1. In a thermostatic control device, the combination comprising,
a casing having inlet and outlet means and flow passage means therebetween,
control means in said passage means movable between controlling positions,
normal temperature sensor means carried by said casing including a tube of thermally responsive material and a rod of relatively thermally non-responsive material axially disposed in said tube,
means defining an operative connection between said rod and said control means for moving the same between controlling positions in response to normal temperature conditions,
thermoelectric means including safety shut-off means in said passage means and electromagnetic means adapted to be energized for holding said safety shut-off means in an open position,
thermoelectric circuit means for energizing said electromagnetic means,
bimetal switch means in said tube electrically connected in said circuit means for deenergizing said electromagnetic means in response to abnormal temperature conditions, and
bimetal disc means in said tube engaging said rod for effecting movement thereof in response to normal temperature conditions.

3,374,952
CONTROLS FOR GAS-BURNING SYSTEMS
Frederick Carr, Birmingham, England, assignor to Servotomic Limited, London, England, a British company
Filed Jan. 11, 1966, Ser. No. 519,879
Claims priority, application Great Britain, Jan. 13, 1965, 1,471/65
6 Claims. (Cl. 236—68)

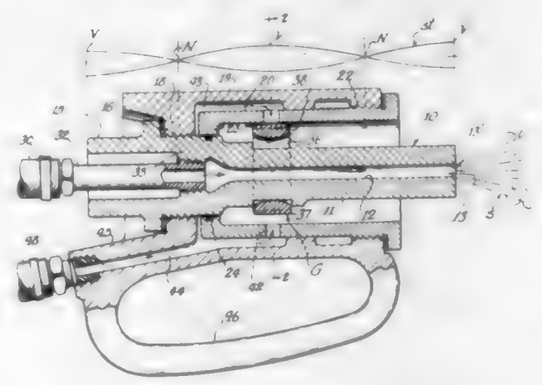
The specification discloses a gas-burning system having a main burner, a pilot burner and an auxiliary burner. Operation of the auxiliary burner controls the gas supply to the main burner. The system includes a main-burner, gas-supply valve which acts both as a shut-off valve for the main burner and, when it is open, as a pressure

governor for the gas supplied to the main burner. This valve is controlled in dependence on operation of the auxiliary burner. In one embodiment, the auxiliary burner can also be supplied from a gas control valve which oper-



ates as a shut-off valve and also as a pressure governor when open. In a second embodiment, the supply valve for the main burner is controlled in dependence on the operation both of the pilot burner and of the auxiliary burner.

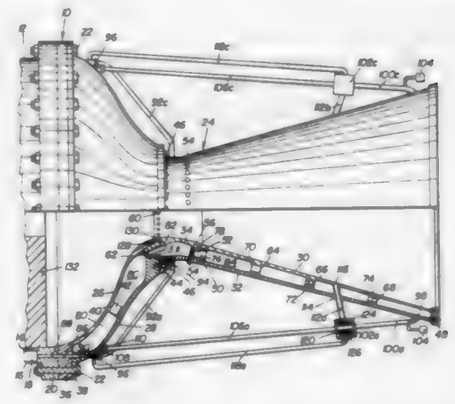
3,374,953
SONICALLY VIBRATORY LIQUID SPRAYER
Albert G. Bodine, Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif. 91406)
Filed Aug. 25, 1965, Ser. No. 482,361
3 Claims. (Cl. 239—102)



An elastic spray member has an axial duct for conducting liquid therethrough and an axially aligned spray discharge nozzle or orifice. An orbiting-mass oscillator in the form of a gyratory ring is incorporated in the spray member to elastically vibrate such member. Such vibratory elastic resonant vibration of the spray member efficiently atomizes the liquid to provide a very fine spray from the nozzle.

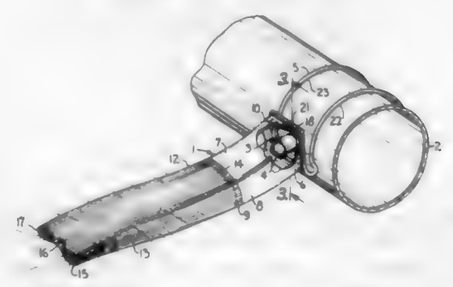
3,374,954
NOZZLE COOLING AND THRUST VECTOR CONTROL APPARATUS
Theodore B. Card, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 3, 1966, Ser. No. 531,604
2 Claims. (Cl. 239—127.1)

1. In a rocket motor, nozzle cooling and thrust vector control apparatus comprising:
a convergent-divergent nozzle having inner and outer walls disposed in spaced, concentric relation and sealably joined at the forward and aft ends thereof, an annular partition extending between said walls adjacent the throat of said nozzle and dividing the annular space between said walls into forward and aft chambers, said nozzle being provided with a plurality of circumferentially spaced cooling ports formed in said inner wall at said throat and in communication with said forward chamber, a plurality of circumferentially spaced injection ports formed in said inner wall aft of said throat, at least one fluid supply port formed in said outer wall and in communication with the forward portion of said aft chamber, a plurality of circumferentially spaced pressurized-fluid outlet ports formed in said outer wall and in communication with the aft portion of said aft chamber, and a plurality of circumferentially spaced coolant supply ports formed in said outer wall and in communication with said forward chamber;
fluid reservoir and first conduit means carried by said rocket motor, said means being connected to said supply port and adapted to supply fluid to said aft chamber under pressure;
a plurality of second conduit means each communicatively connected to a respective one of said pressurized-fluid outlet ports;



a plurality of third conduit means each communicatively connected to a respective one of said coolant supply ports;
a plurality of fourth conduit means each extending through said outer wall and communicatively connected to a respective one of said injection ports;
a plurality of fifth conduit means each communicatively connected to said first conduit means; and
a plurality of valves each connected to a respective one of said second, third, fourth and fifth conduit means and operable between a first configuration thereof wherein said second and third conduit means connected thereto are in communication and a second configuration thereof wherein said second and fourth conduit means, and said third and fifth conduit means, connected thereto are respectively in communication.

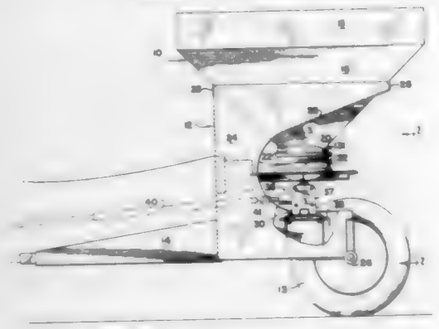
3,374,955
FLOW DISTRIBUTOR ATTACHMENT FOR IRRIGATION FLOW WAYS
Lewis Wayne Hester, Sublette, Kans., assignor to Anadarko Production Company, Liberal, Kans., a corporation of Delaware
Filed Jan. 10, 1966, Ser. No. 519,670
2 Claims. (Cl. 239—145)



A flow distributor for use in an irrigation system having a flow way connected to a source of water and discharge openings directed laterally therefrom, said dis-

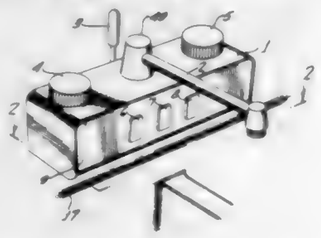
tributor including an elongate flexible collapsible tube with an impervious portion extending from the inlet end with the major portion an elongate foraminous tube that extends from the impervious portion to the outlet end. The distributor being supported with its inlet end surrounding the discharge opening of the flow way by a wire loop threaded into a hem of the tube at the inlet end for maintaining same in distended position with extensions on the loop forming resilient clamp means engaged with the flow way, said tube having the central portion at the outlet end connected to provide laterally spaced restricted discharge openings whereby water passes laterally through the foraminous portion at low velocity.

3,374,956
FERTILIZER SPREADER
Michael V. Bazilli, Oakville, and Stanley G. Siddall, Orangeville, Ontario, Canada, and William G. Moore and Jack C. Whitesides, Albany, Ga., assignors to Lilliston Implement Company, Albany, Ga., a corporation of Georgia
Filed July 19, 1965, Ser. No. 472,819
7 Claims. (Cl. 239—683)



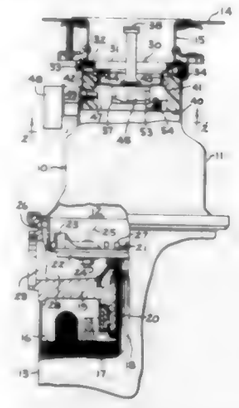
A fertilizer spreader for transporting and spreading fertilizer over a selected area of the ground with accurate control over the volume of the material spread and the area on which it is spread, while the speed of the device over the ground can be varied from extremely low speeds to extremely high speeds. The spreader includes a wheel supported frame, a spinner rotatable about a vertical axis, apertured valve plates positioned above the spinner for admitting fertilizer to the spinner, a circular baffle rotatable with the spinner above the valve plates, and an impeller positioned between the baffle and valve plates and rotatable with the spinner.

3,374,957
FLUID FLOW CONTROL DEVICE
Truman V. Tyler, Palos Verdes Estates, Calif., assignor to Sierra Financial Corporation
Filed June 3, 1965, Ser. No. 460,977
5 Claims. (Cl. 241—33)



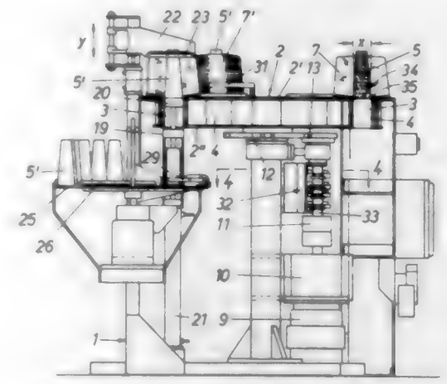
Electrical solenoids are placed in hot and cold water lines and such solenoids are actuated by push button controls to control the hot and cold water flow to a water faucet. The cold water control is interconnected with the control for a garbage disposal unit so as to provide simultaneous operation of the cold water with the disposal unit upon the actuation of a single control.

3,374,958
FOOD WASTE DISPOSER
William M. Shive, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed June 11, 1965, Ser. No. 463,153
6 Claims. (Cl. 241—46)



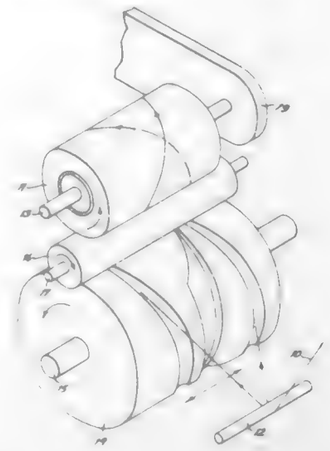
A stopper having passageways therethrough to allow water to drain from a sink or enter disposer for comminuting operation. A member is provided to selectively open and close the passageways. Means are also provided to separate at least a portion of the stopper periphery from its sealing surface to vent the comminuting chamber of the disposer as the passageways are opened.

3,374,959
APPARATUS FOR THE INSERTION OF A CORE INTO THE AXIAL OPENING OF YARN SPOOLS
Gerhard Tigges, Wuppertal-Cronenberg, Germany, assignor to Lebrecht Tigges, Wuppertal-Barmen, Germany, a corporation of Germany
Filed Dec. 17, 1965, Ser. No. 514,504
Claims priority, application Germany, Dec. 19, 1964, T 27,672
6 Claims. (Cl. 242—1)



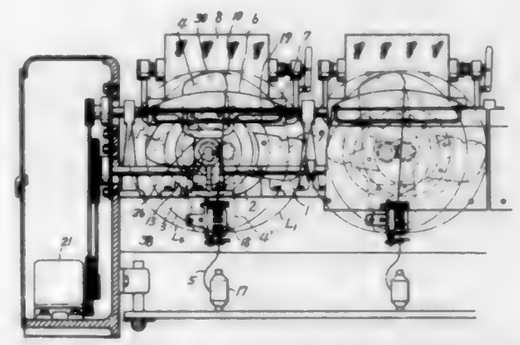
An apparatus for the ejection and insertion of a core into the axial opening of yarn spools or the like, which comprises a frame and a table movably mounted on the frame. A yarn wind is supported on the table and moves with the table past a plurality of working positions. First means for ejecting in one of said working positions of one core are disposed in an axial recess of the yarn spool from the upper side of the table, and second means for injecting in another of the working positions of another core from the lower side of said table are arranged. The table has passage openings having a diameter substantially equal with the largest diameter of the cores, and the first means for ejecting and the second means for injecting operate through the passage openings of the table.

3,374,960
STRAND WINDING
Robert K. Stanley, Media, Pa., assignor to Techniservice Corporation, Lester, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1965, Ser. No. 502,850
18 Claims. (Cl. 242—18.1)



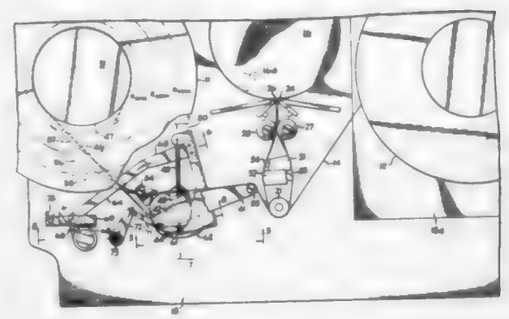
This invention relates to winding of textile strands into package form, concerning especially traverse winding thereof. Formation of a ribbon wind is precluded by means of a roll intermediate the package and strand-traversing means. The intermediate roll receives the strand and deposits it onto the package while also normally rotating the package. The intermediate roll also introduces variation into the traverse, both by simply being there and more especially by being moved bodily on its axis with respect to the traversing means, which in preferred form is a grooved traversing drive roll.

3,374,961
TRAVERSE MECHANISM
Naotoshi Otsuka, Mishima-shi, and Masayuki Norawa, Numazu-shi, Japan, assignors to Toshiba Machine Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Jan. 26, 1965, Ser. No. 428,036
Claims priority, application Japan, Jan. 27, 1964, 39/3,710
5 Claims. (Cl. 242—43)



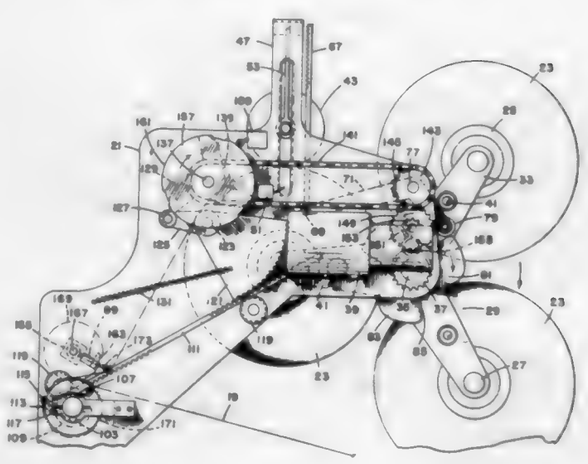
An improved rotary mechanism for traversing yarn is provided by traversing the yarn over oppositely rotating rotary wings rather than the grooved cam mechanism in conventional yarn traverse mechanisms presently employed. Rotary wings are fixed to the ends of rotary shafts at an appropriate distance from the center axis at opposite ends thereof. A rotary wing is rotated in the clockwise direction to move the supply yarn close to the forward end of the rotary wing from the left side of the bobbin along the convex end of a guide-part toward the right direction. As soon as the yarn is off the forward end of the rotary wing, the end of the other rotary wing is rotated in the opposite direction to catch the yarn and to move it along the aforementioned guide-part toward the left direction, to thereby wind the supply yarn onto the bobbin.

3,374,962
TAPE TENSION CONTROL FOR A TAPE RECORDER
Thomas Judson Dunsheath, Glenview, Ill., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed June 23, 1965, Ser. No. 466,289
12 Claims. (Cl. 242—55.12)



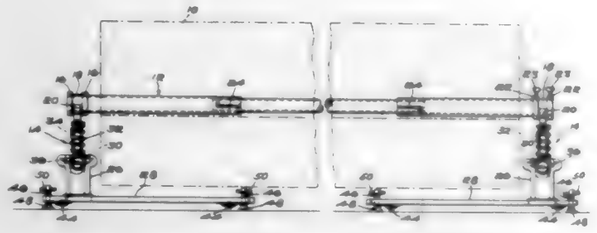
A tape tension control maintains a relatively constant tension in the magnetic tape. Tape tension is sensed by a lever having two sensing guide members displaced from the fulcrum. The torque at one guide is a measure of tape tension whereas the torque at the other guide is related to tape wrap radius. A spring applies reference bias to the tension sensing lever. The spring is fastened to a spring support which is pivoted about a point aligned with the spring when the apparatus is in the record mode position. The support may be pivoted to change the reference bias. Upon release of a brake holding the support in the new position, the action of the spring returns the support to the record mode position.

3,374,963
APPARATUS FOR SPLICING TRAVELING WEB MATERIAL
John D. Conti, Elkins Park, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 11, 1966, Ser. No. 533,645
9 Claims. (Cl. 242—58.4)



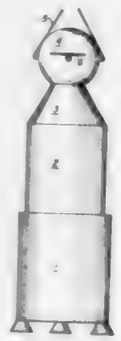
Apparatus for splicing the leading end portion of a web to the trailing end portion of a continuously advancing web without interrupting web travel and with the splicing apparatus being set in operation by means sensing the supply and/or tension of the traveling web.

3,374,964
CARPET ROLL HANDLING DEVICE
Pascal F. Corvotta, 9 Glendale Drive, Danvers, Mass. 01923
Filed July 11, 1966, Ser. No. 564,389
1 Claim. (Cl. 242—86.52)



A rod extended through the center of a rolled carpet is supported at each end in bearings carried by jacks. Each jack is supported on a base having rollers and may be rolled into position to engage the extended ends of the rod with the rug resting on the floor. The jacks are then operated to lift the carpet roll off floor to permit unwinding of the carpeting. Provision is made for elevating the bases to lift the rollers off the floor so that the jacks will remain stationary while the carpeting is being withdrawn.

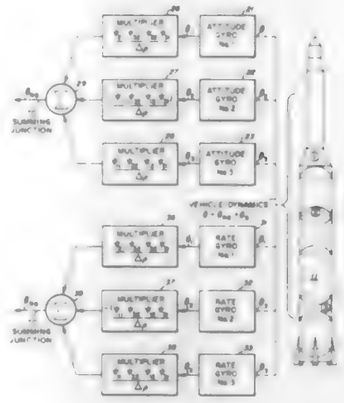
3,374,965
ESCAPE CAPSULE
Alexander T. Deutsch, 1735 Riggs Place NW., Washington, D.C. 20009
Filed Jan. 31, 1967, Ser. No. 612,883
9 Claims. (Cl. 244—1)



A sealed compartment secured to the upper top of a spacecraft and having a sealable door providing communication with the body of the spacecraft, into which astronauts may seal themselves and be safely sustained for a short time period as a safety compartment separable from the spacecraft and having means for safe transportation thereof back to earth.

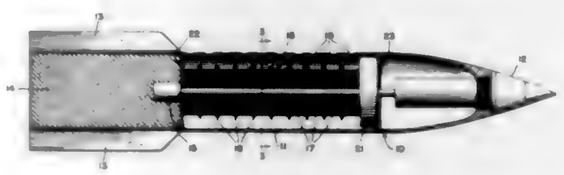
3,374,966
CONTROL SYSTEM
James C. Howard, Sunnyvale, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 19, 1966, Ser. No. 566,396
5 Claims. (Cl. 244—3.2)

In a large flexible space vehicle, signals from sensors detecting the motion of the vehicle are processed to reduce or eliminate the effects on the signals of bending motion of the vehicle. The processing is performed in accordance with functions determined by the elastic properties of the vehicle. This processing reduces or elimi-



nates the effects of bending motion on the signals, leaving the desired rigid-body motion portion of the signals for use in their manual or automatic control of the vehicle.

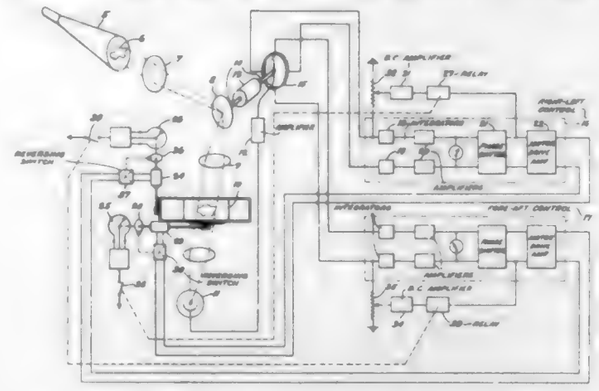
3,374,967
COURSE-CHANGING GUN-LAUNCHED MISSILE
Harold J. Plumley, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 6, 1949, Ser. No. 131,441
5 Claims. (Cl. 244—3.14)



1. Apparatus for changing the course of a missile in flight comprising, a casing for said missile, a reaction charge disposed within said casing and arranged to direct an impulse through one side of said casing and through the center of gravity of the missile as the charge is fired whereby the missile is given a lateral thrust and is directed along a new trajectory with the longitudinal axis of the missile initially at an angle with respect thereto, means on the missile for bringing said axis thereof into alignment with the new trajectory, and means carried by the missile and responsive to a transmitted signal from the launching point for firing said charge.

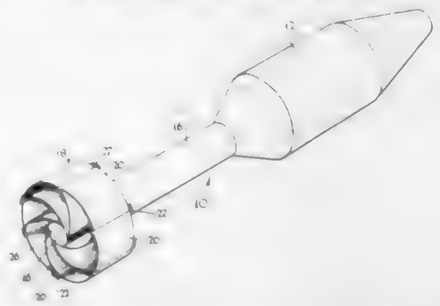
3,374,968
AUTOMATIC SCANNING AND LOCK-IN APPARATUS FOR A MECHANICAL OPTICAL SYSTEM USED IN NAVIGATIONAL CONTROL
William J. V. Toman, Cuyahoga Falls, Ohio, assignor to Goodyear Aerospace Corporation, a corporation of Delaware
Filed July 21, 1951, Ser. No. 237,985
13 Claims. (Cl. 244—3.17)

13. In combination, means for producing an actual image of a relatively large area of terrain, a map of the terrain to substantially the same scale and orientation, means for effecting a wide range of relative scanning movement between the map and image for seeking a substantial match therebetween, separate means for effecting a narrow range of relative scanning movement between the map and image for maintaining a continuous



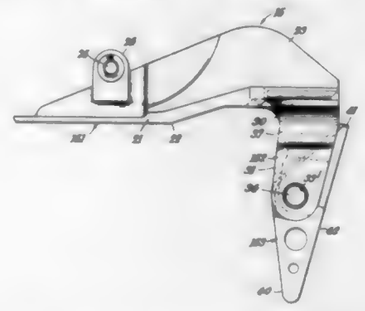
match therebetween, and means responsive to a substantial match between the map and image.

3,374,969
STABILIZED PROJECTILE
Richard R. Rhodes, Cheltenham, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed July 28, 1966, Ser. No. 568,681
3 Claims. (Cl. 244—3.27)



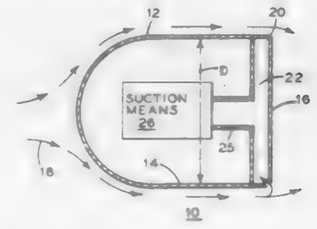
A fin stabilized projectile including a head portion of larger diameter than the bore of the weapon from which it is fired. A boom portion integral with the head portion and capable of passage through the weapon bore, and having a reduced diameter portion at its rear end. Resilient stabilizing means secured to the reduced portion of the boom and capable of passage through the bore.

3,374,970
ARRESTER HOOKS FOR AIRCRAFT
Arthur N. Rhodes, Fulwood, Preston, and Alfred E. Ellison, Lytham St. Anne's, England, assignors to British Aircraft Corporation (Operating) Limited, London, England, a British company
Filed Sept. 6, 1966, Ser. No. 577,230
8 Claims. (Cl. 244—110)



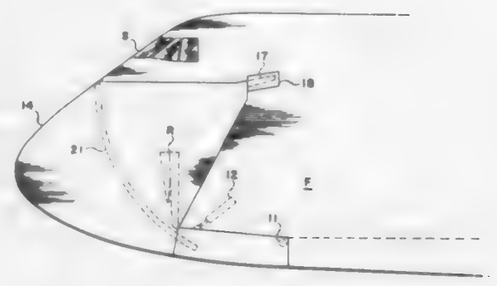
1. An arrester hook for an aircraft, comprising a leg portion adapted to be connected through suspension means to the aircraft, a foot portion extending at an angle to the leg portion and providing a notch for receiving an arrester wire in the instep or angle between the leg portion and the foot portion, and an elongated toe portion having a substantially flat under-surface for riding over the landing surface, said toe portion being pivotally mounted on a transverse axis in the foot portion so as to be capable of adapting itself to variations in the relative angle between the hook and the landing surface.

3,374,971
FLUID DYNAMIC DRAG REDUCTION
Gunnar Heskestad, East Brunswick, N.J., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,447
10 Claims. (Cl. 244—130)



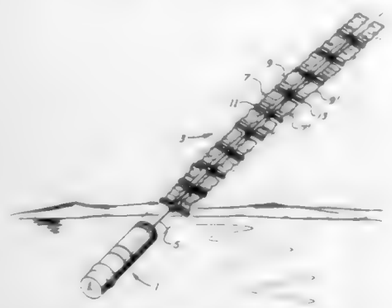
1. The method of minimizing the aerodynamic form drag on an aircraft wing which has top and bottom surfaces and a flat bluff trailing surface and which is moving through air at subsonic velocities, which consists in applying suction through a substantially uniform and continuous slot positioned along the peripheral edge between at least one of said top and bottom surfaces and said bluff trailing surface, said slot having at least one rounded edge and being connected through a conduit of uniformly varying cross-section to a source of suction, and maintaining said suction so as to draw air over said rounded edge through said slot and said conduit to said source of suction.

3,374,972
HINGED END SECTION FOR CARGO AIRCRAFT
James A. Webb, Sr., Smyrna, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 27, 1965, Ser. No. 490,358
14 Claims. (Cl. 244—137)



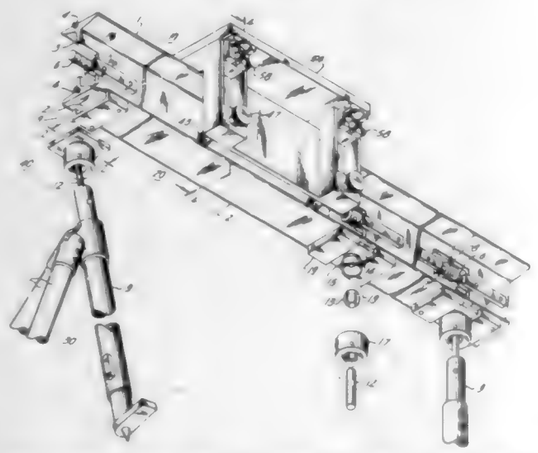
A door for the cargo compartment of an aircraft is provided which forms an aerodynamic clean end of the fuselage and swings vertically in visor fashion from the fuselage to an overhead, open position. Side pivots mount the visor door to the fuselage and a slidable center connection with drive gives the visor door three-point support to assure operating ease and stability. When opened, the door is located above the fuselage and its lower edge is configured to permit a field of vision under it from the cabin for taxiing and observing on and off cargo loading and to reduce the weight of the door.

3,374,973
DRAG DEVICE
David T. Lokerson, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 6, 1966, Ser. No. 540,774
9 Claims. (Cl. 244—138)



1. A banner drag device comprising
a rope like elongated flexible tow member, a plurality of longitudinally spaced banner support members mounted on said tow member, and
a plurality of banner members mounted on said support members, each banner supported by a single support member to form an array of banners.

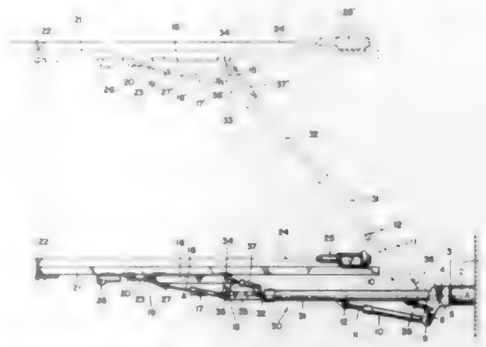
3,374,974
CAMERA-SUPPORTING MEANS
Urs Beat Furrer, Tarrytown, N.Y. (Carleton Ave., Briarcliff Manor, N.Y. 10510), and Ronald Martin Lautore, New York, N.Y. (2500 Johnson Ave., Riverdale, N.Y. 10471)
Filed May 16, 1966, Ser. No. 550,426
6 Claims. (Cl. 248—13)



A camera-supporting dolly for riding on an extended track. Several mutually perpendicular and adjustable guide wheels are provided in the dolly to prevent the dolly from lifting off the track or tilting with respect to the track, thereby minimizing unwanted shaking and vibration of the dolly.

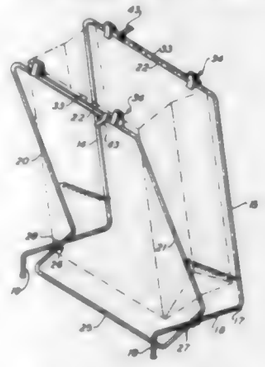
3,374,975
BOOM FOR DRILLING MACHINES
Herbert Bronder, Sandvika, Norway, assignor to Ingersoll-Rand World Trade, Hamilton, Bermuda
Continuation-in-part of application Ser. No. 469,783, July 6, 1965. This application Nov. 23, 1965, Ser. No. 509,319
Claims priority, application Norway, July 9, 1964, 153,970; Jan. 15, 1965, 156,388
10 Claims. (Cl. 248—16)

Boom apparatus for supporting a rock drill which permits parallel holes to be drilled. There is a motor for rotating the boom 360° about the longitudinal axis of the boom. The apparatus for maintaining the drill parallel may be of the parallelogram type or it may be control apparatus responsive to the pivotal movement of the main boom. Such control apparatus may be series con-



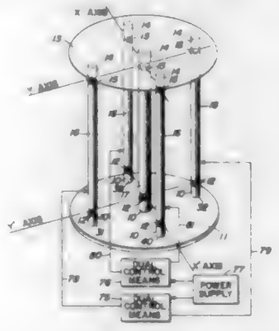
nected motors for pivoting the drilling apparatus in an amount equal to and in a direction opposite from the pivoting of the main boom.

3,374,976
REFUSE BAG HOLDER
Robert A. Kurlander, 277 Hillside Ave., Nutley, N.J. 07110, and George M. Nutting, 202 Beverly Hills Road, Clifton, N.J. 07012
Filed Jan. 6, 1966, Ser. No. 519,100
3 Claims. (Cl. 248—97)



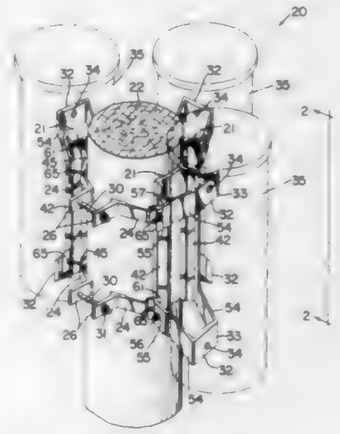
A refuse bag holder defined by a pair of opposed, self-standing frames each frame having cam operated clamping means on the top thereof for detachably securing a refuse bag thereto.

3,374,977
ANTENNA POSITIONER
George Moy, Jr., Dallas, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed June 9, 1966, Ser. No. 556,494
11 Claims. (Cl. 248—163)



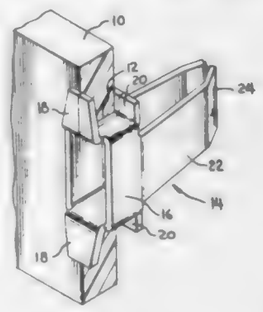
A concept and embodiments of positioning one plane with respect to another (as in antenna positioning) employing linkages and linear drives rather than conventional gear and bearings. Suspension arms are employed between a mounting and a base plane with each arm comprising a single linear drive unit each end of which is pivotably connected to one of the planes. A further fixed length suspension means is incorporated between planes to effect geometric stability. The mounting plane may be positioned by driving diagonally opposite ones of the linear drive units to effect mounting plane rotation about two mutually perpendicular axes with respect to the base plane.

3,374,978
TRANSFORMER MOUNTING DEVICE AND METHOD
John L. Salmon, Memphis, Tenn., and John E. Lile, St. Louis County, Mo., assignors, by direct and mesne assignments, to Utility Products Manufacturing Company, Memphis, Tenn., a corporation of Tennessee
Filed Feb. 25, 1966, Ser. No. 530,059
12 Claims. (Cl. 248—221)



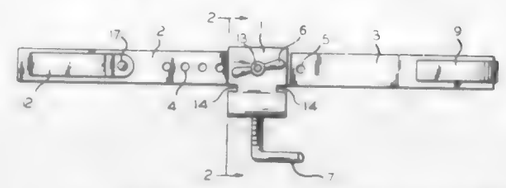
This invention pertains to an improved method and device for supporting apparatus, such as electrical transformers, on poles. Elongated bearing plates are employed which may be fastened about poles using link means having hooks in their outer end portions designed to permit selective compensation for variations in pole circumferences. Brackets upon which said apparatus will be mounted may be attached to said plates at a plurality of positions and may be rotated with respect to said plates to compensate for different sizes of apparatus to be supported.

3,374,979
FASTENER
Daniel Russell Coldren and Ralph Rupp Lau, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Dec. 10, 1965, Ser. No. 513,012
3 Claims. (Cl. 248—223)



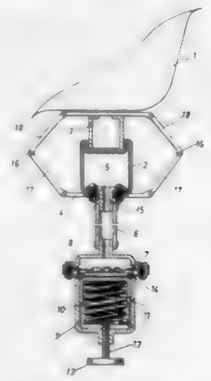
A fastener is disclosed for electrically grounding and mechanically fastening a period circuit board to a chassis or the like. Various types of inserts are provided for mating with a spring-arm receptacle. The receptacle is secured to a board member by flanges or lances. Ears are provided for preventing overstressing of the arms of the receptacle.

3,374,980
PAINT PAN SAFETY CLAMP
Joseph Chovan, 3712 Sheridan Road, Kenosha, Wis. 53140
Filed Aug. 22, 1966, Ser. No. 574,116
9 Claims. (Cl. 248—229)



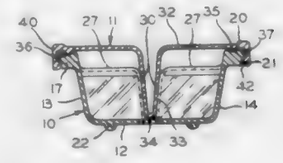
1. In a paint tray safety clamp, a frame, arms projecting from at least two sides of said frame, restraining means to restrict movement longitudinally and laterally of said arms located at a fixed position on each such arm, one said restraining means having one side open and a second said restraining means having a corresponding side which can be selectively opened and closed, means for adjusting the distance of at least one said restraining means from said frame, and compression means for attaching and detaching said frame to an object having a pair of spaced surfaces.

3,374,981
SPRING SUSPENSION FOR A SEAT
Anton Stuckenberger, Vagen, and Arnold Tschursch, Hinrichssegen, Post Henfeld, Germany, assignors to Georg Fritzmeier, Kommanditgesellschaft, Grosshelfendorf, Germany, a firm of Germany
Filed July 7, 1965, Ser. No. 470,100
Claims priority, application Germany, Aug. 28, 1964, F 43,848
7 Claims. (Cl. 248—400)



Spring suspension for a vehicle seat in which a rolling-type bellows device is positioned under the seat. A diaphragm is connected to a pneumatic transmission line to enclose an air column, which can be moved against an adjustably spring-loaded piston by displacing the diaphragm.

3,374,982
ICE CUBE TRAY
George Joseph Sallade, R.R. 2, Box 202, Loogootee, Ind. 47553
Filed Nov. 24, 1965, Ser. No. 509,507
10 Claims. (Cl. 249—121)



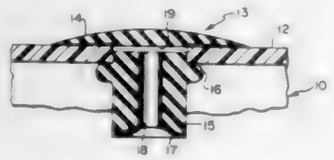
1. In an ice cube tray:
(a) a tray including a plurality of spaced partitions arranged in adjacent side by side rows,

(b) the partitions of one row being spaced laterally from the partitions of the adjacent row to provide an intervening recess, and

(c) a lid attached to and disposed over the tray,

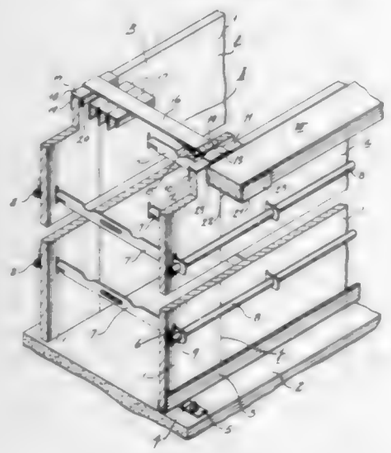
(d) the lid including a depending rib interfitting the recess and co-operating with the partitions to form freezing compartments.

3,374,983
CONCRETE FORM STRIPPING VALVE
Eldridge R. Garretson, North Kingsville, William S. Spurr, Geneva, and Chester L. Ward, Ashtabula, Ohio, assignors to The Molded Glass Company, Ashtabula, Ohio, a corporation of Ohio
Filed Aug. 9, 1965, Ser. No. 478,149
8 Claims. (Cl. 249—205)



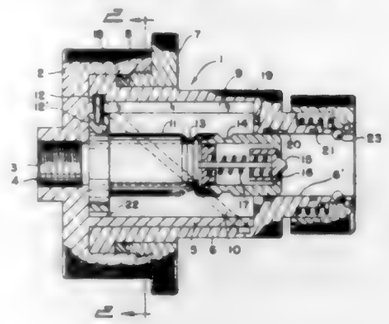
A valve for concrete molding form having a stripping aperture, such valve having a domed head and cylindrical stem, with the stem having an internal air passage from the free end to a point just beneath the head. The valve is inserted in the mold aperture and the stem has an external rib which will pass through the aperture by resilient deformation but engage with the underside for permanent assembly to the form in the normal use of the same.

3,374,984
WALL FORM BRACKET
Walter E. Mueller, 1347 Cobury Lands Drive, St. Louis, Mo. 63137
Filed Sept. 16, 1965, Ser. No. 487,694
1 Claim. (Cl. 249—216)



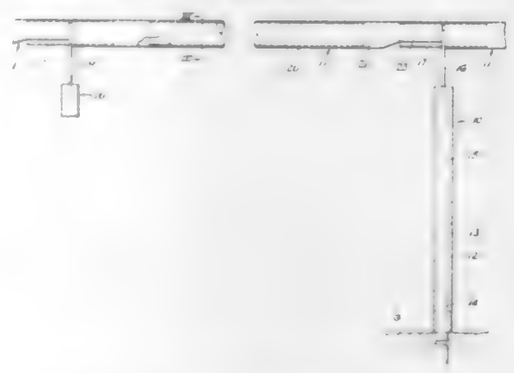
A wall form bracket for use with a pair of spaced-apart wall form panels having a cross bar for spanning the distance between the panels, a first panel engaging member being integrally formed in one end portion of said cross arm and opening downwardly, a waler receiving portion provided adjacent said panel engaging member and opening upwardly for maintaining a waler proximate the outer surface of one of said panels, and a plurality of second panel engaging members engages to the other end portion of said cross arm for selected engagement with said other panel for accommodating the predetermined distance between the panels, and hinge means incorporated in said cross arm to render same swingable within a vertical plane.

3,374,985
COUPLING DEVICE FOR PIPES, CONDUITS AND THE LIKE
John D. Gessic, Chardon, Ohio, assignor of one-half to Cullen B. Crawford, Cleveland, Ohio
Filed Oct. 22, 1965, Ser. No. 500,859
11 Claims. (Cl. 251—252)



1. A coupling device for pipes, conduits and the like comprising an end cap having a substantially central opening extending therethrough, a valve body positioned adjacent said end cap and having a substantially central opening extending therethrough in substantial alignment with said opening in said end cap, a sealing ring surrounding said valve body and securing said body to said end cap, a longitudinally extending slot in said end cap, a spiral groove in said valve body, a valve positioned in said valve body adapted to be moved longitudinally therein, and means on said valve in engagement with said slot and said spiral groove, said means being retained in engagement with said slot and groove as said valve is moved longitudinally in said valve body.

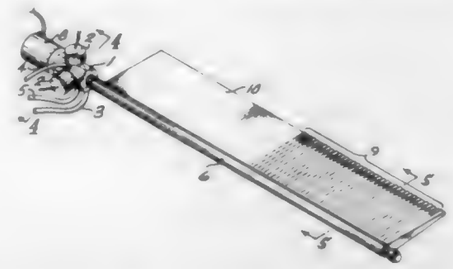
3,374,986
DEMOUNTABLE RAIL FENCE
Charles R. McElroy, Clarence, and Vincent J. Rossitto and Edward H. Robb, Buffalo, N.Y., assignors to Metal Cladding, Inc., North Tonawanda, N.Y.
Filed Feb. 2, 1967, Ser. No. 613,627
4 Claims. (Cl. 256—59)



A demountable rail fence wherein a series of upright posts having T-shaped upper ends and tubular horizontal rails are each notched at one end so that the other end may be slipped over a T projection of one upright post and the notched end may be snapped laterally over the opposed T projection of the next adjacent upright post.

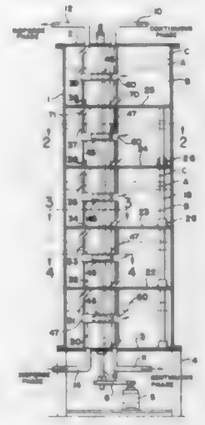
3,374,987
ADHESIVE MIXER-APPLICATOR FOR USE WITH FAST CURING ADHESIVES
Rudy E. Joyce, Earl D. Hasenwinkle, and Frank Wislocker, Longview, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Apr. 17, 1967, Ser. No. 631,397
8 Claims. (Cl. 259—7)

An adhesive mixer-applicator adapted to operate in a highly restricted space for substantially simultaneously mixing the components of fast curing adhesives and applying them to a moving surface. The apparatus is composed of a manifold having a series of distribution tubes connected at right angles to the manifold for delivery of adhesive to the moving surface to be bonded, means connected to the manifold for separately admitting adhesive



components to the manifold, and a rotatable shaft mounted within the manifold. The shaft is sized such that the adhesive passing between the clearance of the shaft and the inner wall of the manifold is subjected to high shear sufficient to cause turbulent mixing of the adhesive.

3,374,988
LIQUID-LIQUID CONTACTOR
John S. Eckert, Silver Lake, Ohio, assignor, by mesne assignments, to U.S. Stoneware Inc., a corporation of Massachusetts
Filed May 7, 1965, Ser. No. 454,075
8 Claims. (Cl. 259—8)



1. A liquid-liquid contactor which comprises (1) an outer shell and (2) an inner shell with a top, bottom and middle portion, with said middle portion divided into unitary sections capable of being inserted into and removed successively intact from the outer shell,

an agitator shaft extending through said middle portion,

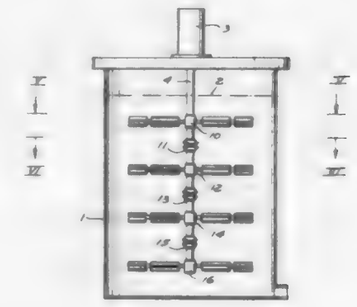
each section comprising a partition with a portion thereof within the inner shell which divides the section of the inner shell into upper and lower portions, the perimeter of the partition being sealed to the outer shell,

means which includes one opening in the partition connecting the space within the portion of the inner shell above the partition with the space below the partition which is between the inner and outer shells, and means which includes another opening in said partition connecting the space within the portion of the inner shell below the partition with the space above the partition between the inner and outer shells,

a diaphragm in each portion of the inner shell above and below the partition in each section, with an opening in each diaphragm occupied only in part by the agitator shaft,

an agitator fastened to the agitator shaft at approximately the junction line between each two sections and below the lower diaphragm of the upper of said two sections and above the upper diaphragm of the lower of these sections, with an opening through the inner shell in substantially the plane of the agitator.

3,374,989
METHOD AND DEVICE FOR PRODUCING UNIFORM DISPERSIONS
Erich Karl Todtenhaupt, Karlstrasse 8, Schopfheim, Baden, Germany
Filed Dec. 22, 1965, Ser. No. 515,648
Claims priority, application Dec. 29, 1964, T 27,724
5 Claims. (Cl. 259—107)

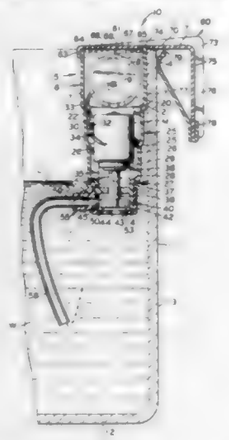


A uniform dispersion of subdivided material in a liquid is produced by confining a body of liquid which contains such subdivided material in an upright chamber of uniform unobstructed cross section throughout substantially the entire length thereof, and imparting to the subdivided material-containing body of liquid in the chamber in a plurality of superposed zones in radial and tangential direction a turbulent flow having in the axial direction of the chamber a component of movement of such strength as to cause intrusion of liquid from the respective zones into adjacent zones so as to create in the liquid of such adjacent zones eddy currents resulting in intimate mixing of the liquid and the subdivided material and information of a uniform dispersion; and a stirring device for carrying out the above process which comprises a single unobstructed upright chamber for the subdivided solids-containing liquid, with a shaft at least partially located and coaxial with the chamber, and a plurality of sets of stirring blades carried by the shaft within the chamber and located in the respective zones, whereby each of the sets of stirring blades comprises a plurality of blades respectively extending transversely of the shaft from the region thereof towards the periphery of the chamber and whereby consecutive blades in each set of blades are oppositely inclined with respect to an axial plane of the chamber, and each of the blades has a portion located in a common plane with a portion of a blade in an axially adjacent set and these portions of blades in adjacent sets are inclined to the common plane in mutually opposite directions.

3,374,990
AERATING APPARATUS
Richard L. Gray, Orrville, Ohio, assignor of one-half to Charles F. Herman, Orrville, Ohio
Continuation-in-part of application Ser. No. 372,941, June 5, 1964. This application Apr. 14, 1966, Ser. No. 542,500
3 Claims. (Cl. 261—29)

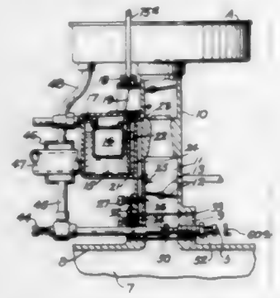
Apparatus for aerating liquid in a container constituting a housing enclosing a power supply, a motor, and an im-

peller having axial air and liquid inputs and a radial output with an extension discharging the fluids within the container liquid; and, a lid selectively attachable to the



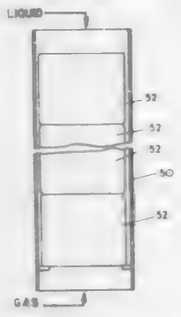
housing for detachably mounting it on the container and for insertion and removal of the power supply means.

3,374,991
CARBURETOR
Brooks Walker, 1280 Columbus Ave., San Francisco, Calif. 94133
Filed Mar. 12, 1965, Ser. No. 439,168
4 Claims. (Cl. 261—41)



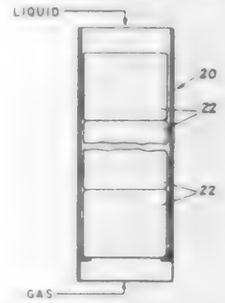
A carburetor for reducing the unburned hydrocarbons to reduce the smog producing components of an automobile engine exhaust. A conduit delivers a mixture of fuel and air to idle against a movable deflector near the center of the carburetor throat. Clean air is admitted when the deflector is moved against the end of the conduit to shut off the flow of fuel and air mixture.

3,374,992
GAS-LIQUID CONTACT APPARATUS
Kent Reaney Greer, Marple Bridge, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Mar. 4, 1964, Ser. No. 349,456
Claims priority, application Great Britain, Mar. 4, 1963, 8,611/63
8 Claims. (Cl. 261—112)



1. A gas-liquid contact unit for apparatus in which a gas stream contacts a film of liquid flowing as a film over the surfaces of a contact unit, said unit comprising:
alternate flat and corrugated sheets of rigid thermoplastic organic polymeric material stacked in contact, the corrugations of each corrugated sheet having apices forming lines of contact with the flat sheets;
all the corrugated sheets defining with all the flat sheets a plurality of passages all of which extend from one common face of the stack to the opposite face;
the corrugations in the corrugated sheets following a curved path over a minor proportion of their length such that a straight line through said passages is intercepted by said curved path of said corrugations.

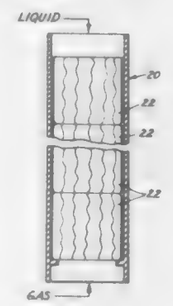
3,374,993
GAS-LIQUID CONTACT APPARATUS
Kent Reaney Greer, Marple Bridge, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Mar. 4, 1964, Ser. No. 349,457
Claims priority, application Great Britain, Mar. 4, 1963, 8,612/63
5 Claims. (Cl. 261—112)



1. A gas-liquid contact unit for apparatus in which a gas stream contacts a film of liquid flowing as a film over the surfaces of a contact unit, said unit comprising:
alternate flat and corrugated sheets of rigid thermoplastic organic polymeric material stacked in contact, the corrugations of each corrugated sheet having apices forming lines of contact with the flat sheets;
all the corrugated sheets defining with all the flat sheets a plurality of passages all of which extend from one common face of the stack to the opposite face;
the corrugations in the corrugated sheets being straight throughout their entire length so that the said lines of contact and the passages are similarly straight;
the said lines of contact on opposite sides of each of the flat sheets crossing each other so as to be coincident at the cross over points;
the stack being held together by attachments between the corrugated sheets and the flat sheets at least some of the positions where the lines of contact on opposite sides of the flat sheets are coincident.

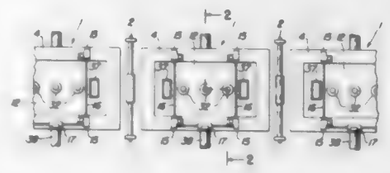
3,374,994
PACKING UNITS FOR GAS-LIQUID CONTACT APPARATUS
Kent Reaney Greer, Marple Bridge, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Continuation-in-part of application Ser. No. 211,377, July 20, 1962. This application May 4, 1966, Ser. No. 547,603
Claims priority, application Great Britain, Mar. 4, 1963, 8,612/63
6 Claims. (Cl. 261—112)

1. A gas-liquid contact unit for apparatus in which a gas stream contacts a film of liquid flowing as a film over the surfaces of a contact unit, said unit comprising:
alternate flat and corrugated sheets of rigid thermoplastic organic polymeric material stacked in contact, the corrugations of each corrugated sheet having apices forming lines of contact with the flat sheets;
all the corrugated sheets defining with all the flat sheets a plurality of passages all of which extend from one common face of the stack to the opposite face;
the corrugations in the corrugated sheets being curvilinear throughout substantially their entire length



so that the said lines of contact and the passages are similarly curvilinear;
the said lines of contact on opposite sides of each of the flat sheets being at least partially coincident; and
the stack being held together by attachments between the corrugated sheets and the flat sheets at at least some of the positions where the lines of contact on opposite sides of the flat sheets are coincident.

3,374,995
CONTINUOUS HEAT TREATING FURNACE
Eugene A. Cook, Jr., Montgomery County, Pa., assignor to Selas Corporation of America, Dresher, Pa., a corporation of Pennsylvania
Filed Dec. 20, 1965, Ser. No. 515,071
6 Claims. (Cl. 263—3)

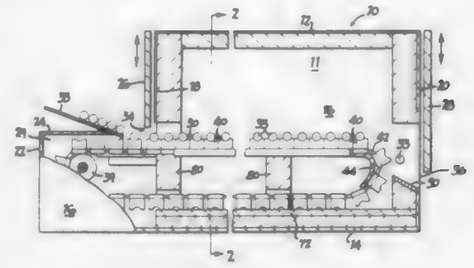


A barrel type furnace comprising a plurality of furnace units useful for heating structural steel shapes. The work is moved by a conveyor continuously through each unit, each unit having a chamber that is divided by the work into a plurality of substantially separate sub-chambers by the work. Burners firing into each sub-chamber can be individually adjusted to supply different amounts of heat to different portions of the work.

3,374,996
METHOD AND APPARATUS FOR CONVEYING WORKPIECES
William R. Keough, 124 S. Williamsbury, Birmingham, Mich. 48127
Filed Jan. 22, 1965, Ser. No. 427,422
11 Claims. (Cl. 263—8)

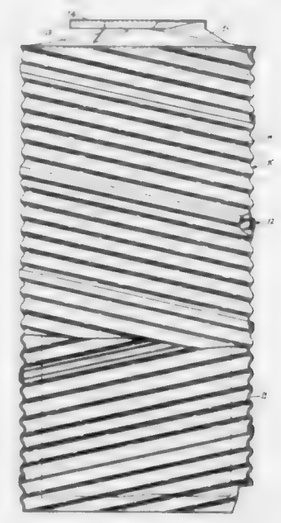
The invention includes conveyor apparatus for a heat treating furnace, the conveyor comprising a series of links interconnected loosely by separate tie members and looped around a driving means on the outside of the furnace and a stationary direction changing means on the inside of the furnace to provide a circulatory conveyor. The tie members are loosely disposed relative to the links so that the

links can be pushed along an upper skid structure in the material carrying phase of the conveyor movement with the links in surface-to-surface abutting relation and with the tie members exerting no driving force on the links. The links then pass around the stationary direction changing structure, and at this point the links separate from each



other and the tie members become engaged. The links are then pulled along a lower skid structure with driving force being transmitted from link-to-link by the tie members. The links thus travel through the work carrying phase of movement at one pitch, and travel through the return phase of movement at a different pitch.

3,374,997
ANNEALING COVER
Charles E. Stutenroth, Middletown, and Richard A. Wertz, Franklin, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed May 13, 1965, Ser. No. 455,554
3 Claims. (Cl. 263—49)

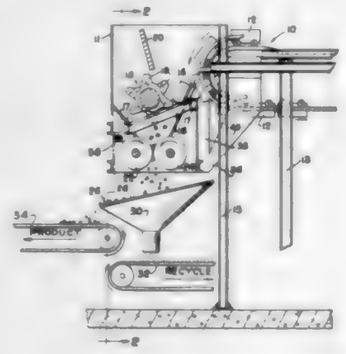


An inner cover which is placed over coils during box annealing in a single stack annealing furnace. The cover is cylindrical, vertically disposed and has helical corrugations to strengthen it. It is manufactured by corrugating stainless steel strip, continuously winding said strip helically, and joining the seams tightly together.

3,374,998
SINTER BREAKER AND ROLL CRUSHER
Harold T. Stirling, Pittsburgh, Pa., assignor, by mesne assignments, to Stirling Sintering Company, a corporation of Pennsylvania
Filed June 26, 1963, Ser. No. 290,717
2 Claims. (Cl. 266—21)

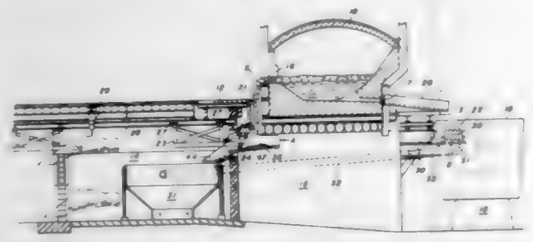
1. In combination, a sinter strand and a sinter breaker and roll crusher operatively associated with the discharge end of said sinter strand, said sinter breaker and roll crusher comprising a plurality of breaker bars, a rotatable

breaker wheel having radial arms thereon, said breaker wheel being so positioned that said radial arms pass between said breaker bars whereby sinter cakes falling from said sinter strand are broken into small pieces, a pair of rotatable crusher rolls beneath said breaker bars and positioned to receive between them and crush the small pieces of sinter passing through said breaker bars to form crushed sinter having a predetermined maximum size determined by the spacing between the crusher rolls, said crusher rolls being disposed in aligned parallel relationship and being adjustable towards and away from one another to adjust said maximum size, sizing means beneath said crushing rolls to receive crushed sinter therefrom and to remove material sized smaller than a predetermined size, a motor having a drive shaft, and a



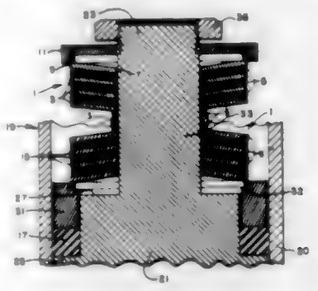
drive mechanism operatively associated with said motor to drive said breaker wheel and said crusher rolls, said drive mechanism comprising a relatively small pulley wheel attached to the drive shaft of said motor, a relatively large pulley wheel having a shaft extending therefrom, a pulley operatively associated with said pulley wheels to drive said relatively large pulley wheel, one of said crusher rolls being mounted on, and rotated by, said shaft, a first gear mounted on the far side of said shaft, a second gear interlocking with said first gear, a shaft extending from said second gear for driving the other crushing roll, a third gear interlocking with said first gear and having an intermediate shaft extending therefrom, a fourth gear on the far end of said intermediate shaft, a fifth gear interlocking with said fourth gear, and a shaft extending from said fifth gear for driving said breaker wheel.

3,374,999
SLAG-GRANULATING APPARATUS
Charles J. Burch, Lower Makefield Township, Bucks County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Dec. 17, 1964, Ser. No. 418,966
12 Claims. (Cl. 266—24)



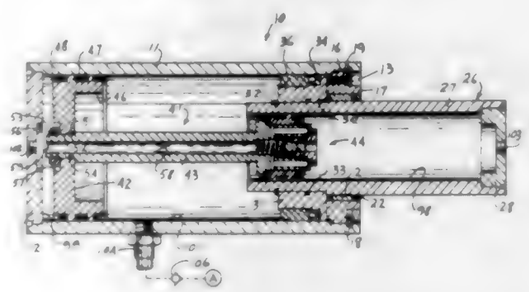
An apparatus for granulating slag from an open hearth furnace. Slag from the charging side of the furnace falls freely through a shell where water jets strike it and drive it into a surge tank. Slag from the tapping side travels through a runner beneath the furnace to the tank after water jets act on it.

3,375,000
BELLEVILLE SPRING ASSEMBLY
Robert E. Seamands, Moline, Ill., and Jimmy H. Williams, Bettendorf, Iowa, assignors to the United States of America as represented by the Secretary of the Army
Filed Jan. 4, 1966, Ser. No. 518,746
6 Claims. (Cl. 267—1)



An improved Belleville spring assembly is provided for a plurality of discs mounted in parallel, stacked array by disposing a bearing element between the inner and outer edges of adjacent discs thereby to reduce surface friction between the discs.

3,375,001
HYDROPNEUMATIC SPRING
Ransom J. Hennells, Plymouth, Mich., assignor to W. E. Hennells Company, Inc., Belleville, Mich., a corporation of Michigan
Filed May 4, 1966, Ser. No. 547,547
10 Claims. (Cl. 267—1)



1. A hydropneumatic die spring, comprising the combination:

an expandable first hydraulic chamber;

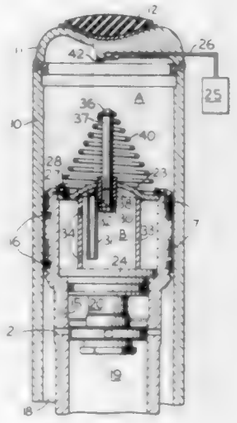
means defining a passage of reduced diameter extending from said first hydraulic chamber;

means defining a second expandable hydraulic chamber spaced along said passage from said first hydraulic chamber, said means defining said second hydraulic chamber being movable along said passage defining means toward said first hydraulic chamber for effecting contraction of said second hydraulic chamber and expansion of said first hydraulic chamber,

valve means disposed along said passage responsive to a preselected pressure drop from said second hydraulic chamber to said first hydraulic chamber for connecting said hydraulic chambers to each other and responsive to a drop of lesser magnitude in the opposite direction for placing said hydraulic chambers in communication with each other; and

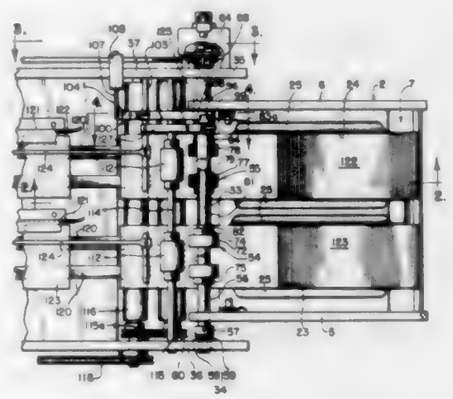
means defining a pneumatic chamber surrounding said passage defining means and disposed between said first and second hydraulic chambers, said pneumatic chamber being arranged for contraction upon movement of said second hydraulic chamber defining means toward the first hydraulic chamber.

3,375,002
VEHICLE SUSPENSION STRUT
Pearl L. Breon and Ralph H. Kress, Peoria, and Jackson C. Medley, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 1, 1965, Ser. No. 510,836
4 Claims. (Cl. 267—65)



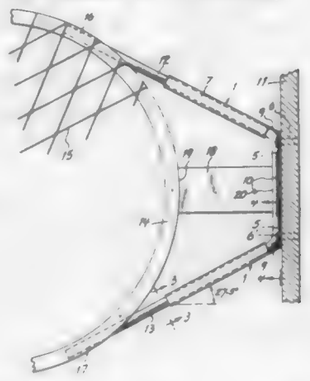
A suspension device for large vehicles having means for varying the stiffness or spring rate of a telescoping strut which utilizes air or gas as a cushioning means.

3,375,003
MULTIPLE FEEDER MECHANISM
Edward S. Godlewski, 531 Walnut St., Des Plaines, Ill. 62526
Filed Aug. 8, 1966, Ser. No. 570,944
10 Claims. (Cl. 271—9)



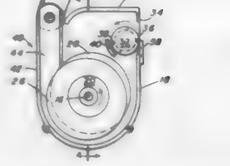
1. A plural feeding device comprising a plurality of side-by-side magazines each adapted to contain stock to be fed in synchronism to an associated receiving mechanism, a feed roller assembly associated with each magazine for discharging the stock therefrom item-by-item, common drive means for each said feed roller assemblies, clutch means between each feed roller assembly and said drive means for individually connecting and disconnecting the drive means thereto, pullout roller means disposed in grasping relation to stock items issuing from the respective feed roller assemblies, and means for declutching the clutch means to selected feed roller assemblies to permit free wheeling of said selected feed roller assemblies while the other of said assemblies continue to be driven whereby stock items not entirely discharged by the declutched feed roller assemblies are pulled out entirely by the pullout roller means while the clutched roller assembly is operating.

3,375,004
FOLD-UP BASKETBALL GOAL
John W. Ebstein, Roslyn Heights, N.Y., assignor to Gabriel Industries, Inc., New York, N.Y., a corporation of New York
Filed Dec. 15, 1965, Ser. No. 514,014
11 Claims. (Cl. 273—1.5)



1. A basketball goal comprising a pair of vertical spaced brackets, means for attaching the same to a backboard, a substantially horizontal tubular member along the top of each bracket, a substantially U-shaped rod held in said tubular members, and a hoop secured to the ends of said rod.

3,375,005
BALL THROWING MACHINE AND TARGET NET
Jay E. Cook, Ashland Road, Cockeysville, Md. 21030
Filed Aug. 17, 1965, Ser. No. 480,446
7 Claims. (Cl. 273—30)



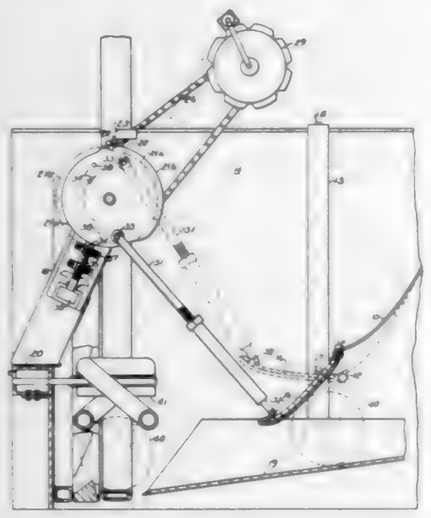
2. A ball gathering and projecting apparatus, comprising, a projector consisting of a flat hollow housing having a generally U-shaped internal configuration with a pair of side walls and rear and front walls, first motor means having a shaft extending into said housing, a rotor mounted on said shaft and arranged to fill the space between said sidewalls of said housing, a pair of flexible cheeks spaced slightly less than the diameter of a ball extending radially outward from said rotor and shaped eccentrically round at their peripheries, with one cheek of said pair of cheeks being mounted so as to extend its maximum point of eccentricity 180 degrees displaced around said rotor from that of the other cheek of said pair of cheeks, second motor means having a hollow cylindrical gate rotor immediately below an aperture formed in said front wall of said housing, said hollow cylindrical gate rotor having a pair of diametrically opposed apertures located therein, said housing having a curved guard attached to the interior thereof covering said pair of diametrically opposed apertures during a downward arc of their movement, said rearwall of said housing having upwardly divergent extensions of said sidewalls, with said extensions together with said rear wall forming a flaring upwardly extending rectangular nozzle, an open ended deflecting scoop means adjustably secured to the upper ends of said extensions and flared laterally in continuation of the flare of said nozzle, said scoop means having curved side walls and an arcuate top wall so as to direct said ball

when ejected into a desired trajectory which may be raised or lowered due to the adjustability of said scoop means, with the lateral flare of said scoop means permitting successive balls to emerge with considerable variations in azimuth, a table for mounting said projector, the rear area of said table being provided with a tapered mat having a central valley sloping into said aperture in said front wall, netting extending above three sides of said mat and across the front of said projector except for an opening through which the end of said scoop means protrudes, and a target pocket mounted in said netting.

3,375,006
MECHANICAL BACKSTOP FOR PIN SETTING MACHINES

Clyde F. Davis, Spokane, Wash., assignor to Quick Ball Return, Inc., Spokane, Wash., a corporation of Washington

Filed Aug. 12, 1965, Ser. No. 479,230
6 Claims. (Cl. 273—49)



1. A pit cushion assembly for an automatic pin and ball handling mechanism at the rear of a bowling alley, comprising:

a stationary framework;

a pit cushion on said framework extending transversely across the pit at the rear of a bowling alley, said cushion including a lower portion pivotally mounted on said framework about a horizontal transverse axis;

a member rotatably mounted on said framework about an axis parallel to said horizontal transverse axis;

linkage means operatively connected to said member and said lower portion of said pit cushion to initiate rotation of said member upon rearward swinging motion of said lower portion;

and drive means operatively connected to said member to continue to rotate said member about its axis, said drive means being responsive to initial rotational movement thereof caused by pivotal motion of the lower portion of said pit cushion thereby raising said lower portion to a ball passing position.

3,375,007
TABLE TOP FOOTBALL GAME

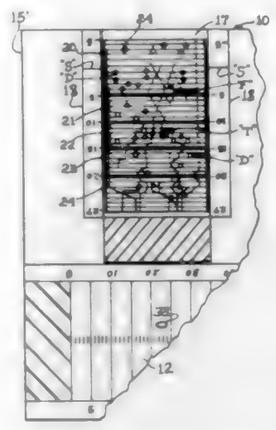
Joseph W. Meyer, 3850 N. Christiana Ave., Chicago, Ill. 60618

Filed Apr. 27, 1966, Ser. No. 545,741
7 Claims. (Cl. 273—94)

1. A table top football game for competitive playing between a designated offensive player and a defensive player comprising

(a) a plurality of transparent play cards each schematically illustrating a different type of offensive play,

(b) a set of defensive coordinate members each provided with a plurality of areas and each area having different defensive-position indicia thereon,

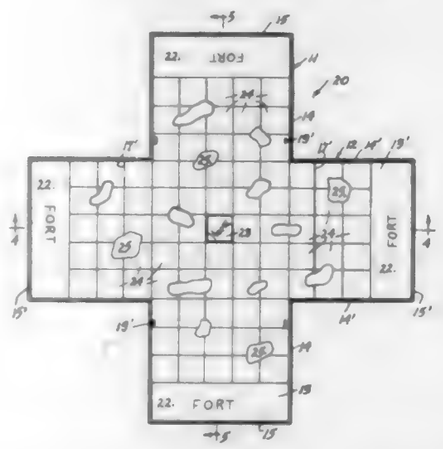


(c) means supporting each coordinate member for movement whereby each member may selectively display only a selected one of said areas at a time, said set of coordinate members being positioned in side by side relation, said set of coordinate members collectively providing a play card receiving area which when the areas of each coordinate member are in coplanar alignment supports a selected play card thereon with the defensive position indicia on each of said defensive coordinate members visible through said offensive play card to illustrate the results of the chosen offensive play and the selected defense thereto.

3,375,008
GAME WITH CRUCIFORM GAMEBOARD WHICH CONVERTS TO GAMEPIECE CONTAINER

Wallace E. Atkinson, R.F.D. 3, Box 362 B11, Petersburg, Va. 23803

Filed Aug. 12, 1965, Ser. No. 479,082
5 Claims. (Cl. 273—101)

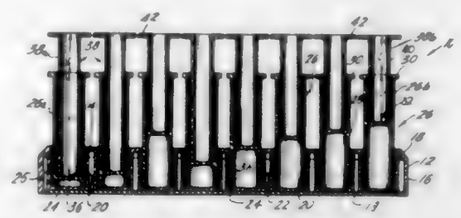


An elongated box consisting of two box members each including a panel with perpendicular side and end walls. Intermediate portions of the side walls are swingable into coplanar relation with the panel to form recesses which permit one box member to be placed across the other to provide a cruciform gameboard with upstanding perimetric walls. Game pieces movably positioned on the gameboard are intended to be shot at by opposing players using hand-held guns.

3,375,009
PEG LEVELING GAME

Albert Stubbmann, New Hyde Park, and Frank Kohner, New York, N.Y., assignors to Kohner Bros., Inc., East Paterson, N.J., a corporation of New York

Filed Sept. 16, 1965, Ser. No. 487,806
9 Claims. (Cl. 273—156)

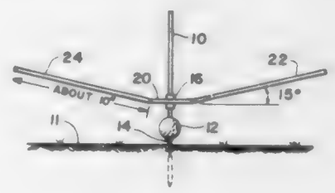


1. A peg leveling game including a game board with a group of upwardly opening primary wells therein, a set of base pegs of a number equal to the number of primary wells, each base peg having a lower section snugly removably interchangably received in any one primary well so as to support the base peg in vertically erect condition, a group of upwardly opening secondary wells one in each base peg, and a set of upper pegs, each upper peg having a lower section snugly removably interchangably received in any one secondary well so as to support the upper peg in vertically erect condition, one group of wells each having the same depth and the other group of wells each having a depth different from one another, one set of pegs being all of like external dimensions including their lengths and the other set of pegs being of like external dimensions but being of lengths different from one another, the pegs of the set of pegs receivable in the wells of different depths being each of a different length such that when selected upper pegs are nested within certain pegs and said corresponding base pegs are received in certain primary wells, the tops of the upper pegs will lie in the same horizontal plane.

3,375,010
GOLF SWING TRAINING DEVICE

Albert E. Panza, 1512 Middle St., Sharpsburg, Pa. 15215

Filed May 14, 1964, Ser. No. 367,363
1 Claim. (Cl. 273—186)

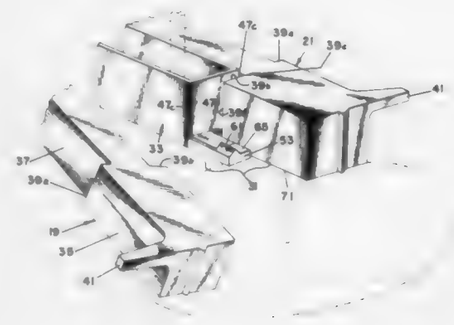


1. A golf training and practice device comprising an elongated first rod-like member adapted to be vertically positioned on the side of a golf ball opposite a golfer about to strike the ball with the head of a golf club, an elongated rod-like second member secured to said first member at right angles thereto and arranged to project horizontally outwardly toward and above said golf ball when the first member is in a vertical position, said second member being adjustable along the length of said first member, a third member having a first generally C-shaped section connected at its midpoint to the end of the second member opposite said first member and having its parallel legs arranged to point toward the golfer in a generally horizontal plane, and rod-like sections connected to the ends of said legs and respectively adapted to project beyond and behind a golf ball in the path of the club head in striking the ball, said last-mentioned rod-like sections being inclined upwardly from their points of connection to the ends of said legs at an angle of about 15° with respect to the horizontal, the last-mentioned rod-like sections both being about ten inches in length and the span of the C-shaped section between said parallel legs being about four inches.

3,375,011
DUAL DETENT MECHANISM FOR A PORTABLE RECORDER-REPRODUCER

Jack L. Kelly and Ronald K. Wiandt, Decatur, Ill., assignors to General Electric Company, a corporation of New York

Filed Jan. 25, 1967, Ser. No. 611,711
8 Claims. (Cl. 274—23)

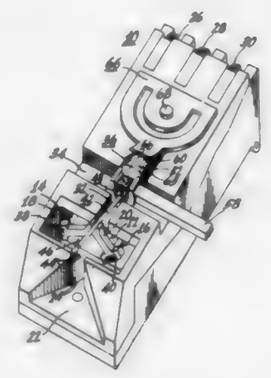


A detent mechanism for a recording and reproducing device, which involves the resilient cooperation of a single detent element with a recording arm and a playback arm.

3,375,012
PHONOGRAPH PICKUP DEVICE

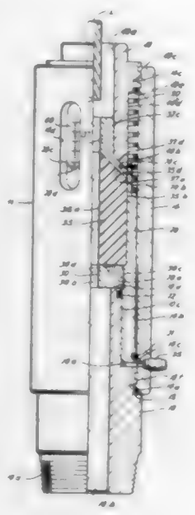
David E. Laux and Jack M. White, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware

Filed Jan. 22, 1965, Ser. No. 427,259
6 Claims. (Cl. 274—37)



The stylus arm of a phonograph pickup extends from a damping block of a resilient material. The damping block is positioned in a channel opening in a turnover type receptacle. The side and bottom walls defining the receptacle opening restrain vertical and lateral movement of the block when the pickup is in its 33 or stereo mode of operation, and restrain substantially only lateral movement of the block when the pick-up is in its 78 or mono mode of operation.

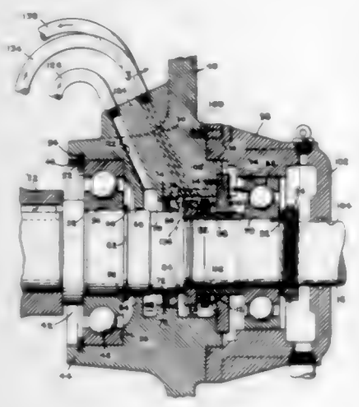
3,375,013
FLUID-ACTUATED WIPER APPARATUS
Charles A. Grantom, Houston, Tex., assignor to King Oil Tools, a corporation of Texas
Filed Sept. 20, 1965, Ser. No. 488,673
3 Claims. (Cl. 277—2)



A fluid-actuated wiper apparatus wherein a resilient annular wiping element is confined on the outside by a piston before and during compression, and wherein the housing is a substantially cylindrical sleeve with threaded connections at its upper and lower ends to provide ready accessibility of all parts for replacements or repair.

Various efforts have been made in the past to provide wiping or stripper apparatus. See, for example, United States Patents Nos. 2,559,321; 2,927,638; 3,013,825; and 3,129,009.

3,375,014
SEAL ASSEMBLY
Donald E. Chubb, Caldwell, N.J., Angelo C. Giurlando, Muskego, Wis., and Raymond E. Rayner, Colonia, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Feb. 9, 1966, Ser. No. 526,119
10 Claims. (Cl. 277—3)



5. A mechanical seal for a rotatable shaft extending into a housing comprising:

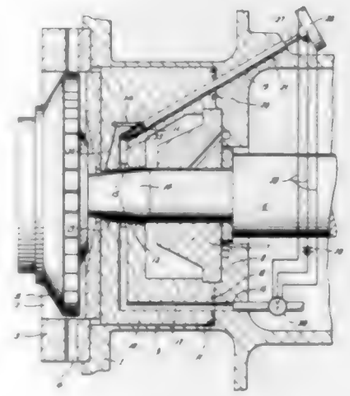
(a) two axially spaced sealing members mounted between the housing and the shaft;

(b) an annular chamber formed in the housing between the sealing members;

(c) an inlet port and an outlet port in the chamber for circulating lubricating oil through the chamber when the shaft is rotating, the inlet port being circumferentially spaced a relatively short distance from the outlet port in the direction of rotation of the shaft; and

(d) a longitudinally extending inwardly projecting baffle in the chamber between the inlet and the outlet ports to prevent oil flow directly from the inlet to the outlet port.

3,375,015
SHAFT SEAL EMPLOYING SEAL GAS WITH MEANS FOR INDICATING PROPER FLOW THEREOF
Judson S. Swearingen, 500 Bel Air Road, Los Angeles, Calif. 90024
Filed Sept. 30, 1966, Ser. No. 583,186
9 Claims. (Cl. 277—3)

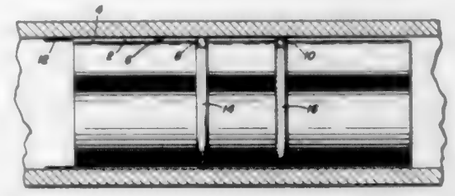


1. In combination with a shaft, a wall having an opening therein through which said shaft extends, and a seal arrangement for preventing leakage of a retained gas from one side of said wall to the other through a clearance between said shaft and said wall, comprising means for introducing into the clearance between the ends of the opening a seal gas at a temperature different from that of the retained gas to seal the clearance against leakage of the retained gas therethrough, the improvement which comprises a temperature sensing device, and means responsive to a pressure differential between the retained gas and the seal gas at the point of its entry into said clearance to subject the sensing device to the effect of the temperature of either one of said gases having the greater pressure, whereby inadequacy of the pressure of the seal gas to prevent leakage of the retained gas will be shown by a temperature indication closer to the temperature of the retained gas and such predominance of the pressure of the seal gas as would cause flow thereof toward the retained gas will be shown by a temperature indication closer to the temperature of the seal gas.

3,375,016
TWO-STAGE SEAL ARRANGEMENT
John Jellinek, Washington, D.C., and Louis B. Weckesser, Jr., College Park, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 9, 1964, Ser. No. 350,624
4 Claims. (Cl. 277—58)

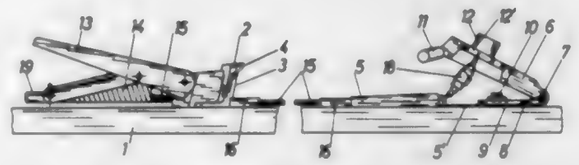
1. In combination with a pair of concentric members having a circumferential clearance therebetween, a two-stage sealing arrangement, comprising

a sealing ring in said clearance, said sealing ring having a coefficient of thermal expansion substantially greater than that of either of said members and being heat expandible into sealing engagement with each of said members by heat dissipating from a heated fluid flowing through one of said members and providing a permanent seal against the flow of the heated fluid through said clearance, and



an elastomeric sealing ring in said clearance and initially sealing against flow of said heated fluid therethrough until said heat expandible ring sealably engages each of said members.

3,375,017
SKI BINDING
Friedrich Beier, Gratschenwinkelweg 25, Kurort Igls, Tirol, Austria
Filed Nov. 22, 1966, Ser. No. 596,322
Claims priority, application Austria, Nov. 26, 1965, 10,648/65
4 Claims. (Cl. 280—11.35)



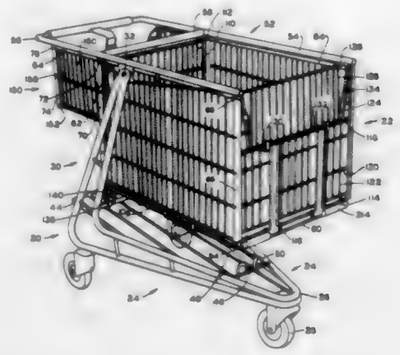
1. A ski having a longitudinal axis and comprising a fixedly supported toe rest, a clamping lever pivotally supported forwardly of said toe rest, a fixed heel rest rearwardly of said toe rest and adapted to support the heel of the boot with the toe of the latter in contact with the toe rest, a guiding plate supported for free longitudinal displacement rearwardly of said heel rest, a clamping jaw supported on said guiding plate for pivotal movement towards and away from said heel rest for contacting the heel of a boot supported thereon, said clamping jaw having an initial position inclined upwardly and forwardly on said ski, a cable extending from said clamping lever to said clamping jaw for pivotally moving the latter and concurrently displacing the guiding plate upon pivotal movement of the clamping lever, said cable passing under the toe rest and heel rest and then passing beyond the heel rest directly to the clamping jaw along a substantially straight line, said cable being secured to the clamping jaw, and a spring to exert a force on the clamping jaw to displace the same away from said heel rest when the clamping lever is pivotally moved; said guiding plate, apart from said free longitudinally displacement, being also supported for rotation in a plane substantially parallel to the running surface of the ski.

3,375,018
PARALLELOGRAM CART
Garth Close, Lubbock, Tex., assignor to United Steel and Wire Company, Battle Creek, Mich., a corporation of Michigan
Filed June 15, 1966, Ser. No. 557,809
28 Claims. (Cl. 280—33.99)

28. A wheeled cart comprising:

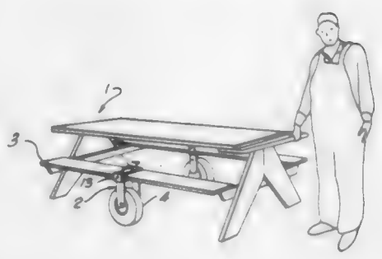
a nestable frame and a plurality of wheels supporting same;

a basket supported by said frame above said wheels, said basket having end walls and further having side walls; comprised of members articulated to permit parallelogrammed collapsing of said side walls of said basket, the collapsed basket occupying a zone primarily between said wheels;



whereby frames of successive ones of such wheeled carts are adapted for nesting while the collapsed baskets thereof pack one against the next.

3,375,019
WHEEL DEVICE FOR MOVING PICNIC TABLES
Patrick F. O'Day, P.O. Box 867, Bridgeport, Wash. 98813
Filed May 5, 1966, Ser. No. 548,364
5 Claims. (Cl. 280—47.32)



1. A wheel device for moving picnic tables comprising:

(a) a vertically adjustable, elongated clamp;

(b) a clamp locking member secured to said clamp;

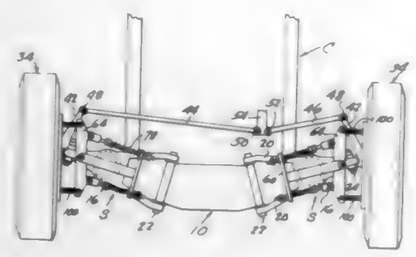
(c) a vertically adjustable support secured at an end thereof to said clamp and extending downwardly therefrom; and

(d) a wheel rotatably mounted on said support at an end opposite said clamp, said wheel disposed so that the axis of rotation thereof is parallel to the long axis of said clamp member.

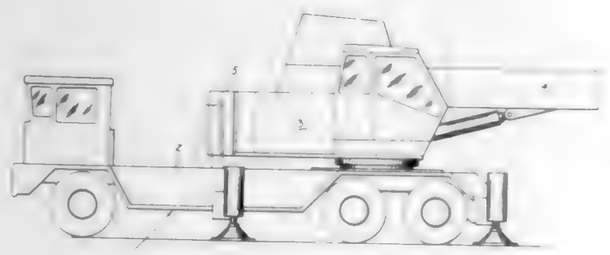
3,375,020
STEERING GEAR STABILIZERS FOR KNEE-ACTION MOUNTED WHEELS
Lester A. Worsham, P.O. Box 559, Cedartown, Ga. 30125
Filed June 10, 1966, Ser. No. 556,720
9 Claims. (Cl. 280—96.2)

For use with vehicles having a chassis with a cross member extending widthwise of and connected to said chassis, said cross member having a wheel backing member pivoted adjacent one end thereof for steering movement relative to said cross member; a stabilizer comprising a base member secured to said cross member inwardly from said wheel backing member and having at least a portion extending outwardly from the connection; an arm

substantially medially pivoted to the outer end of said base member; rods pivoted adjacent the ends of said arm and slidably received in the inner end of said base member; compression springs on said rods mounted to resist tilting of said arms about said pivot and tension springs connecting said arm to said wheel backing member.



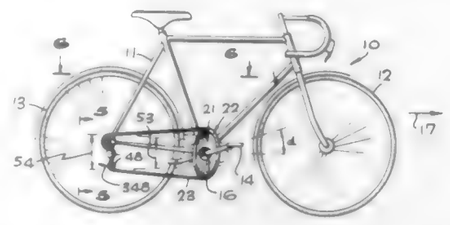
3,375,021
COUNTERWEIGHT REMOVAL DEVICE
Lyle D. Grider, New Berlin, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed May 20, 1966, Ser. No. 551,606
3 Claims. (Cl. 280—150)



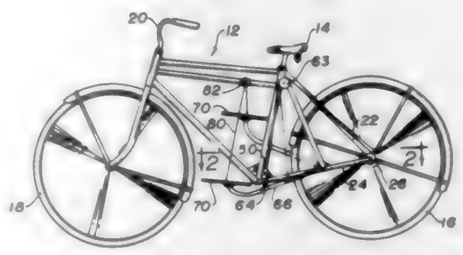
A transit crane includes a working frame with a counterweight removably mounted at the lower rear edge thereof. A pair of levers are vertically pivotally mounted intermediate their ends at the rear of the frame, and have their upper ends releasably connected to the counterweight. A pair of double acting hydraulic cylinders are connected and operable between subframe units and the lower ends of the levers to pivot them between a generally vertical, mounted position in which the counterweight is raised and against the frame and a generally horizontal, dismounted position in which the counterweight is lowered and removed from the frame. The points of connection of the levers to the counterweight are above and slightly forward of the points of connection of the levers to the frame when the counterweight is mounted to have an over center effect, and the levers have extensions which extend forwardly when the counterweight is mounted and are releasably connected to the frame to lock the counterweight in place.

3,375,022
DRIVES FOR BICYCLES
Mark Hattan, Pasadena, Calif., assignor of one-fourth to William P. Green, Pasadena, Calif.
Filed Dec. 14, 1965, Ser. No. 513,699
16 Claims. (Cl. 280—238)

A bicycle drive having an elliptical main pedal driven sprocket wheel carrying a correspondingly elliptical and slightly oversized deflector at the outer side of the sprocket wheel, with the teeth of the sprocket wheel having camming surfaces for camming an engaged chain laterally outwardly, while the deflector has a camming surface for deflecting the chain in an opposite laterally inward direction.

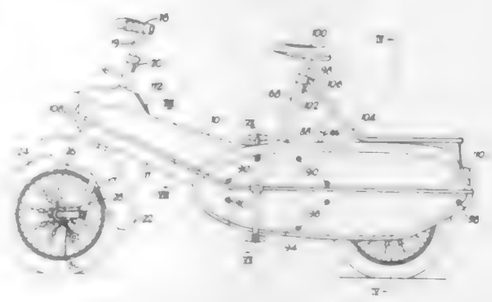


3,375,023
VELOCIPEDE DRIVING APPARATUS
James W. Cox, P.O. Box 193, Upper Lake, Calif. 95485
Filed Nov. 12, 1965, Ser. No. 507,419
1 Claim. (Cl. 280—251)



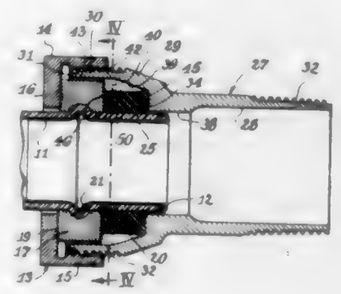
A pedal operated drive system for wheeled vehicles wherein the pedals are mounted on levers constrained for alternate pivotable movement. A drive train including a pair of over-running clutches for transmitting the pivotable movement of the levers to unilateral torque at the vehicle wheel.

3,375,024
BICYCLE FRAME
Benjamin George Bowden, Export, Pa., assignor to Mary Nora (Noreen) Bowden
Filed Feb. 8, 1966, Ser. No. 525,885
8 Claims. (Cl. 280—281)



A bicycle having a frame which includes an elongated upper member of inverted U-shaped cross section. A front wheel assembly including the wheel fork and steering post is supported in the front end of the upper frame member, and a mechanism unit is secured within the U-shaped upper frame member near its center. The mechanism unit has a separate housing and mounts therein a drive sprocket, a saddle post and a horizontally extending torsion bar. A rearwardly extending rear wheel suspension fork is carried by the torsion bar and a rear wheel and sprocket are mounted in the rear end of the suspension fork. Lower frame members extend across between the edges of the U-shaped upper frame member at the part of the frame located forwardly of the mechanism unit and downwardly from the rear part of the frame to enclose the mechanism unit and partially enclose the rear wheel.

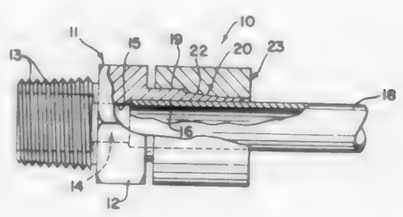
3,375,025
FITTINGS AND COMBINATIONS OF CONDUITS THEREWITH MAKING OR ADAPTED TO MAKE FLUID-TIGHT SEALS THEREWITH
Edward G. Engel, Westfield, N.J., assignor to Yara Engineering Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed July 15, 1964, Ser. No. 382,909
7 Claims. (Cl. 285—15)



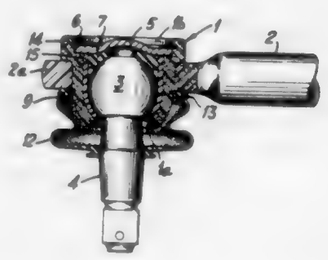
1. A combination comprising a pressure-deformable synthetic resinous plastic conduit, rigid sleeve first means located in one end of said conduit, rigid circumferential second means extending around said conduit and said first means, one of said means having a circumferential recess, a portion of said conduit being in said recess, said portion having a recess, the other of said means including a circumferential part disposed in said second mentioned recess, pressure-deformable rubbery resilient third means extending around said conduit and said sleeve, a body member and a member operatively connected with said body member, said third means disposed between a face of one of said means and a face of one of said members, one of said members being axially movable with respect to the other to reduce the distance between said faces thereby to apply axial pressure of at least 50 pounds per square inch to said third means to store sufficient energy therein that said third means will exert sufficient pressure on said conduit to provide effective sealing, said first and second means cooperating with each other to maintain said part in said second mentioned recess to prevent substantial axial movement of said end of said conduit with respect to said first and second means.

3,375,026
TUBE COUPLING
Zoltan Szohatzky, Mentor Township, Ohio, assignor to Crawford Fitting Company, Solon, Ohio, a corporation of Ohio
Filed Oct. 21, 1965, Ser. No. 499,433
1 Claim. (Cl. 285—322)

A wedge type tube coupling for miniaturized tubing. The coupling comprises a body member having a fluid passageway therethrough. A longitudinally extending gripping element integral with said body member is defined by an external tapered surface extending from the body to a free end of the gripping element. Adjacent the gripping element there is defined an external circular cylindrical surface. A circular cylindrical bore is defined in the gripping element to receive a tube. An annular coupling member is disposed about the tube. The annular coupling member is defined by a circular cylindrical bore having a diameter substantially equal to the outside diameter of the tube plus twice the transverse thickness of the free end of the gripping element. The annular coupling member is also defined by a counterbore having a diameter substantially equal to the diameter of the external circular cylindrical surface of the body. A tapered mouth portion is defined in the annular coupling member interconnecting the counterbore with the bore. Upon advancement of the coupling member over the external cylindrical surface of the body, mating engagement of the tapered surface of the body and the tapered mouth portion of the annular coupling member takes place to thereby deform the gripping element into engagement with the exterior of the tubing. Since the length of the tapered mouth portion of the annular coupling member is less than the length of the tapered surface of the body, full advancement of the coupling member over the external cylindrical surface of the body will cause the free end of the gripping element to be received within the bore of the annular coupling member.



3,375,027
UNIVERSAL JOINT CONSTRUCTION HAVING HOUSING OF EPOXY RESIN
Jürgen Ulderup, Bergstrasse, Lemforde, Hannover, Germany
Filed Mar. 24, 1965, Ser. No. 442,427
Claims priority, application Germany, Apr. 24, 1964, U 10,676
5 Claims. (Cl. 287—90)



The construction of a universal joint is disclosed herein in respect to a single embodiment. The universal joint includes a housing forming a socket for supporting a hinge pin for universal pivotal movement. The universal joint is provided for connecting steering linkages as well as axle and guide elements of motor vehicles, and in accordance with the invention the housing is formed of an epoxy resin material to which hardeners have been added, that is, chemical substances which are connected with the epoxy resin as a reaction partner by poly-addition or by polymerization into a high molecular spatially cross-linked state. In addition to the chemical hardners, fillers are added to the epoxy resin in order to improve the mechanical properties of the end product such as the

hardeners, the abrasion resistance and thermal resistance. For such purpose, mineral materials such as quartz or ground shell, chalk, sand and materials in fiber form such as glass fibers are added.

In accordance with a further feature of the invention, the housing is formed with an annular indentation in order to provide a support for a ring member which tightly secures a linkage member around the housing in a position against a shoulder formation at the top thereof. In addition, the annular ring member supports one end of a boot seal which is engaged at its opposite end around the body portion of the hinge pin of the universal joint.

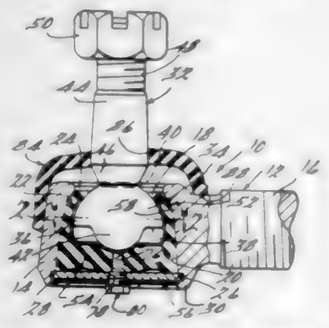
The universal joint housing produced in accordance with the invention is characterized by high mechanical strength and is thus excellently suitable for replacing conventional steel housings or plastic housings which have been reinforced by metal inserts. The housings also provide excellent resistance to grease and other harmful substances. It may be cast and will have a characteristic of high stability in dimension and form.

3,375,028

BALL JOINT FOR TIE ROD OR THE LIKE

De Lane D. Patton, Worthington, Ohio, assignor to Columbus Auto Parts Company, Columbus, Ohio, a corporation of Ohio

Filed June 24, 1965, Ser. No. 466,771
13 Claims. (Cl. 287—90)



A flexible joint construction comprising a housing section having an open end cavity defining a frusto-conical shaped side wall; a stud member extending through the opening in the housing section and having a head section located within the cavity, the head section comprising first and second hemi-spherical portions; a seat member disposed within the cavity and having a lower section having a central hemi-spherical recess complementary to and adapted to receive one of the portions of the head section, the seat member also comprising an upwardly extending wall section interposed between the head section of the stud member and the side wall of the housing section; the side wall including a pair of radially spaced spherical surface portions defined by radial lines having their centers located at axially spaced positions within said cavity, the seat member being formed with a plurality of grooves for retaining lubricant adjacent the head section of the stud member.

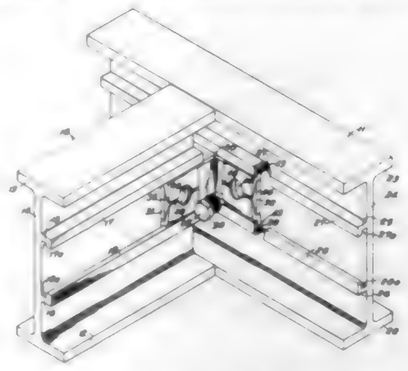
3,375,029

MEANS FOR CONNECTING STRUCTURAL MEMBERS

John S. Frye, 3098 Trafalgar, Chamblee, Ga. 30005, and James B. Fuss, 3245 Enon Road, College Park, Ga. 30022

Filed Dec. 22, 1966, Ser. No. 603,985
8 Claims. (Cl. 287—189.35)

A means for connection structural members of the type utilized to connect together I-beams, or similar structural shapes, in a single plane. The members to be connected together include a pair of holding members. The connector comprises an L-shaped bracket adapted to have its legs positioned between the grooves of adjacent structural shapes, and a pair of expanding locking elements adapted



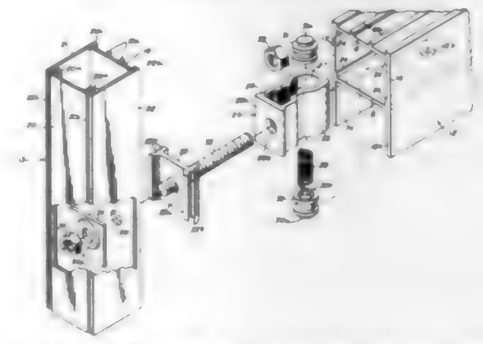
to connect a leg of the bracket to the grooves of each structural shape.

3,375,030

JOINT CONSTRUCTION FOR DOORS, WINDOWS AND THE LIKE

Alex S. Thompson, Irving, Tex., assignor to Southern Extrusions, Inc., Magnolia, Ark., a corporation of Arkansas

Filed Nov. 6, 1964, Ser. No. 409,401
11 Claims. (Cl. 287—189.36)



1. A construction for joining two frame members in rigid angular relation comprising, in combination, a first frame member having a box section wtih an inside web wall, an outisde web wall and spaced side walls, said inside web wall having a stud receiving aperture therethrough, said spaced side walls projecting in spaced relation outward of said inside web thereby leaving a recess in said first frame member, a second frame member having a box section with an inside web wall, an outside web wall and spaced side walls for abutting contact with the respective side walls of the first frame member, said web walls of the second frame member having apertures therethrough for receiving bushing members therein, a block assembly received in said second frame member box section and having a housing member narrower than the distance between said side walls and having a bore therethrough, a compression spring in the bore and a bushing in each end of the bore received in said apertures in the web walls of the second frame member as the compression spring urges said bushings outwardly of the housing thereby positioning sad housing member for pivotal movement, said housing having means for securing a stud thereto; a stud received in said securing means and projecting outward of said box section for reception by said aperture in the first frame member; an apertured stabilizer block slidably received over said stud and having a portion received in said recess in the first frame member between said projecting side walls and a portion received in said box section of the second frame member whereby the end of the second frame member is closed, said second frame member on receiving the bushings in the apertures in its webs being totally closed by its webs and side walls; and

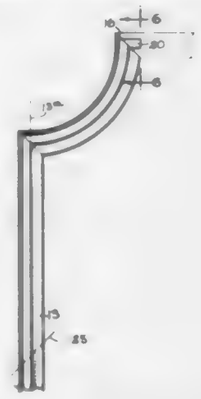
means received on said stud within the box section of the first frame member and applying tightening pressure between the stud and the inside face of the inside web of said member for securing said frame members in aligned abutting rigid angular relation.

3,375,031

ORNAMENTAL TRIM FOR DOOR PANELS

Carl J. Dargene, Rockford, Ill., assignor, by mesne assignments, to Amerock Corporation, Rockford, Ill., a corporation of Connecticut

Filed Aug. 26, 1965, Ser. No. 482,694
1 Claim. (Cl. 287—189.36)



1. A trim assembly for attachment to panels, comprising, in combination, a plurality of trim strips adapted to be joined together to form the trim assembly and having first and second ends of the same width and extending in substantially parallel directions, each of said strips including a straight section extending from the first end thereof and being of the same width along a predetermined length forming the longitudinal axis of the strip, said strip first and second ends being beveled at complementary angles to the strip longitudinal axis for forming a right angle corner when the strips are joined first end abutting a second end of an adjoining strip, each said strip having a corresponding side adapted to abut the panel for attachment thereto with a uniform undercut cross-sectioned groove in said one side running longitudinally along the strip straight section and opening into said beveled first end, a tab extending from said beveled second end at right angles to the strip longitudinal axis and positioned to interfit within a groove to form a flat, continuous surface with the back of the strips; when the strips are joined, first end abutting a second end of the adjoining strip, and said tab having a cross-section complementary to the cross section of the groove and a lateral width substantially greater than its front to back depth and fit therein with a snug but removable fit whereby said strips can be cut to length by severing the straight portion at any point at an angle complementary to the angle of the second end and thereafter be interlocked together to form a trim assembly by inserting said tabs in said grooves as the strips are joined with the first and second ends abutting to hold said strips together while the strips are attached to a panel.

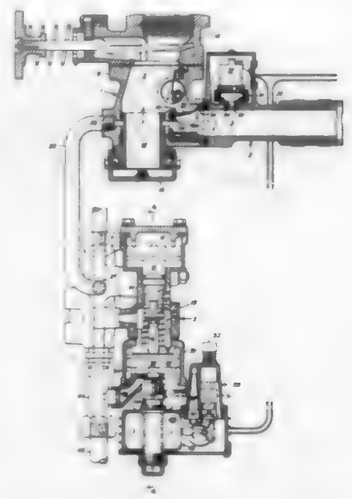
3,375,032

FLUID ACTUATED LOCOMOTIVE SANDING SYSTEM

Virgil L. Frantz, Salem, Va., assignor to Graham-White Sales Corporation, Salem, Va., a corporation of Virginia

Filed Nov. 27, 1963, Ser. No. 326,449
10 Claims. (Cl. 291—12)

1. A sanding system comprising a sander, a discharge pipe connected to said sander for receiving sand therefrom, means for sensing a clogging condition in said pipe, means responsive to said sensing means for applying air under high pressure to said pipe to remove said condition, and means for cutting off said air after a predetermined interval.



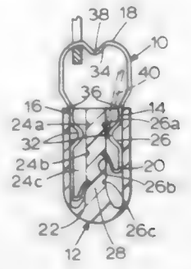
6. A sanding system comprising a sander, a discharge pipe connected to said sander for receiving sand therefrom, a control valve, a differential piston in said valve shiftable from a position to cut off air to said pipe alternately to positions to apply high pressure clean-out and low pressure sanding air to said pipe, an override piston connected to said valve and operable to override the setting of and shift said differential piston from sanding to clean-out position, a pressure sensitive switch for sensing a clogging condition in said pipe, a solenoid valve in circuit with and responsive to said sensing switch for operating said override piston, and by shifting thereby of said differential piston to clean-out position applying clean-out air to said discharge pipe to remove said condition, and thermal switch means in the circuit of said switch and solenoid valve for breaking said circuit after a predetermined interval and thereby cutting off said clean-out air application to remove said condition.

3,375,033

PADLOCK-TYPE SEAL WITH ANTI-TAMPERING MEANS

Sigurd M. Moberg, East Orange, N.J., assignor to E. J. Brooks Company, Newark, N.J., a corporation of New Jersey

Filed May 9, 1966, Ser. No. 548,493
2 Claims. (Cl. 292—320)



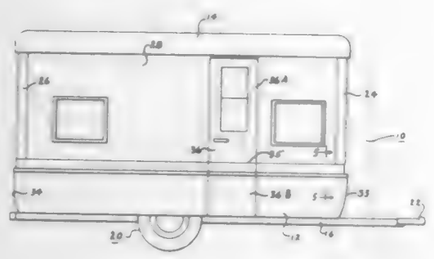
A padlock-type of seal includes a U-shaped shackle of stiff, spring-steel wire, having ends fixed to and held within a housing when the seal is locked. An external loop portion of the shackle includes two approximately quarter-circular portions adjoining each other at an inwardly extending, sharply-reversely bent portion of the shackle located approximately midway of the opposite limits of the loop portion to localize bending at said reversely bent

portion and induce breakage at the latter portion upon an attempt to pull the shackle from the housing. Further assurance that such breakage will occur may be achieved by providing a weakening score in the shackle at the sharply-reversely bent portion.

3,375,034
PIPE-PULLING TOOL
William H. Blackshear, Mineral Wells, Tex.
(P.O. Box 42, Garner, Tex. 76042)
Filed Nov. 3, 1966, Ser. No. 591,736
5 Claims. (Cl. 294—86.24)

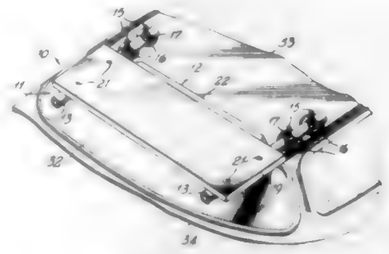
1. A pipe-pulling tool comprising, in combination, a head member having a hole therein, a radio receiver within said hole, an elongated cylinder extending downwardly from the bottom portion of said head member and cooperating with said hole, an intake and exhaust valve secured to the bottom portion of said receiver and electronically activated by it, an elongated air channel unit having a plurality of perforations therein secured within said cylinder, friction grips comprising a manifold enclosing said air cylinder and being adapted to expand and collapse in accordance with the supply of air and withdrawal thereof through perforations of said channel unit activated by said valve, and a centering cone secured to the bottom portion of said friction grip units and said air cylinder.

3,375,035
FOLDABLE TRAILER
Harold B. Schultz, 1820 E. Colfax,
South Bend, Ind. 46617
Filed Nov. 26, 1965, Ser. No. 509,985
5 Claims. (Cl. 296—27)



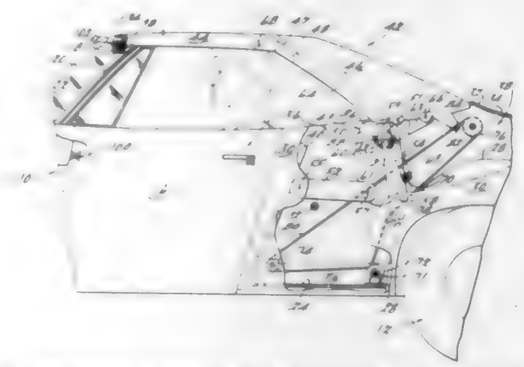
A trailer having a body, a top adapted to be raised from and lowered onto the body. Walls are pivoted to the upper edges of the body, and a spring means including torsion bars is used to assist in raising the pivoted walls when the top is raised. In practice, the pivoted walls would normally be the end walls of the trailer.

3,375,036
WINDSHIELD WEATHER VISOR
John P. Francis, 20 Boston St., Haverhill, Mass. 01830
Original application Jan. 3, 1966, Ser. No. 518,484. Divided and this application Dec. 13, 1966, Ser. No. 619,095
2 Claims. (Cl. 296—95)



This invention provides weather protection to the windshield of an automobile when the vehicle is in a parked position. The removably attached rain visor panel, and the removably attached longitudinally disposed visor supports with the attached roof engaging means, may be removably attached as a complete unit, or in part, to or from the roof top of the automobile. The rear laterally disposed vertical weather flap of the visor panel freely engages the roof top to provide rain sealing engagement.

3,375,037
RETRACTABLE HARDTOP
Letcher B. Hunt, Jr., Rochester, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed May 23, 1966, Ser. No. 552,001
8 Claims. (Cl. 296—117)

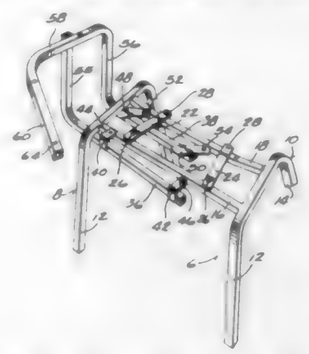


A retractable hardtop roof structure for an automobile including a rearward section and at least one forward section; to move the roof from its raised to its stowed position, the forward roof section is folded in accordion fashion against the rearward roof section while simultaneously rotating the rearward roof section backwardly about a generally horizontal axis, whereafter the forward and rearward roof sections are dropped as a unit substantially directly downwardly into the area immediately behind the seat of the automobile.

3,375,038
TABLET ARM ADAPTOR FOR CHAIRS
Allison F. Krueger, 226 Miramar Drive, Green Bay, Wis. 54301; Helen Van Nortwick Krueger, George E. Bills, F. N. Trowbridge, Sr., Philip J. Hendrickson, and John M. Rose, executors of said A. F. Krueger, deceased
Filed Sept. 16, 1966, Ser. No. 579,881
8 Claims. (Cl. 297—160)

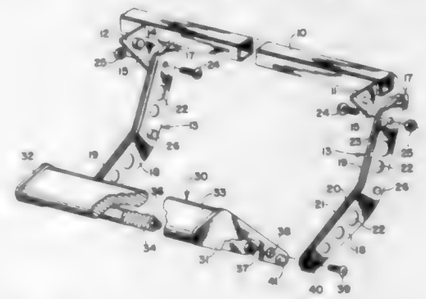
An adaptor for applying tablet arms to conventional single and multiple occupancy chairs, the adaptor comprising parallel bars having upstanding posts for supporting a tablet arm. The parallel bars extend along and

embrace the frame members of the chair and have apertured fingers which are interposed between the chair frame



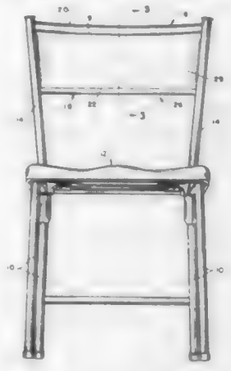
and the seat. The same bolts that secure the seat to the frame extend through the fingers on the adaptor bars.

3,375,039
ADJUSTABLE FOOTREST
George F. Gielow and Robert L. Edwards, Mansfield, Ohio, assignors to Artnell Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 19, 1966, Ser. No. 573,586
9 Claims. (Cl. 297—425)



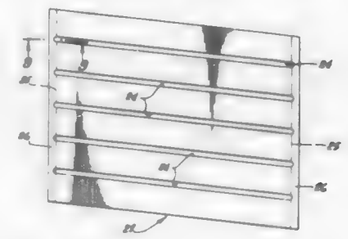
An adjustable footrest particularly useful in vehicle seating including a pair of hangers extending downwardly and toward the user from the seat ahead, a support pad assembly pivoted between the distal ends of the hangers between stops, the assembly including a pair of spaced foot support pads which are mounted on the assembly to provide alternate vertically spaced feet suporting surfaces at the opposite limits of movement of the pad assembly relative to the hangers.

3,375,040
CHAIR BACKREST
Earl F. Hamilton, Boca Raton, Fla., and Edwin K. Moore and Ralph B. Lay, Columbus, Ind., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed July 26, 1966, Ser. No. 567,923
5 Claims. (Cl. 297—460)



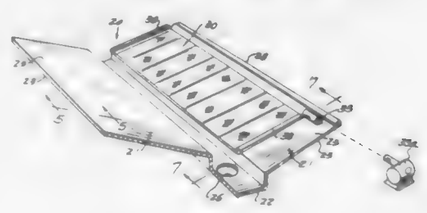
A chair backrest in which there is a pair of laterally spaced uprights interconnected by a pair of transverse, opposed channel members. The members are bowed rearwardly and a padded panel is retained between said members in a stressed rearwardly bowed condition with its upper and lower edges received in said members.

3,375,041
METHOD OF MAKING A BROOM ASSEMBLY
Simon Tamny, Los Angeles, Calif., assignor to Wayne Manufacturing Company, Pomona, Calif., a corporation of California
Original application Apr. 11, 1966, Ser. No. 541,552, now Patent No. 3,340,558, dated Sept. 12, 1967. Divided and this application July 3, 1967, Ser. No. 652,995
7 Claims. (Cl. 300—21)



The invention provides for the simple and low cost manufacture of disposable power-driven cylindrical sweeper brooms which mount brush strips extending in spaced relation longitudinally of the broom, the method employed involving formation of brush strip receiving slots within sheet metal in distended form, rolling the slotted sheet to cylindrical configuration and deforming the ends of the sheet to form outwardly extending flanges between which the brush strips are retained.

3,375,042
CARGO SUPPORTING FLOOR FOR BULK CARGO CONTAINERS
Werner Ostberg, Milan, and Michael D. Challis, Ann Arbor, Mich., assignors to Dundee Cement Company, Dundee, Mich.
Filed Oct. 17, 1966, Ser. No. 587,158
1 Claim. (Cl. 302—29)

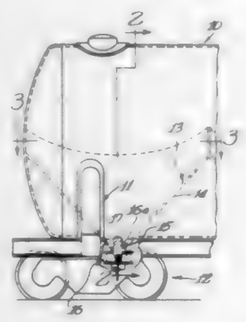


In a system for pumping dry material out of a cargo hold, using a sloping floor and an air pad or envelope, the provision of an air pipe parallel to the upper and higher edge of the pad to billow it for final material delivery.

3,375,043
METHODS OF AND MEANS FOR EFFECTING DISCHARGE OF MATERIALS FROM TANK CARS
William E. Fritz, Hinsdale, Ill., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Jan. 20, 1966, Ser. No. 521,765
6 Claims. (Cl. 302—52)

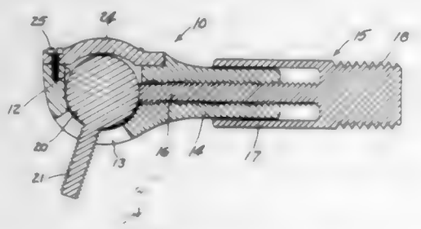
1. Apparatus for effecting the pressurized discharge and cleanout of material from hopper-type railroad tank cars wherein at least a substantial majority of the material is confined within at least one hopper compartment having a discharge port provided in the lowermost ex-

tremity thereof; which apparatus comprises means defining at least one inlet for accommodating the passage of pressurized air to each of said hopper compartments adjacent the discharge port provided therein, means for supplying pressurized air to each of said inlets, and means secured to said inlet defining means for translating pressurized air supplied through each of said inlets into



an upwardly directed high velocity air film, said last mentioned means being a non-porous deflector disc mounted in closely spaced relation to said inlet to ensure a sweeping deflection of said air film upwardly and across substantially the entire internal surface of said hopper compartment whereby undermining and discharge of the material confined therein is effected.

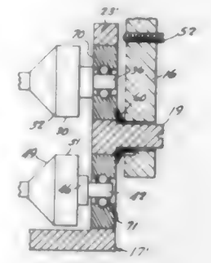
3,375,044
HANDLE ADAPTER FOR TOOLS
Arnold M. Peterson, 655 North 7th West, Provo, Utah 84601
Filed May 4, 1967, Ser. No. 636,093
1 Claim. (Cl. 306—9)



An adapter for connecting tools and tool handles, including a housing, a ball in the housing having a threaded stem projecting through a slot in the housing, a cover plate allowing easy access to the ball and removal of the ball from the housing and a coupling having a shaft threaded into the housing through a boss thereof and a sleeve slidable around the boss.

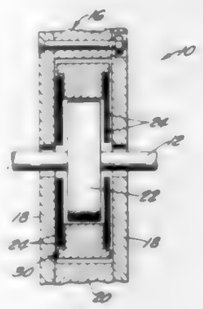
3,375,045
ADJUSTABLE V BEARING FOR GUIDING TRANSLATING SHAFTS
Herman Rudolf Zeidler, Plainview, N.Y. (3812 Dianne St., Bethpage, N.Y. 11714)
Filed Apr. 9, 1965, Ser. No. 446,950
9 Claims. (Cl. 308—6)

9. In a bearing assembly, a stationary support, a flat frame-like yoke member rotatably-mounted in said support on an axis in the plane of the yoke member, a first roller, means rotatably-supporting the ends of the first roller in opposite side portions of the yoke member, a second roller parallel to and spaced from the first roller, means rotatably and slidably supporting the ends of the second roller in said opposite side portions, the rollers being spaced on opposite sides of and being on axes parallel to said first-named axis, each of said rollers having a portion adapted to make rolling contact with an elon-



gated shaft extending through the yoke member between the rollers, and a coiled spring connected to the support and one of said side portions and acting to rotate the yoke member relative to the support.

3,375,046
FOIL THRUST BEARING ARRANGEMENTS
David John Marley, Buena Park, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Nov. 1, 1965, Ser. No. 505,808
11 Claims. (Cl. 308—164)

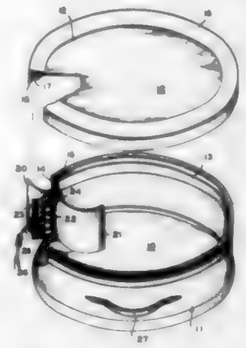


Foil thrust bearing arrangements are provided wherein a plurality of foils are held in fixed position by a thrust plate to provide bearing surfaces with an engaging shaft mounted thrust disk. The foils, which have a leading edge radially mounted on the thrust plate, extend about the shaft and overlap one another in shingle fashion, a convoluted portion in one or more foils increasing bearing resiliency. A bi-directional thrust bearing arrangement includes separate foil groups and associated thrust plates on opposite sides of the thrust disk, and retainer means between the opposite groups of foils minimizing foil contact with the disk.

3,375,047
CONTAINER FOR ROPE LARIAT
Blue H. Townsend, 2400 N. 49th, Waco, Tex. 76710
Filed Feb. 17, 1964, Ser. No. 345,351
9 Claims. (Cl. 312—31)

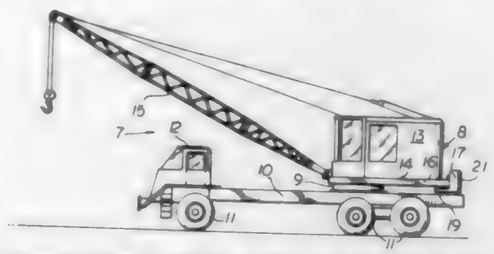
A container for drying lariats or the like including a cylindrical wall having an axis of lesser length than the diameter and defining a chamber for receiving a lariat, a top for tightly closing the container, tongue-and-groove seal means for removably holding the top of the container, and a drying element arranged within the bag and having cylindrical drying surface walls facing the lariat holding chamber. In one embodiment, the cylindrical drying element is an electric heater mounted between polyethylene impregnated layers forming the cylindrical wall of the container with an insulating layer having a heat reflecting

surface arranged to direct heat onto the lariat. In another embodiment, the cylindrical drying element is a cylindrical



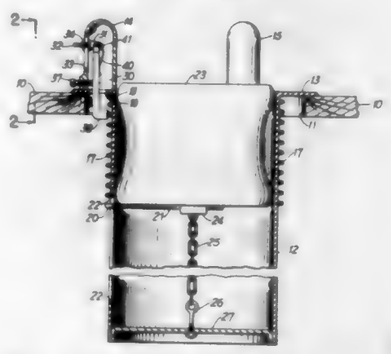
bag containing a desiccant located in the center of the lariat container.

3,375,048
COUNTERWEIGHT MOUNTING MECHANISM
Edwin Korensky and Joseph B. Tiffin, Cedar Rapids, Iowa, assignors to Link-Belt Company, a corporation of Illinois
Filed Nov. 21, 1966, Ser. No. 595,806
10 Claims. (Cl. 212—49)



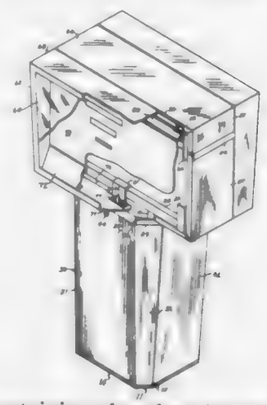
A construction machine having an under carriage with a platform rotatably mounted thereon, a boom pivotally associated with one end portion of the platform and a counterweight removably secured to the other end portion of the platform by means of a counterweight securing mechanism. The counterweight securing mechanism includes a linkage having a portion for operatively engaging and raising the counterweight and a hydraulic cylinder or other suitable power means for driving the linkage.

3,375,049
DISPENSING APPARATUS
Leo Rubinowitz, Westport, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Feb. 25, 1966, Ser. No. 530,117
Claims priority, application Great Britain, Mar. 9, 1965, 9,918/65
4 Claims. (Cl. 312—71)



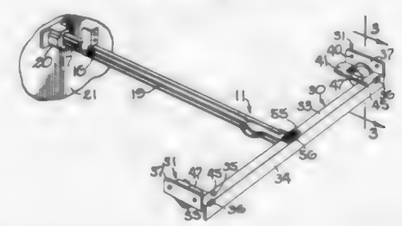
A self-leveling, storing, and dispensing apparatus comprising, in combination, a vertical cylinder having an open top and an opening in the side of said cylinder, an article carrier within said cylinder, and a coil spring disposed about said cylinder, the upper end of said coil spring being fixed in relation to said cylinder and the lower end of said coil spring having a projection extending through said opening in the side of said cylinder supporting said article carrier, and adjustment means to selectively immobilize upper coils of said coil spring, which comprises a clamp member disposed beyond said coil spring, said clamp member having a lower end containing a coil engaging portion, means vertically positioning said clamp member, and means urging the coil engaging portion in the lower end of said clamp member against a coil of said coil spring clamping the coil of said coil spring against said cylinder.

3,375,050
GASOLINE PUMP CASING
Bolling H. Sasnett, Jr., Box 2911, Station D, Atlanta, Ga. 30318
Filed Nov. 30, 1964, Ser. No. 414,743
2 Claims. (Cl. 312—100)



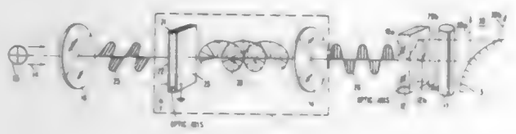
1. Means for retaining the glass holding bezel for the housing of a retail gasoline dispensing means in which the bezel includes an angularly extending bezel edge which includes, a U-shaped supporting piece adapted to receive the edge of a bezel between the side walls thereof and a spring retaining plate between the side walls of the supporting piece to bring pressure to bear against the bezel edge to restrain the edge from displacement from between the side walls of the supporting piece.

3,375,051
DRAWER GUIDING AND SUPPORTING ASSEMBLY
Donald L. Andersen, Fort Atkinson, Wis., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed Mar. 6, 1967, Ser. No. 621,021
11 Claims. (Cl. 312—343)



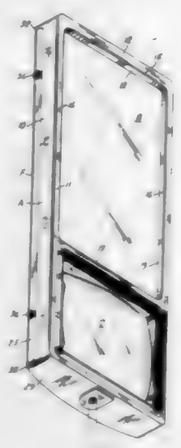
An assembly for guiding and supporting a drawer in a cabinet of the type manufactured without built-in cross rails. The assembly includes its own cross rail which simply may be placed on a pair of mounting brackets fastened to the cabinet side walls, and then locked securely to the brackets at the same time a central guide channel is anchored between the cross rail and the rear wall of the cabinet.

3,375,052
LIGHT BEAM ORIENTING APPARATUS
Kurt M. Kosanke and Werner W. Kulcke, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 5, 1963, Ser. No. 285,833
8 Claims. (Cl. 350—150)



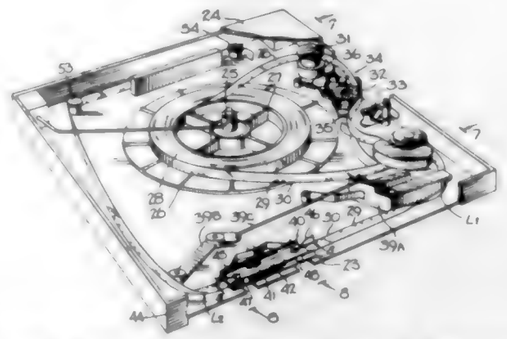
1. In optically aligned combination,
means for accepting a beam of plane polarized light,
means coupled to said accepting means for applying a force thereacross so that said accepting means provides a light beam with a polarization type dependent on the amount of force applied across it,
means for restoring the light beam to a plane polarized beam with an angle of polarization dependent on the polarization type of the light beam output emitted by the accepting means, and
birefringent optical means having its optic axis in alignment with the optic axis of the combination in the path of the output light beam for effecting conical refraction of the restored light beam to provide an output beam with an intensity distribution following a cosine function as determined by the polarization type of the beam emitted by the accepting means.

3,375,053
COMBINATION PLANE AND SPHERICAL REARVIEW TRUCK MIRROR
Wallace W. Ward, Chatham Township, Morris County, N.J., assignor to Diecasters, Inc., Closter, N.J., a corporation of New Jersey
Filed June 29, 1964, Ser. No. 378,525
1 Claim. (Cl. 350—293)



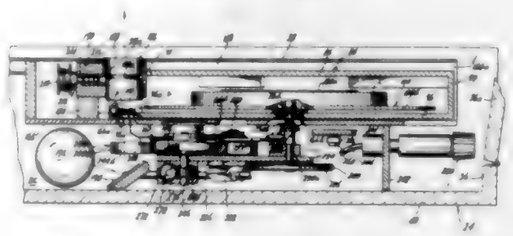
The present disclosure sets forth a truck mirror comprising an upper flat mirror and a lower spherical mirror received in substantially the same casing, with the plane of the upper mirror substantially constituting the tangent front plane of the lower mirror and with the lower mirror being pivotally mounted by means of ball adjustments in the rear of the casing.

3,375,054
CARTRIDGE TYPE SOUND MOTION PICTURE PROJECTOR
David Colson Hughes, White Plains, N.Y., assignor, by mesne assignments, to Bohn Benton Inc., New York, N.Y., a corporation of New York
Filed Dec. 11, 1964, Ser. No. 417,760
30 Claims. (Cl. 352—29)



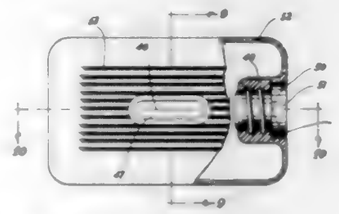
A sound motion picture projector which is cartridge loaded, including a projector mechanism and a foldable rear screen assembly contained within a readily portable carrying case.

3,375,055
CARTRIDGE TYPE SOUND MOTION PICTURE PROJECTOR
David Colson Hughes, White Plains, N.Y., assignor, by mesne assignments, to Bohn Benton Inc., New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 417,760, Dec. 11, 1964. This application Aug. 18, 1965, Ser. No. 480,600
11 Claims. (Cl. 352—72)



A sound motion picture projector which is cartridge loaded, including a projector mechanism and a foldable rear screen assembly contained within a readily portable carrying case.

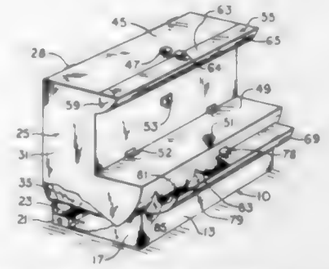
3,375,056
LIQUID SOAP DISPENSER HAVING INTEGRAL SELF-SEALING DISPENSING MEANS
José Rosán, Rancho San Juan, San Juan Capistrano, Calif. 92675
Filed June 17, 1965, Ser. No. 464,698
8 Claims. (Cl. 401—186)



1. A liquid dispenser, comprising:
a hollow body, said body being comprised of a pliable resilient material;
corrugation means formed on the outer surface of at least one wall of said body, said corrugation means having a plurality of intermittent elongated crests and roots;
an elongated protrusion carried by the inner wall of said body, said protrusion having a lateral dimension substantially less than its longitudinal dimension, said elongated protrusion projecting slightly inwardly from the inner wall surface of said body, the face area of said protrusion being substantially less than the area of the inner wall surface of said body, said protrusion face being in a plane substantially parallel to the inner wall of said body;
slit means provided in said body, said slit means comprised of an elongated normally closed aperture extending through said elongated protrusion coextensively with the longitudinal dimension thereof and coextensively aligned with a root of said corrugation means, the outermost edges of said slit means being in tight association and the innermost edges of said slit means being in spaced relation with each other; and
means for filling said hollow body with liquid or the like.

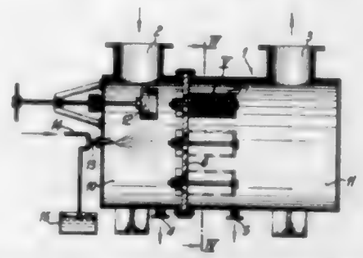
CHEMICAL

3,375,057
STERILIZING DEVICE FOR HAIR STYLING APPARATUS
Ellen M. Morris, 1700 E. 32nd St., Des Moines, Iowa
Filed Mar. 5, 1964, Ser. No. 349,610
8 Claims. (Cl. 21—91)



A sterilizing device for hair styling apparatus consisting of a J-shaped housing mounted on a rectangular housing. The rectangular housing is adapted to receive a disinfectant, the vapors of which pass upwardly into the J-shaped housing to sterilize the apparatus contained therein. The J-shaped housing includes an upper door for inserting the apparatus and a lower door at the front thereof for removing the apparatus after sterilization.

3,375,058
APPARATUS AND METHOD FOR SEPARATING SUSPENDED SUBSTANCES FROM GAS CURRENTS
Gerd Petersen, Wiesbaden-Sonnenberg, and Volker Fattinger and Walter Jäger, Wiesbaden, Germany, assignors to Firma Hugo Petersen, Wiesbaden, Germany, a corporation of Germany
Filed June 25, 1963, Ser. No. 290,364
Claims priority, application Germany, June 28, 1962, P 29,708; Mar. 27, 1963, P 31,454
16 Claims. (Cl. 23—2)



1. Apparatus for separating suspended substances from a gas current under a pressure differential of at least 30 mm. of water column, said apparatus comprising at least one hollow body extending longitudinally of the gas flow path and positioned in the gas current, said body being formed by juxtaposed similar closed annular structural elements which constitute the wall of said body and are arranged with the axial end edges of adjacent elements spaced apart from one another in the longitudinal axial direction of the hollow body to form parallel annular slots between said axial end edges which, in axial section of the hollow body, form sharply curved paths having angularly related annular gas entry and annular gas exit sections and a constriction at the sharpest curvature to impart a single abrupt change in direction to annular gas streams flowing therethrough.

3,375,059
OXIDATION OF WASTE GASES USING PLURAL CATALYSTS IN SERIAL ZONES
Clarence G. Gerhold, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed July 1, 1964, Ser. No. 379,748
3 Claims. (Cl. 23—2)

Combustion of vehicular exhaust gases by passing the gases in admixture with O_2, either upflow or downflow, through a particle-form catalyst bed containing a major portion of high ignition temperature catalyst particles and a minor portion of low ignition temperature or "ignitor" catalyst particles. The ignitor particles, as a class, are of different size than the bulk or high ignition temperature particles, so that when the bed is subjected to agitation, as by natural road vibration of the vehicle, the ignitor particles tend to stratify as a layer above (for downflow) or below (for upflow) the bulk particles, the purpose being to assure concentration of the ignitor particles in the inlet part of the bed.

3,375,060
METHOD OF PRODUCING HYDROGEN FLUORIDE AND SOLUBILIZED BERYLLIUM
Robert S. Olson, Concord, Elmer C. Tveter and Joseph P. Suris, Walnut Creek, Calif., and Raymond G. Shaw, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 31, 1964, Ser. No. 386,778
13 Claims. (Cl. 23—15)

A process for simultaneously producing hydrogen fluoride and solubilizing beryllium values in a beryllium containing mineral by reacting a beryllium-containing mineral and fluoride in predetermined ratios with sulfuric acid at a temperature of from 200 to about 300° C. and atmospheric pressure.

3,375,061
PYROHYDROLYTIC ATTACK OF RARE EARTH FLUOCARBONATE ORES
Robert M. Healy, Warrenville, Ill., and Lamar T. Royer, Oak Ridge, Tenn., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Mar. 12, 1964, Ser. No. 351,511
10 Claims. (Cl. 23—15)

A process for recovering substantially all of the rare earth values from rare earth fluocarbonate ores by subjecting the ore to pyrohydrolytic attack in which heated

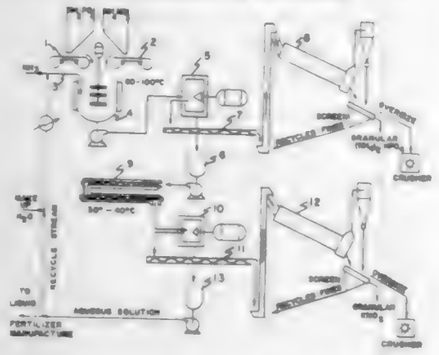
ore is contacted with steam whereby fluorine values in the ore are volatilized and removed therefrom and substantially all of the rare earth values in the ore are converted to acid soluble rare earth oxides which may subsequently be leached from the treated ore. Pyrohydrolytic attack of the ore is generally carried out at temperatures of between 700° C. and 1300° C. Lower temperatures may be used if the ore is digested with a concentrated mineral acid prior to pyrohydrolytic attack.

3,375,062

PROCESS FOR THE PREPARATION OF DIAMMONIUM PHOSPHATE AND POTASSIUM NITRATE FROM POTASSIUM PHOSPHATE AND AMMONIUM NITRATE

William T. Curless, Overland Park, Kans., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 30, 1964, Ser. No. 407,743
5 Claims. (Cl. 23—102)



By conducting phase reactions by changing concentrations or temperatures in a mixture of solid and aqueous solution phases consisting of aqueous solvent (water plus impurities) and the reciprocal salt pair;

$$K_2HPO_4+2NH_4NO_3 \rightleftharpoons (NH_4)_2HPO_4+2KNO_3$$

there is obtained preferably at elevated temperatures $(NH_4)_2HPO_4$ as a single solid phase and on cooling, the mother liquor yields KNO_3, also as a single solid phase, both products being suitable for use in fertilizer formulations.

3,375,063

AMMONIUM POLYPHOSPHATE PREPARATION

John Bernard Bookey and Barrie Bernett Pearce, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,101
Claims priority, application Great Britain, Mar. 27, 1963, 12,192/63
8 Claims. (Cl. 23—107)

A process for producing ammonium polyphosphate by reacting wet process phosphoric acid and ammonia gas in the presence of ammonium polyphosphate and at a temperature of 170° to 250° C., whereby cooling is provided by the evaporation of water from the reaction zone, is disclosed.

3,375,064

PRODUCTION OF THE HYDROGEN ION EXCHANGED FORM OF A CRYSTALLINE ZEOLITE

Joseph N. Miale, Trenton, N.J., and Paul B. Weisz, Media, Pa., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,342
21 Claims. (Cl. 23—111)

The invention is directed to producing the hydrogen ion exchanged form of a crystalline aluminosilicate zeolite by contacting an ammonium exchanged crystalline aluminosilicate with an anhydrous, gaseous acid.

3,375,065

METHOD OF CATION EXCHANGING SYNTHETIC FAUJASITE

Carl V. McDaniel, Laurel, and Philip K. Maher, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 318,249, Oct. 23, 1963, and Ser. No. 367,864, May 15, 1964. This application Jan. 25, 1965, Ser. No. 427,967
1 Claim. (Cl. 23—112)

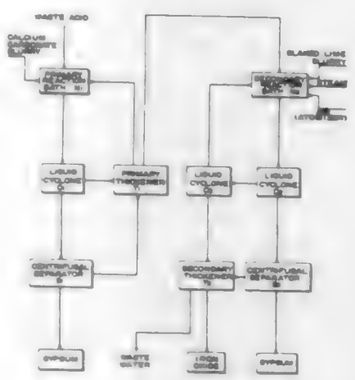
Method of cation exchanging crystalline zeolite aluminosilicates to reduce the sodium content, expressed as the oxide, of the zeolite to less than 1%. The process is characterized by a primary sequence comprising a cation exchange step followed by a heat treatment step followed by another cation exchange step. The sequence is applied either singly or multiply, depending upon the particular materials, temperatures, cation exchange solution concentrations, etc., used. In a further embodiment the second cation exchange solution contains desirable metal cations, such as rare earths.

3,375,066

PROCESS FOR THE CONTINUOUS PRODUCTION OF GYPSUM AND IRON OXIDE FROM WASTE SULFURIC ACID PICKLE LIQUOR AND A CALCIUM COMPOUND

Keiichi Murakami, Sendai, and Mitsuo Hanada and Hidehiko Miyairi, Kitakyushu, Japan, assignors to Yawata Chemical Industry Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Aug. 19, 1964, Ser. No. 390,675
Claims priority, application Japan, Aug. 24, 1963, 38/44,835 and 38/44,836
9 Claims. (Cl. 23—122)



This invention relates to a method for the continuous production of gypsum from a waste sulfuric acid pickle liquor containing iron comprising introducing into a reaction vessel said liquor, a slurry of a compound such as calcium carbonate or calcium hydroxide and water in such amounts that pH of the mixture is less than 2.5 and the concentration of $CaSO_4 \cdot 2H_2O$ in the mixture is 100 to 300 g./l., stirring the mixture to accelerate the formation of product gypsum of 100 to 200 microns in grain size and separating the reaction mixture into product gypsum and fine gypsum of less than 100 microns.

3,375,067

BENEFICIATION OF PHOSPHATE ORE CONTAINING CARBONATES

Joseph F. Haseman, Lakeland, Fla., assignor, by mesne assignments, to Armour Agricultural Company, a corporation of Delaware

No Drawing. Filed Nov. 4, 1964, Ser. No. 408,748
5 Claims. (Cl. 23—165)

Phosphate ores high in carbonate minerals are calcined to change the carbonate minerals to oxides and cooled.

The ores are then attritioned as by scrubbing, grinding, shaking, etc. to form a dry dust body, and the dust separated as dry dust by screening, air classification, etc. The phosphate ore remaining after separation from the dust is digested with acid for the production of wet process phosphoric acid, superphosphate fertilizer, etc. By removing the dust which contains the bulk of the carbonate materials in dry form, the acid-insoluble fraction is reduced and the acid requirements for phosphoric acid and fertilizer production are reduced.

3,375,068

PHOSPHORIC ACID EXTRACTION

Gerhard J. Frohlich, Ridgewood, N.J., and Thomas W. Segar and Ting Sin Go, Minneapolis, Minn., assignors to St. Paul Ammonia Products, Inc., St. Paul, Minn., a corporation of Minnesota

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,338
8 Claims. (Cl. 23—165)

A liquid-liquid extraction procedure is provided using an organic amide in an inert solvent both to extract trivalent iron from phosphoric acid solutions and, by varying the amide concentration, to extract phosphoric acid itself.

This invention relates to the recovery of phosphoric acid from crude aqueous solutions thereof resulting from the hydrochloric acid acidulation of solid inorganic phosphate material, e.g., phosphate rock, which is composed predominantly of tricalcium phosphate. In particular this invention relates to a new and useful liquid-liquid extraction procedure enabling the economic production of super phosphoric acid, i.e., phosphoric acid containing by weight at least 70% P_2O_5, of high purity, from crude solutions of hydrochloric acid dissolved phosphate rock, which crude solutions may be contaminated with both calcium and iron impurities.

3,375,069

PROCESS FOR REMOVING ZINC OXIDE FROM IRON OXIDE FLUE DUST BY THE USE OF SPENT PICKLE LIQUOR

Leonard A. Duval, 207 Harmon Road, Aurora, Ohio 44202

Filed July 23, 1965, Ser. No. 474,436
2 Claims. (Cl. 23—200)

Undesirable amounts of zinc oxide are removed from iron oxide flue dust so as to render the flue dust valuable as a raw material for the blast furnace. The removal of the zinc oxide is accomplished by means of spent pickle liquor which is usually a waste product in the steel industry resulting from the use of hydrochloric acid or sulphuric acid for cleaning steel resulting in a product which is undesirable for dumping into lakes or streams. The method includes mixing the zinc-containing flue dust with the spent pickle liquor, reacting the mixture to convert a major portion of the zinc oxide to a salt of zinc and of the acid, either zinc chloride or zinc sulphate, then removing the iron oxide from the reacted mixture as a solid cake containing not over 0.50 percent by weight of zinc oxide which is acceptable for recharging in the blast furnace. The effluent from the reacted mixture which contains the zinc salt is evaporated to concentrate the salt and the water discharged from the evaporator is suitable for dumping into a lake or stream. The concentrated zinc salt may be further processed by roasting it to a zinc oxide which drives off HCl or SO_3 gas which may be passed through an absorption tower to recover hydrochloric or sulphuric acid.

3,375,070

PROCESS FOR SEPARATING TITANIUM TETRACHLORIDE FROM SOLUTIONS THEREOF IN CHLORO-SILOXANES

Walter Krings, Rheinfelden, and Werner Dittrich, Herten, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk Cologne, Germany, a corporation of Germany

No Drawing. Filed Sept 24, 1963, Ser. No. 311,203
Claims priority, application Germany, Sept. 29, 1962, D 39,943
5 Claims. (Cl. 23—203)

This disclosure pertains to the separating of titanium tetrachloride from solutions thereof containing chlorosiloxanes and silicon tetrachloride. The titanium chloride is separated from the solution by converting the same to titanium oxychloride as a result of the addition to the solution of aqueous hydrochloric acid of at least 30% concentration, the amount of water in the acid comprising 0.38 part by weight thereof to 1 part by weight of titanium tetrachloride in the solution treated.

3,375,071

GERMANIUM SELENIDES AND PROCESSES FOR THEIR PRODUCTION

Howard S. Young, Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 23, 1964, Ser. No. 420,776
6 Claims. (Cl. 23—204)

Two new crystal forms of germanium diselenide can be made by heating the elements together at pressures greater than 30 kilobars. A black crystalline form having fibrillar cleavage has semiconductive and photoconductive properties. An orange-yellow tetragonal form also has photoconductive properties.

3,375,072

PREPARATION OF PERCHLORYL FLUORIDE

Anthony W. Yodis, Whippany, and William J. Cunningham, Rockaway, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 21, 1964, Ser. No. 369,301
10 Claims. (Cl. 23—203)

Perchloryl fluoride is prepared by reacting elemental fluorine with an aqueous solution of a water soluble inorganic metal chlorate, particularly an alkali metal chlorate.

3,375,073

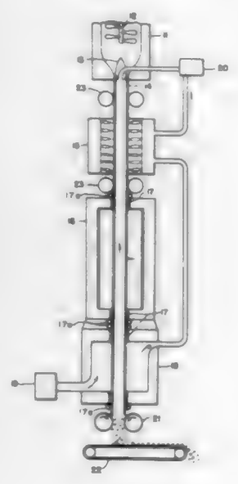
PROCESS AND APPARATUS FOR EFFECTING SOLID-STATE REACTIONS

John C. McMullen, Niagara Falls, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed Nov. 14, 1960, Ser. No. 68,855
12 Claims. (Cl. 23—204)

1. A continuous process for producing a non-oxidic refractory material of the group consisting of carbides and borides which includes the steps of providing an extrudable mixture containing finely divided materials which are thermally reactive to form said refractory materials; continuously extruding said mixture vertically to form a continuous, reinforced, elongated shape; moving said continuous shape vertically while progressively drying it to render it self-supporting; continuing vertical movement of said dried, continuous, self-supporting shape while

progressively heating it without any separate support in a neutral atmosphere to such temperature as to effect reaction of the materials in said shape to form said refractory material without loss of said shape; progressively cooling said continuous shape; and recovering the reaction products therefrom.

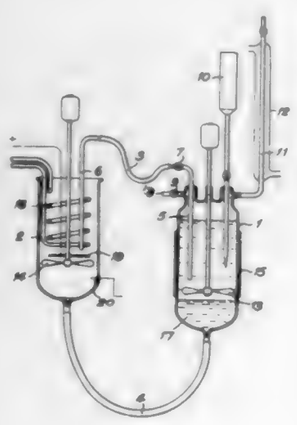


3,375,074

MANUFACTURE OF PHOSPHINE

Malcolm George Palmer, Lakedown, near Kidderminster, England, assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Jan. 10, 1962, Ser. No. 165,729
Claims priority, application Great Britain, Jan. 19, 1961, 2,209/61
5 Claims. (Cl. 23—204)



1. A process for preparing phosphine comprising reacting white phosphorus, an amalgam of mercury and a metal selected from the group consisting of zinc and cadmium, and a composition consisting essentially of an aqueous solution of an acid at a pH ranging up to pH 5, said reacting taking place at an interface of said aqueous solution of acid, white phosphorus and amalgam which forms a layer beneath said aqueous solution of acid, said aqueous solution of acid further having a specific gravity less than that of said white phosphorus, and in which said reacting includes dropping said white phosphorus, a drop at a time, through said aqueous solution of acid, whereby it drops to the bottom of said aqueous solution of acid and reaches the surface of the amalgam and forms a thin layer thereon.

3,375,075

METHOD AND APPARATUS FOR PRODUCING CARBON BLACK

Theodore A. Ruble, Houston, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware

Filed Nov. 3, 1964, Ser. No. 408,585
6 Claims. (Cl. 23—209.4)

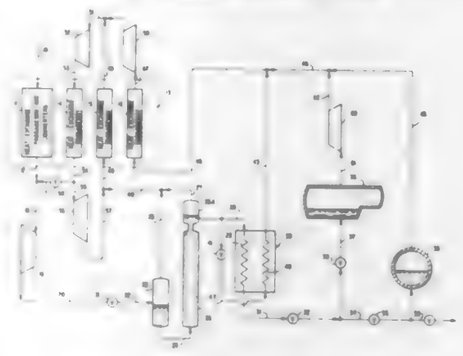
Process for making carbon black by introducing feedstock and an oxygen containing gas into a reactor for ignition of the mixture of the feedstock and gas for the formation of gaseous effluent containing carbon black by partial combustion, passing the effluent through a throttled zone of the reactor at a velocity of at least 1,126 feet per second and thereupon into an expansion zone of the reactor for rapid expansion and partial cooling, whereafter the effluent is passed through a further cooling zone to terminate the carbon black forming reaction and then recovering the effluent from the reactor for separation of the carbon black from the effluent. Apparatus for making carbon black comprising a closed elongate reactor, means for introducing feedstock and oxygen containing gas into the reactor, said reactor having reaction, throttled, expansion, and cooling zones together with means for removing the gaseous effluent containing carbon black from the reactor.

3,375,076

LIQUEFACTION AND CONVERSION PROCESS

Peter C. Vander Arend, Huntsville, Ala., assignor to Air Products and Chemicals, Inc., a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 335,906
6 Claims. (Cl. 23—210)



Process for producing liquid hydrogen of high para composition in which compressed hydrogen gas of normal equilibrium composition (75% ortho hydrogen-25% para hydrogen) is cooled by heat interchange with relatively cold fluid and passed in contact with a catalyst which accelerates conversion of ortho-hydrogen to para-hydrogen and in which the hydrogen gas is then expanded to a lower pressure to effect at least its partial liquefaction and the liquefied portion is separated and then catalytically converted to further increase its para composition.

3,375,077

STORAGE OF BROMINE

Moshe Rudolf Bloch, Beersheba, and Isaac Schnerb, Jerusalem, Israel, assignors to Mifalei Yam Hamelah, B.M., Beersheba, Israel

No Drawing. Filed July 13, 1964, Ser. No. 382,339
Claims priority, application Israel, July 19, 1963, 19,621
9 Claims. (Cl. 23—216)

1. Method for the storage of bromine wherein the bromine is introduced into a stainless steel container in admixture with a nitrogen oxide.

2. The method according to claim 1, wherein the nitrogen oxide is introduced into the bromine by intimately mixing the bromine with fuming nitric acid.

3,375,078

DETERMINATION OF DEPLETION OF DISSOLVED OXYGEN CONTENT IN WATER

John Stiles Dendy, 315 Woodfield Drive, Auburn, Ala. 36830

No Drawing. Filed Feb. 12, 1964, Ser. No. 344,238
9 Claims. (Cl. 23—230)

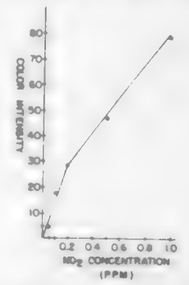
A method and means of determining dissolved oxygen in water by disposing in the water a color indicator comprising a carrier containing tannic acid thereon which will change color due to the reaction of dissolved ferrous iron in the water from which can be determined the amount of oxygen in the water.

3,375,079

COLORIMETRIC REAGENT FOR ANALYSIS OF NITROGEN DIOXIDE IN AIR AND METHOD OF USE

Norman A. Lyshkow, Chicago, Ill., assignor to Precision Scientific Company, Chicago, Ill., a corporation of Illinois

Filed June 8, 1965, Ser. No. 462,226
12 Claims. (Cl. 23—232)



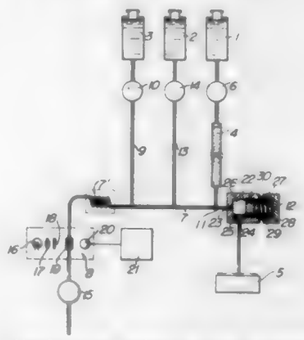
A Greiss-type colorimetric reagent for the analysis of nitrogen dioxide in air, the reagent containing one to four grams sulfanilamide or sulfanilic acid per liter of reagent, 0.025 to 0.75 gram N(1-naphthyl) ethylenediamine dihydrochloride per liter of reagent, 0.025 to 0.075 gram 2-naphthol 3,6 disulfonic acid disodium salt per liter of reagent, and the balance tartaric acid or acetic acid in an amount such that the reagent has a pH of less than four. The disodium salt is described as improving both the rate and intensity of color development, as well as the absorption efficiency of the reagent even at extremely low nitrogen dioxide levels.

3,375,080

APPARATUS FOR CHROMATOGRAPHIC ANALYSIS OF LIQUIDS

Yoshio Fujii, Katsuta-shi, and Kyoichi Ozawa, Kyoto, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Apr. 7, 1964, Ser. No. 357,926
Claims priority, application Japan, Apr. 10, 1963, 38/17,661
2 Claims. (Cl. 23—253)



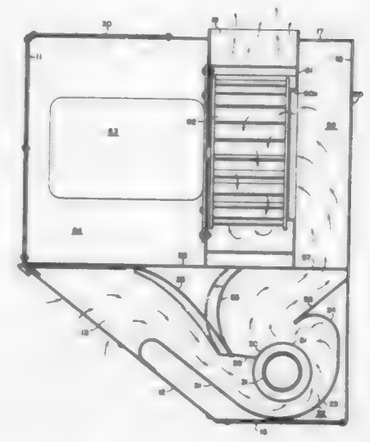
The present disclosure relates to an apparatus for the chromatographic analysis of liquids. More particularly, the present disclosure concerns the chromatographic analysis of liquids wherein means are provided so that the various components of a liquid sample separated in a chromatographic column will no remix before they are passed through a flow-through type photometer. Furthermore, the ratio of the amount of effluent supplied to the photometer to the amount of the effluent collected in a fraction collector, that is the fraction ratio can be freely varied and accurately established.

3,375,081

GREASE INCINERATOR

Alexander M. Papp, Lorain, and Louis P. Hine, Jr., Elyria, Ohio, assignors, by mesne assignments, to American Gas Association, Inc., New York, N.Y., a corporation of New York

Filed June 17, 1965, Ser. No. 464,638
6 Claims. (Cl. 23—277)



1. A grease vapor incinerator comprising, a housing through which grease vapors are to be passed and having an inlet opening and an exhaust opening, baffle and duct means in said housing defining a toroidal chamber between said inlet opening and said outlet opening for imparting a circular motion to grease vapors passing from said inlet opening to said exhaust opening, power fan means in said duct means on the downstream side of said toroidal chamber for positively moving grease vapors from said inlet opening through said toroidal chamber towards said exhaust opening, a member having a cylindrical surface positioned substantially coaxially within said toroidal chamber, means comprising a foraminous burner surface coaxially mounted within said member, means to convey combustible fuel to said foraminous surface, the surface of said member being provided with at least one opening therethrough for the passage of products of combustion from said burner surface contained therein whereby grease particles in the vapor passing through said toroidal chamber are directed by the walls of said chamber toward the heated generally cylindrical surface and impinging on the heated surface of said member are caused to be incinerated.

3,375,082

PROCESS FOR THE CONTINUOUS SEPARATION OF CRYSTALLIZABLE SUBSTANCES

Roderich Graf, Hofheim, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

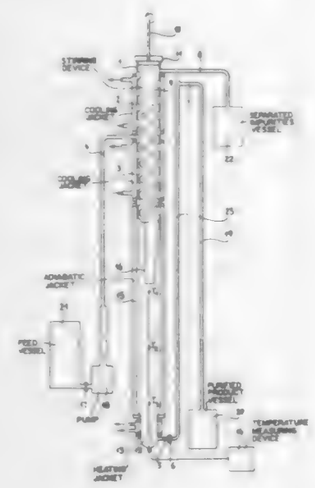
Filed Apr. 28, 1965, Ser. No. 451,559
Claims priority, application Germany, Apr. 29, 1964, F 92,741
5 Claims. (Cl. 23—295)

1. A process for a continuous separation by rectification crystallization of a mixture of crystallizable sub-

stances, containing at least two components crystallizing at a higher and lower temperature with respect to each other, a solid phase of said mixture having a higher specific gravity at its equilibrium melting point than its molten phase, said rectification being carried out in a vertical rectification zone, in which at least three different temperature zones are present, an upper zone being at the lowest temperature, an intermediate, adiabatic zone being at a temperature intermediate the upper zone and a lower zone, which lower zone is at the highest temperature, this temperature corresponding to a temperature at least at which the component crystallizing at a higher temperature melts, said process comprising the steps of:

(a) continuously introducing into the upper zone of the rectification zone, the mixture of substances to be separated, dissolved in at least one solvent, said solvent having a lower specific gravity than a melt of the component which crystallizes out at a higher temperature, said mixture of substances being soluble in said solvent and variably soluble in said solvent depending on temperature;

(b) cooling in the upper zone the introduced mixture while maintaining the upper zone at a temperature at which the liquid phase of the mixture of components has the lowest specific gravity to obtain at least crystals of the component crystallizing at a higher temperature;



(c) forming and maintaining in the intermediate, adiabatic zone a dynamic state of equilibrium between the crystals of the component which crystallizes at a higher temperature and its melt, and wherein said component crystallizing at a higher temperature forms a crystal slurry at an equilibrium melting point;

(d) measuring the temperature at a plurality of points in the intermediate, adiabatic zone;

(e) collecting by means of gravity, at the bottom of the rectification zone in the lower zone, said crystal slurry of the component crystallizing at higher temture;

(f) melting said collected crystal slurry in the lower zone;

(g) modifying the heat input to the lower zone responsive to the temperature measured at the plurality of points in the adiabatic zone;

(h) withdrawing said component crystallizing at a higher temperature from the bottom of the rectification zone in the form of a melt; and

(i) withdrawing a solvent solution containing the component crystallizing at a lower temperature from the top of the rectification zone.

3,375,083
METHOD FOR THE PREPARATION OF COMPLEX FLUORONITRONIUM SALTS

Stephen J. Kuhn, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 19, 1963, Ser. No. 331,932
6 Claims. (Cl. 23—356)

A process for preparing complex fluoronitronium salts which comprises introducing nitrylchloride and anhydrous hydrogen fluoride into a solvent for the reactants along with a Lewis acid fluoride, agitating the mixture at a temperature below 20° C. whereby the corresponding nitronium salt product precipitates in the reaction mass and separating this salt product from the residual reaction mixture.

3,375,084
METHOD FOR THE PREPARATION OF COMPLEX FLUORONITROSONIUM SALTS

Stephen J. Kuhn, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 19, 1963, Ser. No. 331,959
6 Claims. (Cl. 23—356)

A process for preparing complex nitrosonium salts which comprises introducing nitrosylchloride and anhydrous hydrogen fluoride into a solvent for the reactants along with a Lewis acid fluoride, agitating the mixture at a temperature below 20° C. whereby the corresponding nitrosonium salt product precipitates in the reaction mass and separating this salt product from the residual reaction mixture.

3,375,085
(DIFLUOROAMINO)SULFUR PENTAFLUORIDE

Anestis L. Logothetis, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 10, 1961, Ser. No. 130,492
1 Claim. (Cl. 23—357)

Claimed is the compound SF_5NF_2 useful as a polymerization initiator.

3,375,086
HYDRAZINATED LITHIUM BOROHYDRIDES AND PREPARATION THEREOF

Frank C. Gunderloy, Jr., Menlo Park, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 30, 1959, Ser. No. 851,188
7 Claims. (Cl. 23—358)

1. Bis-hydrazinemonoborane lithium borohydride having the formula $LiH_{13}N_4B_3$.

2. A composition of matter consisting of solid bis-hydrazine lithium borohydride having the empirical formula $LiH_{12}N_4B$ and further characterized by having a density of 0.96 gm./cm.^{3} and a melting point of 115° C.

5. Process for making hydrazinated lithium borohydride which comprises reacting a compound selected from the group consisting of hydrazine and hydrazine monoborane with lithium borohydride in the presence of tetrahydrofuran solvent, and recovering the hydrazinated lithium borohydride product.

3,375,087
PROCESS FOR PREPARING HYDRAZINE MONOBORANE

Frank C. Gunderloy, Jr., Menlo Park, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

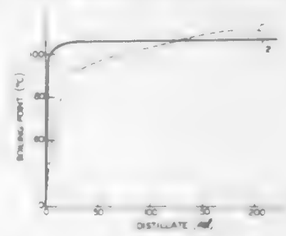
No Drawing. Continuation-in-part of application Ser. No. 820,823, June 15, 1959. This application Nov. 25, 1959, Ser. No. 855,471
4 Claims. (Cl. 23—358)

1. Process for preparing hydrazine monoborane having the empirical formula $H_1N_2H_7$ which comprises reacting a borohydride salt selected from the group consisting of alkali metal, alkaline earth metal, aluminum, and quaternary ammonium borohydride salts with an ionic hydrazine salt containing the monoprotic hydrazinium ion ($N_2H_5^+$) in the presence of an inert liquid diluent with evolution of hydrogen to form the hydrazine monoborane, said borohydride salt and said hydrazine salt being mixed as solids in the diluent, forming in the diluent a solid by-product salt from the cation of the borohydride salt and the anion of the hydrazine salt, separating the hydrazine monoborane product in solution from the unreacted salt and by-product salt solids, and recovering the hydrazine monoborane from solution by separation of solvent in the solution.

3,375,088
TREATMENT OF CRUDE CHLOROSULFURYL ISOCYANATE

Norio Onodera and Motohiko Nishide, Urawa-shi, Saitama-ken, and Hisao Takahashi, Kawagoe-shi, Saitama-ken, Japan, assignors to Nitto Chemical Industry Co., Ltd., Chiyoda-ku, Tokyo, Japan, and Zaidanhojin Nitto Rikagaku Kenkyujo, Urawa-shi, Saitama-ken, Japan

Filed Feb. 25, 1964, Ser. No. 347,233
2 Claims. (Cl. 23—359)

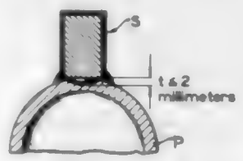


A process for purifying crude chlorosulfuryl isocyanate by contacting it with benzonitrile or a derivative thereof.

3,375,089
STEEL STUDS

Werner Oehler and Werner Müller, Gummersbach, Germany, assignors to L. & C. Steinmuller G.m.b.H., Gummersbach, Germany

Filed June 17, 1965, Ser. No. 464,688
Claims priority, application Germany, June 23, 1964, St 22,295
7 Claims. (Cl. 29—183)



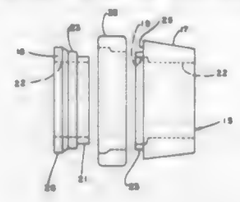
7. In combination with a boiler pipe: a steel stud having a steel core with one end face thereof welded to said boiler pipe and having a cover of steel extending over all of the surfaces of said core with the exception of said one end face, said cover containing at least 1 percent more alloying ingredients than said core and extending up to the outer surface of said pipe.

3,375,090
PROTECTIVE DEVICES FOR TORCH TIPS

Daniel A. Marra, Jr., Wildwood, Pa., assignor, by mesne assignments, to Norman E. White, Butler, Pa.

Filed Sept. 15, 1965, Ser. No. 487,535
5 Claims. (Cl. 29—183.5)

1. In a torch tip for scarfing steel slabs or the like, a protective device comprising an inner base member and an outer base member secured together to form a unit mounted on the outer end of the torch tip, the base unit having a groove cut on its outer diameter and a wearing ring having sides of less width than the width of

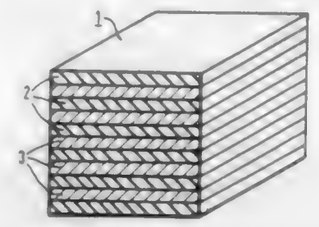


the groove and an inside diameter greater than the outside diameter of the groove for rotatably mounting the wearing on the base unit.

3,375,091
STORER WITH MEMORY ELEMENTS BUILT UP OF THIN MAGNETIC LAYERS

Ernst Feldtkeller, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Mar. 17, 1965, Ser. No. 440,646
Claims priority, application Germany, Mar. 17, 1964, S 90,051; May 25, 1964, S 91,223
11 Claims. (Cl. 29—194)



A memory element having several magnetic layers superimposed in stack formation wherein each of the layers are separated from one another by non-magnetic partially electrically conductive interlayers. Thus, there is created a magnetic storer element which is largely free of wall creeping, wherein the upper field strength limit for the reversible rotation and the lower field strength limit for the coherent rotation are located close to each other.

3,375,092
ANTI-ICING GASOLINE

William M. Sweeney, Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 3, 1964, Ser. No. 415,816
10 Claims. (Cl. 44—64)

This invention relates to an additive material and to a motor fuel composition containing same having anti-icing properties. The additive material is the reaction product of alkenyl succinic acid or anhydride in which the radical has from 8 to 24 carbon atoms and hydrazine having the formula R_2NNR_2 in which each R represents a member selected from the group consisting of hydrogen and an alkyl radical having from 1 to 4 carbon atoms.

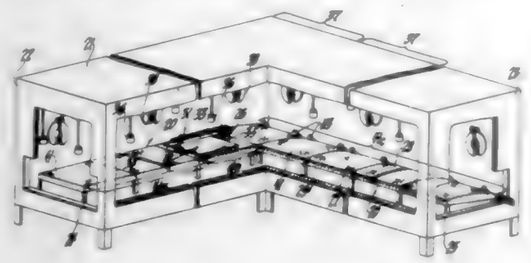
3,375,093
METHOD AND APPARATUS FOR CURVING GLASS SHEETS OR THE LIKE ON A GAS SUPPORT BED

Paul J. Reising, Birmingham, Mich., assignor to Permaglass Inc., Woodville, Ohio, a corporation of Ohio

Filed Jan. 11, 1965, Ser. No. 424,531
11 Claims. (Cl. 65—25)

An apparatus for treating sheets of glass comprising a furnace with a flat bed portion disposed in the furnace and a curved bed portion disposed in the furnace and abutting the flat bed portion along at least a portion of one side thereof. The curved bed portion is curved in a direction generally away from the abutment between the

flat and curved bed portions. The curved bed portion is elongated so that serially arranged spaced sheets of glass may be moved in a first direction over the flat bed portion and then over the curved bed portion while still moving



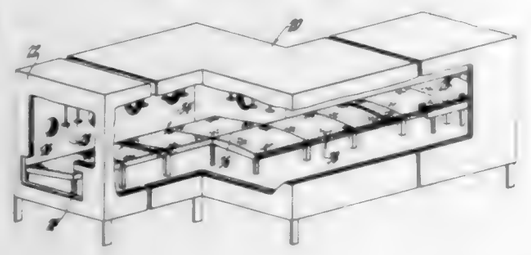
in the first direction and thereafter moved in a second direction over and along the curved bed portion.

3,375,094

METHOD AND APPARATUS FOR SHAPING GLASS OR THE LIKE ON A CURVED GAS SUPPORT BED

Harold A. McMaster, Woodville, Ohio, and Paul J. Reising, Birmingham, Mich., assignors to Permaglass Inc., Woodville, Ohio, a corporation of Ohio

Filed Jan. 11, 1965, Ser. No. 424,632
13 Claims. (Cl. 65—25)



An apparatus for treating sheets of glass including a furnace with a bed having an elongated flat portion and a curved portion disposed within the furnace. There is also included means for providing a blanket of fluid above the bed for floating respective sheets of glass over the bed. There is also included means adjacent the bed for moving the sheets along the bed as they float thereabove. The curved portion of the bed is disposed in abutting relationship to one side of and adjacent one end of the flat portion with the curved portion being curved in a direction laterally away from the longitudinal axis of the flat portion so that a sheet of glass may move along the flat portion as it is being heated and then moved in a different direction over the curved portion while being curved and then moved in a different direction along the curved portion of the bed.

3,375,095

TREATMENT OF MELTING GLASS WITH SO_2

James P. Poole, Brockport, Pa., assignor to Brockway Glass Company, Inc., Brockway, Pa.

Filed Oct. 9, 1964, Ser. No. 402,732
6 Claims. (Cl. 65—134)

In a continuous glass melting furnace wherein raw batch materials are continuously introduced at one end of the melting tank and molten glass is continuously withdrawn from the other, the improvement of substantially continuously discharging gaseous SO_2 in the molten glass body at the batch feeding end of the melting tank and adjacent to the body of the tank whereby the SO_2 rises through the molten glass to the surface and thus forms a sulfate-rich surface layer which dissolves silica scum at the surface of the molten glass body.

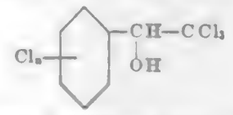
3,375,096

METHOD OF CONTROLLING PLANT GROWTH

Theodore A. Girard, Wayne, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed June 2, 1964, Ser. No. 372,073
6 Claims. (Cl. 71—122)

1. The method for the control of plant growth which comprises applying to the locus to be treated a phytotoxic amount of a compound having the structure



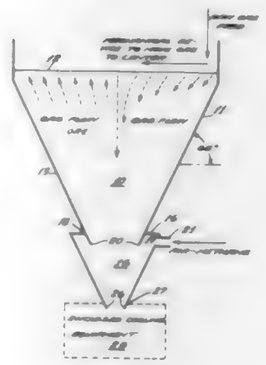
wherein *n* represents a number in the range of 1 to 5.

3,375,097

REDUCING TO MnO THE MnO_2 OF A MANGANESE ORE

Jay Y. Welsh, Catonsville, Md., assignor to Manganese Chemicals Corporation, Baltimore, Md., a corporation of Maryland

Filed Oct. 18, 1965, Ser. No. 496,965
12 Claims. (Cl. 75—1)



The higher oxide of manganese in a manganiferous ore material, in which the manganese values are present in the form of a higher oxide of manganese, is reduced to MnO by a method which comprises feeding an air-natural gas mixture (air ratio accurately controlled) through a hot bed of MnO, and then causing the resulting gaseous products (which have a net reducing effect) to pass immediately into, and upwardly and outwardly through, a bed of the ore the surface of which bed is being fed with raw ore.

3,375,098

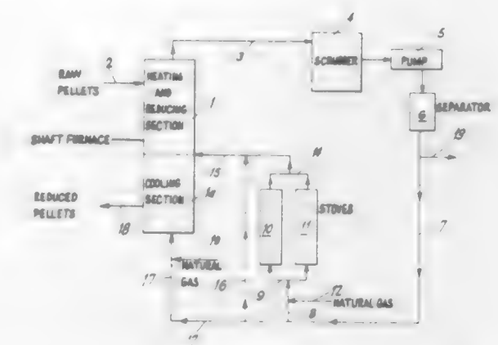
GASEOUS REDUCTION OF IRON ORES

William E. Marshall, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed July 22, 1964, Ser. No. 384,373
3 Claims. (Cl. 75—35)

1. A process for the gaseous reduction of iron ores to iron by means of a gaseous mixture consisting essentially of carbon monoxide and hydrogen in a reduction zone at high temperature, whereby carbon dioxide and water vapor are produced in said gaseous mixture, comprising the steps of regenerating the said gaseous mixture by withdrawing the top gases from the said reaction zone, cooling the top gases whereby to abstract water from them while allowing carbon dioxide to remain therein, enriching the said top gases solely with a methane-bearing gas, passing the enriched gases through a heating zone at about 2000° to 3000° F. in which a reaction between carbon dioxide and methane is caused to take place with the

production of carbon monoxide and hydrogen, moderating the temperature of the gases to a temperature substantially between about 1300° F. and about 1800° F., and returning the regenerated gases to the reduction zone.



3,375,099

PRODUCTION OF IRON FROM PELLETIZED IRON ORES

William E. Marshall, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed June 30, 1964, Ser. No. 379,282
2 Claims. (Cl. 75—35)

1. A process for the gaseous reduction of pelletized iron ores to iron which comprises subjecting said ores to gaseous reduction in a shaft furnace at a temperature of substantially 1300° to substantially 1800° F. in a highly reducing gaseous atmosphere consisting principally of carbon monoxide and hydrogen, said atmosphere being generated by the incomplete combustion of a mobile fuel with oxygen and introduced at about the mid-section of the furnace, withdrawing gases at the top of the furnace into a recirculatory system, cooling the said gases in said system so as to abstract moisture from them, reintroducing said gases into said shaft furnace at a point below the mid-section thereof whereby said cooled gases act to cool the reduced ore pellets, and mixing a quantity of a methane-containing gas with said cooled gases before reintroduction thereof into said shaft furnace whereby said methane-containing gas reacts with some of the carbon dioxide in said cooled gases with the production of carbon monoxide and hydrogen.

3,375,100

VACUUM DEGASSSING OF METAL MELTS

Eugen Vopel, Dortmund, and Horst Kutscher, Dortmund-Berhofen, Germany, assignors to Dortmund-Horder Huttenunion Aktiengesellschaft, Dortmund, Germany

No Drawing. Filed July 22, 1965, Ser. No. 474,140
Claims priority, application Germany, Aug. 4, 1964, D 45,110
3 Claims. (Cl. 75—49)

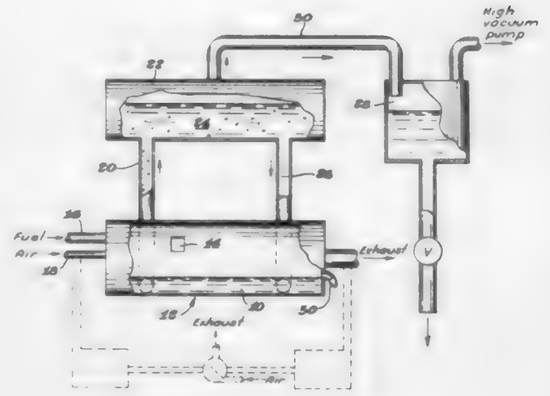
1. A process for the acceleration and improvement of the vacuum degassing of metal melts, characterised in that after the beginning of a vacuum degassing treatment, seeds of finely comminuted metals of the same composition as the metal melt being degassed are introduced into the surface part of the metal melt to initiate the formation of gas bubbles.

3,375,101

PREPARATION OF MAGNESIUM

Thomas W. Mulcihy, Jr., Freeport Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed June 2, 1965, Ser. No. 460,696
4 Claims. (Cl. 75—67)



1. A process for preparing a volatile metal which comprises:

(a) providing at about atmospheric pressure a molten slag material, said slag material produced by the reaction of a reducing agent and a metallothermically reducible volatile metal source material,

(b) adding to said molten slag quantities of said reducing agent and a metallothermically reducible volatile metal source material,

(c) raising the resulting fluid mixture of said slag to an elevated reaction chamber and providing a layer of said fluid mixture in said reaction chamber while maintaining the fluid mass at a temperature at which metallothermic reduction to the volatile metal takes place and wherein the volatile metal is in the vapor state and providing a low absolute pressure in said elevated reaction chamber above the surface of said layer,

(d) removing volatile product metal as vapor from the fluid mass and from the reaction chamber by the low pressure maintained above said layer of fluid mixture,

(e) returning the co-produced molten slag material to said heating apparatus, and

(f) removing said slag in a controlled manner from said heating apparatus without breaking the low pressure in the reaction chamber.

3,375,102

PREVENTION OF MAGNESIUM BURN-OUT IN ALUMINUM-MAGNESIUM ALLOYS

Henry C. Kawecki, Fleetwood, Pa., assignor to Kawecki Chemical Company, New York, N.Y., a corporation of Pennsylvania

No Drawing. Filed Apr. 9, 1965, Ser. No. 447,052
4 Claims. (Cl. 75—68)

2. The method of substantially preventing burn-out of magnesium added to molten aluminum in the production of an aluminum base alloy containing at least 1% by weight of magnesium which comprises incorporating in the molten aluminum an amount of cerium sufficient to introduce between about 0.0001% and 0.1% by weight of cerium into the molten aluminum.

3,375,103
ALLOYED CAST IRON
Albert Collaud, Fribourg, and Jochem Thieme, Balsthal, Switzerland, assignors to Von Roll AG., Gerlafingen, Switzerland, a corporation of Switzerland
No Drawing. Filed Nov. 30, 1964, Ser. No. 414,906
Claims priority, application Switzerland, Dec. 4, 1963, 14,891/63
7 Claims. (Cl. 75—123)

An extremely tough cast iron containing 2.5% to 3.8% carbon; less than 0.08%, and preferably less than 0.04% phosphorus; less than 0.08%, and preferably less than 0.04% chromium; less than 3 ml./100 g. hydrogen; less than 0.3%, and preferably less than 0.15% manganese; less than 0.03% sulfur; the remainder being iron with trace amounts of disturbing elements such as arsenic, boron, antimony, lead, tellurium, selenium, and a silicon content which is lower than that of conventional gray cast iron. This product is extremely tough and has good casting properties.

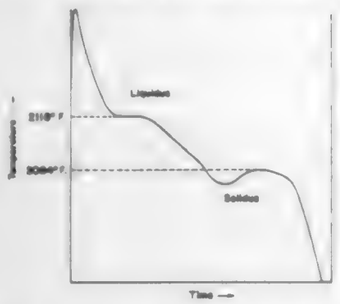
3,375,104
METHOD OF PRODUCING MAGNESIUM FERROSILICON
Melvin L. McClellan, Grand Island, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed May 27, 1965, Ser. No. 459,456
1 Claim. (Cl. 75—129)

Method of producing magnesium-containing ferrosilicon without excessive loss of magnesium by adding magnesium to molten ferrosilicon containing more than 53% silicon and then diluting the ferrosilicon with iron to obtain the desired ferrosilicon composition.

3,375,105
METHOD FOR THE PRODUCTION OF FINE GRAINED STEEL
Dunstan W. P. Lynch, Cambridge, Ohio, assignor to Vanadium Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,476
6 Claims. (Cl. 75—129)

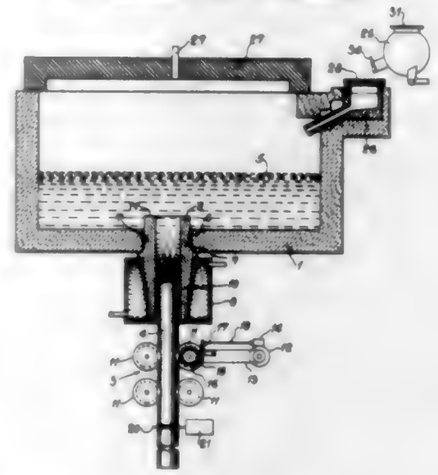
Method of producing fine grained steel by adding to said steel prior to teeming an alloy containing aluminum and silicon and another alloy containing vanadium and silicon.

3,375,106
DETERMINATION OF CARBON EQUIVALENCE OF HYPEREUTECTIC CAST IRON
Dale C. McKissick, Anchorage, and James H. Bauer, Louisville, Ky., assignors to American Standard Inc., a corporation of Delaware
Filed Feb. 2, 1965, Ser. No. 429,869
4 Claims. (Cl. 75—130)



A sample of hypereutectic iron is made hypoeutectic so that the carbon equivalence can be determined by conventional thermal analysis techniques. A relatively pure iron additive is added to the hypereutectic iron sample by melting the sample and the additive and mixing them together. The hypereutectic iron is thus converted to hypoeutectic iron and the molten mixture is permitted to cool and the cooling curve recorded. The carbon equivalence of the mixture is determined by the means of the thermal arrest technique.

3,375,107
COPPER BASE ALLOY AND METHOD FOR ITS MANUFACTURE
Paul J. Kranz, South Plainfield, N.J., assignor to American Smelting and Refining Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 11, 1965, Ser. No. 494,533
10 Claims. (Cl. 75—156.5)



A brass, which when continuously cast, has mechanical properties equal to or superior to those of a high quality leaded tin bronze. The brass contains, by weight, 0.25 to 2.5% P, 1.5 to 4% Sn, 0.25 to 4% Ni, more than 3 to less than 20% Pb, about 4 to less than 20% Zn, and balance copper and contains more zinc than tin.

3,375,108
SHAPED CHARGE LINERS
Le Roy Linwood Wyman, Sr., Bethesda, and John C. Everts, Bowie, Md., and Rolla Estus Pollard, deceased, late of Kensington, Md., by Mabel Pollard, executrix, Kensington, Md., assignors to the United States of America as represented by the Secretary of the Army
Original application Apr. 30, 1964, Ser. No. 364,891. Divided and this application Aug. 10, 1965, Ser. No. 487,952
6 Claims. (Cl. 75—202)

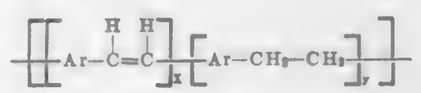
A method for the preparation of a shaped charge liner in which a powdered high refractory material is fed through a floating die to a cavity provided by an inverted conical mold, compressed and sintered to form a porous unitary hollow shaped charge liner and thereafter removed from the mold; the pores of the liner are infiltrated or densified with a ductile metal at a temperature below the sintering temperature but above the melting point of the metal for maximum densification so that on firing the shaped charge the liner will collapse to form a jet of comminuted particles directed at a target, with the refractory material making the hole in the target and the ductile metal impregnating the walls for a smooth hole.

3,375,109
PROCESS FOR PREPARING RHENIUM-REFRACTORY ALLOYS
John E. Peters, Wolcott, Conn., assignors to The Chase Brass & Copper Company, Incorporated, Cleveland, Ohio, a corporation of Connecticut
No Drawing. Filed June 24, 1966, Ser. No. 560,098
7 Claims. (Cl. 75—212)

4. The method of preparing a homogeneous binary alloy of rhenium and a refractory metal selected from the group consisting of tungsten and molybdenum wherein the tungsten-rhenium alloy contains up to about 25% rhenium and the molybdenum-rhenium alloy contains up to about 47% rhenium, which method comprises completely wetting a powder of said refractory metal in elemental condition with an aqueous solution of perrhenic acid, drying the wetted powder and subjecting this to a hydrogen atmosphere at temperatures up to 800° to 1200° C. to reduce the rhenium content to elemental rhenium intimately adhered to and at least in part alloyed with individual particles of said refractory metal powder, compacting the thus treated powder and sintering the resulting compact at temperatures of from about 2000° C. to 2550° C. in a hydrogen atmosphere to produce a homogeneous alloy of said rhenium and refractory metal by solid state diffusion.

3,375,110
PHOTO-MASKING SYSTEM USING p-XYLYLENE POLYMERS
William E. Loeb, Martinsville, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 24, 1964, Ser. No. 421,107
14 Claims. (Cl. 96—36)

8. Method for selectively etching substrate surfaces which comprises:
(a) masking an etchable substrate coated with a substantially unsaturated p-xylylene polymer having the repeating unit:

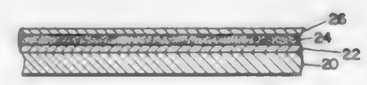


wherein Ar— is a divalent benzenoid nucleus, x is a number from 3 to about 10, inclusive, and y is a number from 0 to about 3, inclusive, to selectively expose predetermined portions of said substrate;
(b) exposing the composite structure to light in the presence of oxygen to render soluble the exposed portions of said p-xylylene polymer on said substrate;
(c) dissolving the soluble portions of said p-xylylene polymer on said substrate; and thereafter,
(d) etching the exposed substrate with a suitable etchant.

3,375,111
PREPARATION OF PRINTING PLATES AND CYLINDERS WITH RESIST-FORMING FILM USED DIRECTLY IN A CAMERA
Marcel Verdooner, Demarest, N.J., William A. Milanese, Jr., Huntington, N.Y., and Hermann Kott, Essex Fells, N.J., assignors to Publication Corporation, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 365,680, May 7, 1964. This application Feb. 9, 1965, Ser. No. 431,394
8 Claims. (Cl. 96—38)

A process of making printing plates and cylinders in which copy material is exposed on high contrast orthochromatic resist-forming film in a camera by making screen and continuous tone exposures with white light free of ultraviolet light to avoid the loss of tone gradation and to improve dot formation and further exposing the resist material by illuminating the copy material with ultraviolet light to accentuate highlights or drop out portions of the copy treated with fluorescent material and filtering out ultraviolet light entering the camera so that the highlights and drop out areas are exposed on the film entirely by fluorescent light from the copy material.

3,375,112
BINDER-FREE SILVER HALIDE PHOTOGRAPHIC PROCESS
Ignatius E. Theodorou, Watertown, Mass., assignor, by mesne assignments, to Technical Operations, Incorporated, a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,452
4 Claims. (Cl. 96—67)



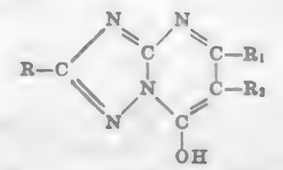
1. A photographic medium comprising a support sheet, a first high molecular weight organic polymer disposed in a subbing layer on a surface of said sheet, a stratum of substantially binder-free microcrystalline photosensitive silver halide disposed on said subbing layer, a second high molecular weight organic polymer disposed on said stratum, said polymers being characterized in that upon exposure, development and chemical fixing of said medium said polymers combine in the area of silver formation to form an insolubilized polymeric matrix in which developed silver is embedded, said polymers being different and each being selected from the group consisting of poly-N-methylethyleneimine, a copolymer of vinylpyrrolidone and vinylacetate, and polyvinylbutyral and polyvinylpyridine.

3,375,113
SENSITIZING PLANOGRAPHIC PLATES FOR PHOTO-LITHOGRAPHY
Towers Doggett, Westbrook, Maine, assignor, by mesne assignments, to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 21, 1962, Ser. No. 225,380
4 Claims. (Cl. 96—91)

1. A presensitized printing plate comprising a base material having thereon a coating comprising (1) the double metal salt of the condensation product of a diazotized para-amino-diphenylamine and formaldehyde and (2) phosphoric acid.

3,375,114
HIGH EDGE GRADIENT SILVER HALIDE EMULSION
Yoshihide Hayakawa and Yosuke Nakajima, Minamiashigara-machi, Japan, assignors to Fuji Photo Film Co., Ltd., Kanagawa-ken, Japan, a corporation of Japan
No Drawing. Filed Mar. 29, 1965, Ser. No. 443,662
Claims priority, application Japan, Dec. 26, 1961, 37/47,418
6 Claims. (Cl. 96—107)

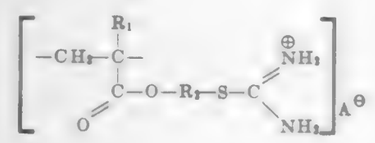
1. A photographic emulsion of silver halide characterized in that in order to increase the edge gradient of image the said emulsion contains (1) at least one compound selected from the group consisting of 4-hydroxy-1,3,3a,7-tetrazaindenes which are represented by the following structural formula:



in which R and R_1 represent a member selected from the group consisting of hydrogen atom and alkyl groups and R_2 represents a member selected from the group consisting of hydrogen atom, alkyl groups, carboxy groups, and carboalkyl groups, and (2) at least one compound selected from the group consisting of lysine, arginine and their salts.

3,375,115
SILVER HALIDE EMULSIONS CONTAINING POLY-ISOTHIURONIUM SALTS AS STABILIZERS
William F. Smith and Bernard D. Illingsworth, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Feb. 10, 1965, Ser. No. 431,701
10 Claims. (Cl. 96—109)

1. A photographic silver halide emulsion having incorporated therein a stabilizing quantity of a polymer in which at least one-third of the repeating units have the following formula:



wherein R_1 is selected from the group consisting of hydrogen and alkyl, R_2 is alkylene, n is a whole number, and A is an anion.

3,375,116
PROCESS OF RECOVERING FEED PRODUCTS FROM ANIMAL WASTES
Wilson Brady Anthony, P.O. Box 447, Auburn, Ala. 36830
Filed Nov. 26, 1963, Ser. No. 326,123
7 Claims. (Cl. 99—2)

A method of recovering nutrients and feed from animal manure comprising forming a mixture of manure and water, dewatering the mixture and using the dewatered matter as feed, and subsequently allowing the wash water to settle. The wash water forms two layers, the bottom layer of which is used as a feed for animals, either liquid, or it can be dried and used as a solid feed.

3,375,117
METHOD OF PRODUCING FROZEN DOUGH
Sebastian Schremmer, 6 Lexenriederweg 8908, Krumbach, Swabia, Germany
No Drawing. Filed Feb. 17, 1965, Ser. No. 433,520
Claims priority, application Germany, Feb. 18, 1964, Sch 34,661
10 Claims. (Cl. 99—90)

A baking dough of prolonged storability is produced of flour and dough-forming constituents by cooling the flour and preferably the constituents to a temperature below about 0° C. so that upon subsequent mixing of the flour and dough-forming constituents a dough will be formed which ab initio has a temperature of between about 0.5° C. and −10° C., and preferably of no more than 0° C. Without permitting intermediate increasing of the temperature of the dough to a significant extent, the thus-formed cold dough is then further cooled, i.e. subjected to deep freezing down to a temperature not higher than about −20° C. The thus-formed dough, due to the fact that at no time the temperature thereof has been higher than +5° C. or preferably 0° C., will be of prolonged storability.

3,375,118
RIPENING CHEESE WITH FILBERT NUT EXTRACT AND *SACCHAROMYCES CEREVISIAE* ENZYMATIC MATERIAL
James P. Cox, Portland, Oreg., assignor to Robert W. Beach, Seattle, Wash.
No Drawing. Filed Jan. 9, 1964, Ser. No. 336,645
13 Claims. (Cl. 99—116)

1. In the method of making cheese, the step of expediting ripening of unripened cheese including subjecting the cheese to the ripening action of material selected from the group consisting of filbert nut extract and *Saccharomyces cerevisiae* enzymatic material.

3,375,119
METHOD OF PRESERVING FRESH MEAT
Said A. Assaf, 7136 S. Bennett, Chicago, Ill. 60649
No Drawing. Filed Oct. 22, 1963, Ser. No. 318,103
1 Claim. (Cl. 99—157)

1. The method of preserving the desirable characteristics of fresh meat which comprises the steps of: dialyzing a slurry of meat and water; concentrating and ashing the diffusate from the dialysis; and contacting at least the surface tissues of meat with the resultant ash and sufficient alkali to raise the pH of said surface tissues to a value of from approximately 6.8 to approximately 13.0.

3,375,120
PRINTING AND COATING COMPOSITIONS
Robert K. Remer, 1500 Central St., Evanston, Ill. 60201
No Drawing. Original application July 17, 1961, Ser. No. 124,329, now Patent No. 3,303,160, dated Feb. 7, 1967. Divided and this application Aug. 4, 1966, Ser. No. 570,177
1 Claim. (Cl. 106—27)

A carbon ink composition in which the major constituents by weight are about equal parts of sugar cane wax and of a mixture of fatty acid amides in which oleamide predominates. The major constituents are: chlorinated paraffin, carbon black, alizarine blue and 2,2'-methylene-bis(4-methyl-6-tertiary-butylphenol). In use the ink is dispersed in volatile chlorinated solvent and applied by a rotogravure cylinder.

3,375,121
ADHESIVE
Vytautas E. Bildusas, Chicago, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Oct. 24, 1962, Ser. No. 232,885
12 Claims. (Cl. 106—146)

1. An adhesive composition comprising casein, an aqueous dispersion of about 1 to about 12.5 parts by weight of a member selected from the group consisting of zinc oxide, aluminum oxide and mixtures thereof, and about 10 to about 37.5 parts by weight of diammonium phosphate per 100 parts of said casein, and including from about 33 to about 400 parts by weight per 100 parts casein adhesive base of an aqueous emulsion of a material selected from the group consisting of natural and synthetic elastomers.

3,375,122
INERT AMMUNITION FILLER COMPOSITION COMPRISING AN ALUM
Milton Roth, Rockaway, N.J., assignor to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Nov. 4, 1966, Ser. No. 592,682
9 Claims. (Cl. 106—204)

Dimensionally stable inert practice ammunition fillers which are compatible with high explosives, comprising, in the main, alums combined with cellulose or dextrin to lower the overall specific gravity of the alumn combination, and with $BaSO_4$ or Fe_2O_3 to raise the overall specific gravity of the alum combination.

3,375,123
PIGMENT PREPARATIONS
Werner Krocker and Roderich König, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Continuation-in-part of application Ser. No. 447,945, Apr. 14, 1965. This application Feb. 11, 1966, Ser. No. 526,717
Claims priority, application Switzerland, Apr. 17, 1964, 5,023/64; Apr. 13, 1965, 5,183/65; Apr. 14, 1965, 5,255/65
14 Claims. (Cl. 106—308)

Pigment preparations are provided which consist essentially of

(a) a pigment powder the particle size of which does not exceed 15 microns, and

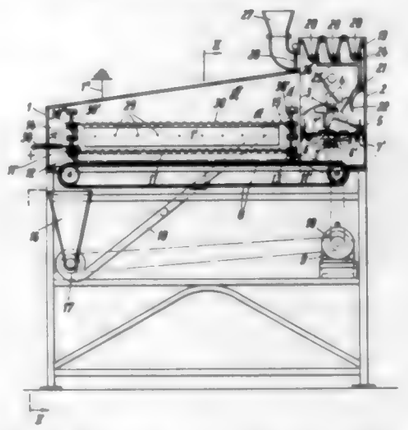
(b) a coating about each of the pigment particles which coating consists of a mixture of

a metal resinate the metal of which is a member selected from the metals of Groups II and III of the Periodic Table of Mendeleyev, and the resinate moiety being that of an acid selected from the group consisting of dihydroabietic acid and a tetrahydroabietic acid, and the partial esterification products of these acids with aliphatic saturated alcohols of from 1 to 6 carbon atoms and from 1 to 6 hydroxyl groups per molecule, said partial esterification products having an acid number of at least 80, and

an ammonium resinate, the resinate moiety of which is that defined under (b) and the ammonium moiety of which is the radical of an organic amine.

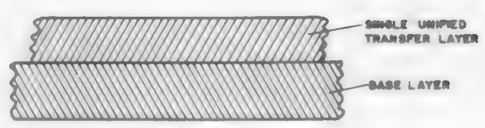
The ammonium resinate/metal resinate mixture is substantially insoluble in water, but is at least colloidally dispersible in the organic solvent constituent of gravure printing ink. The pigment preparations provided are readily dispersible preparations. The pigment preparations are useful in connection with printing inks, lacquers and plastics. There is also provided a process for the production of the new pigment preparations, as well as, industrial products, the printing inks, lacquers and plastics containing the pigment preparations of the invention.

3,375,124
METHOD AND APPARATUS FOR ELECTROSTATICALLY APPLYING FLOCK TO FILAMENT MATERIAL
Walter Linneborn, 5 Monschauer-Platz, Cologne, Germany
Continuation-in-part of application Ser. No. 11,929, Feb. 29, 1960. This application Nov. 7, 1963, Ser. No. 322,092
15 Claims. (Cl. 117—17)



Method and apparatus for applying flock under the influence of electrostatic fields produced by two electrodes positioned in a grounded conductive enclosure. Means for moving adhesive-coated filament material at substantially ground potential in longitudinal direction thereof along a predetermined path through a treatment zone within the enclosure. Negatively charged support means arranged below the predetermined path spaced therefrom in transverse direction and adapted for carrying flock material particles. Aperture-defining first electrode means through which the particles are adapted to pass, and arranged to apply an electrostatic charge to such particles, the first electrode means being located between the support means and the filament material. Means for establishing between the support means and the first electrode means a first electrostatic field having a first gradient in the transverse direction for effecting movement of the flock material particles in such transverse direction. Second electrode means in the encolsure located above the path in substantial parallelism therewith and arranged to apply an electrostatic charge to the flock particles, and means for establishing between the first and second electrode means a second electrostatic field having a second gradient opposite to the first gradient.

3,375,125
METHOD OF MAKING TRANSFER SHEET AND RESULTANT ARTICLE
Popkin Shenian, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Oct. 14, 1963, Ser. No. 316,001
4 Claims. (Cl. 117—36.4)



1. The method of forming a coated sheet article suitable for use in transferring characters to a receiving surface responsive to the application of pressure to the reverse side thereof which comprises the steps of:

(1) Disposing a coating on a polymeric base sheet, said coating being in the form of a dispersion with the particulate material having a maximum average particle size of approximately 10 microns, the coating containing the following ingredients:

(a) a major portion of a sensable component,

(b) a minor portion of a plastic binder and a plasticizer for said plastic binder, said binder and plasticizer combination being capable of forming a coating that has a releasable adherence to the base sheet and is blendable with a wax blend top coating at temperatures above 30° C.

(c) a wetting agent capable of assisting in the dispersion of the sensable material in a solvent, and

(d) an inert organic solvent medium;

(2) maintaining the temperature of said base sheet and coating above 30° C. for a time sufficient to substantially dry said coating on said base sheet;

(3) depositing on said dried sub-coat a top coating, said coating being in the form of a dispersion with the particulate material having a maximum average particle size of approximately 10 microns, the top coating containing a wax blend of a vegetable wax and mineral oil in dispersion form in a lower aliphatic alcohol and a solution of a synthetic resin ester prepared from rosin in a ketonic solvent; and

(4) maintaining the temperature of the two deposited layers at a level above 30° C. to induce the comingling of the ingredients thereof into a single unitary layer.

3,375,126
COMPOSITE FILM STRUCTURE AND PROCESS
Herbert Nagel, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 4, 1964, Ser. No. 408,744
6 Claims. (Cl. 117—46)

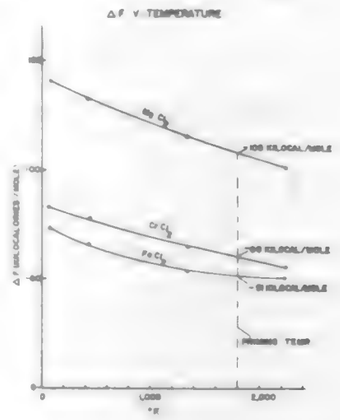
One surface of biaxially oriented polypropylene film is passed through the primary cone of a flame produced by the combustion of a gaseous mixture consisting of gaseous hydrocarbon fuel and oxygen-enriched air, the fuel equivalence ratio of said mixture being between 0.90 and 1.25, and the oxygen ratio being between 0.25 and 0.30, while supporting the film on a surface maintained at a temperature between 45° and 75° C. The resulting treated surface is coated with a vinylidene chloride copolymer coating which is, in turn, flame-treated under the same conditions, and the treated surface of the coating is top coated with an ionic copolymer coating to form a composite film structure.

3,375,127
PLASMA ARC SPRAYING OF HAFNIUM OXIDE AND ZIRCONIUM BORIDE MIXTURES
Clarence Howard Mellor, Saxonville, Mass., assignor to Fenwal Incorporated, Ashland, Mass., a corporation of Massachusetts
No Drawing. Continuation-in-part of application Ser. No. 264,206, Mar. 11, 1963. This application Feb. 19, 1964, Ser. No. 345,837
9 Claims. (Cl. 117—93.1)

1. A method of preparing a high temperature oxidation resistant coating material which comprises: introducing a mixture of hafnium oxide and zirconium boride into a high temperature plasma arc at a temperature above the melting point of the mixture to form an ionized plasma arc jet stream, said mixture consisting of not more than about 50 atomic percent, based on the metal, of hafnium oxide and the amount of hafnium oxide being sufficient to form with the zirconium diboride an oxidation resistant protective coating capable of more than one heating-cooling cycle at 3000° C. for three minutes; and thereafter condensing this stream in a nonoxidizing atmosphere and recovering the condensed material.

3,375,128
CHROMIZING AND PRIMING EMPLOYING CHROMIUM AND ANHYDROUS MAGNESIUM CHLORIDE
Alfonso L. Baldi, Drexel Hill, and William E. Nice, Chadds Ford, Pa., assignors to Alloy Surfaces Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,711
8 Claims. (Cl. 117—107.2)

The present invention relates to priming a porous metal source of chromium for chromizing by anhydrous magnesium chloride, to chromizing accomplished by such



primed porous metal source of chromium and to a chromizing retort for use in such priming and chromizing.

3,375,129
ALUMINUM PLATING EMPLOYING AMINE COMPLEX OF ALUMINUM HYDRIDE
David R. Carley and James H. Dunn, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Continuation-in-part of applications Ser. No. 255,662, Feb. 1, 1963, and Ser. No. 243,693, Nov. 16, 1962, which are continuations-in-part of application Ser. No. 25,838, May 2, 1960. This application Sept. 22, 1966, Ser. No. 581,187
17 Claims. (Cl. 117—107.2)

A process for depositing an aluminum coating on a substrate by contacting the substrate at an elevated temperature with thermally decomposable vapors of an amine complex of aluminum hydride. Diffusion of the coating may be effected into the substrate without intervening treatment.

3,375,130
ADHESION OF POLYOLEFINS TO HYDROPHILIC SUBSTANCES
William O. Kincannon, Jr., Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed June 25, 1964, Ser. No. 378,056
5 Claims. (Cl. 117—126)

The bonding of a molten polyolefin to a hydrophilic substrate of the group consisting of cellulose and glass is effected by first forming a thin film of a mixture of polymerized terpene resin and a reaction product of maleic anhydride and a polymerized terpene resin on the surface of said substrate prior to bonding.

3,375,131
FLEXIBLE COATED FILM STRUCTURE AND PROCESS OF MANUFACTURE THEREFOR
Paul Gordon Schmidt, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 29, 1963, Ser. No. 269,190
5 Claims. (Cl. 117—211)

4. A process comprising: heating a film of a polyimide derived from a dianhydride of an aromatic tetracarboxylic acid and an organic diamine to a temperature within the range of 300 to 600° C. and applying to at least one surface of said film at said temperature and atmospheric pressure a partially reduced partially hydrolyzed metal chloride to produce a metal oxide coating on said film surface which is flexible, electrically conductive and substantially transparent.

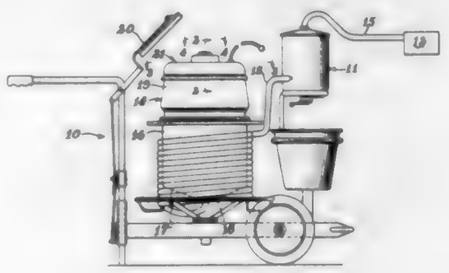
3,375,132
PROCESS FOR IMPREGNATING A CARBON ELECTROLYTIC ANODE AND ARTICLE
Robert H. Geise, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Mar. 3, 1964, Ser. No. 349,137
12 Claims. (Cl. 117—228)

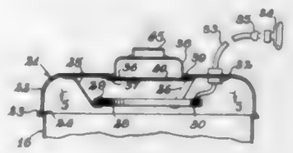
This invention relates to the impregnation of carbon electrodes with a thermosetting impregnant containing a tarry hydrocarbon, furfural and an acid catalyst.

3,375,133
ULTRASONIC METHOD FOR TREATING SINTERED BEARINGS
James J. Scott, Bedminster, N.J., assignor to Bound Brook Bearing Corporation of America, Middlesex, N.J., a corporation of Delaware
No Drawing. Filed Mar. 31, 1964, Ser. No. 356,071
3 Claims. (Cl. 134—1)

Interstitially trapped metallic particles are removed from oil-impregnated sintered metal bearings by immersing the bearings in a petroleum aliphatic solvent of low viscosity to insure the effective coupling of the bearings with a source of ultra-sonic impulses, of low solvency to preserve the impregnating oil, and of high volatility to permit rapid drying at ambient temperature to avoid surface blemishes, the solvent used having a Kauri Butanol value within the range of 25 to 50, and an ASTM distillation range of no more than 40° F., elevating the temperature of the solvent to about 150° F., subjecting the bearings so immersed to the action of ultra-sonic impulses within the range of 30,000 to 35,000 cycles per second for a period of 3 to 5 minutes to remove interstitial free particles of metal powder of which the bearings are formed, and thereafter removing the bearings from the solvent and permitting the same to dry at ambient temperature under an exhaust hood whereby the drying operation is accelerated and the driving off of impregnating oil by elevated temperature is avoided.

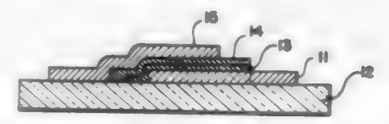
3,375,134
METHOD FOR CLEARING POLYVINYL TUBING
Alfred Paul Hope, South Haven, Mich., assignor to Werner Machinery Company, Grand Rapids, Mich., a corporation of Michigan
Filed Mar. 27, 1963, Ser. No. 268,393
4 Claims. (Cl. 134—21)





1. The method of clearing a hose made of polyvinyl acetate of a milky coating therein resulting from use with milk followed by cleaning solutions containing chlorine, said method comprising heating said coating until said coating disappear.

3,375,135
GALVANIC CELL WITH THIN METAL ELECTRODE AND METHOD OF MAKING SAME
Charles W. Moulton, Columbus, Ohio, and Michael Hacskaylo, Falls Church, and Charles Feldman, Alexandria, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed June 4, 1965, Ser. No. 461,470
16 Claims. (Cl. 136—6)



A thin film galvanic cell and method of fabrication thereof comprising an insulating substrate, a first metal electrode layer deposited on the substrate, a thin film electrolyte layer of a solid salt of said metal deposited on said first metal layer, a second solid electrolyte layer of a salt of a second metal deposited on said first electrolyte layer, and a layer of said second metal forming an electrode deposited on said second electrolyte layer. Each of said layers is deposited on the preceding layer by vacuum deposition techniques at succeedingly reduced temperatures, all of the deposition steps being carried out in the same vacuum without exposure of the substrate to an atmosphere containing an oxidizing agent. The cell may be activated either by applying a reverse charge current to the electrodes or by subjecting the cell to an environment having an elevated temperature to promote galvanic current flow between the electrodes. A portion of the upper electrode is deposited so as to be in contact with the substrate, isolated from the first electrode by the electrolyte layers, whereby a substantially planar load circuit for the cell may be deposited on the substrate in contact with both electrodes.

3,375,136
LAMINATED THIN FILM FLEXIBLE ALKALINE BATTERY
Allan M. Biggar, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed May 24, 1965, Ser. No. 458,522
8 Claims. (Cl. 136—6)

1. A thin film flexible battery capable of operating at low temperatures and pressures comprising:
(a) a negative electrode of a thin, flexible, cadmium-plated, copper-coated, felted fabric;
(b) a positive electrode of a thin, flexible, nickel oxide coated, cadmium-plated, copper-coated, felted fabric;
(c) a thin, flexible, porous, insulating spacer separating said negative electrode and said positive electrode;
(d) an aqueous alkaline solution electrolyte wetting the assembly of said negative electrode, said positive electrode and said spacer; and
(e) a vacuum sealed envelope of a thin, flexible, imperivous plastic enclosing said assembly.

3,375,137
ELECTRIC STORAGE BATTERIES OF THE LEAD-SULPHURIC TYPE AND METHOD OF MAKING THE SAME
Frank A. Rossi, York, Pa., assignor to R & C Kem Lab. Co. Inc., Hopewell Junction, N.Y.
Continuation-in-part of application Ser. No. 418,718, Dec. 16, 1964. This application Sept. 3, 1965, Ser. No. 485,042
18 Claims. (Cl. 136—27)

1. A method of making battery plates which comprises tumbling substantially pure lead balls in an entrapped body of air to form a powder while maintaining the temperature below about 135° F., mixing this powder with sulphuric acid to form a paste, applying the paste on a

grid to form a plate and forming and finishing the resulting plate, the quantity of air being such as to produce surface oxidized lead substantially free of lead suboxide and composed principally of lead oxide (PbO) and lead hydrate [$Pb_2O(OH)_2$].

17. A battery plate comprising a grid having thereon a sulfuric acid paste of a powder consisting essentially of lead-oxide in the form of surface oxidized and partly hydrated spiculate, foliate and roseate lead substantially free of lead suboxide and composed principally of lead oxide (PbO) and lead hydrate [$Pb_2O(OH)_2$].

3,375,138

FUEL CELL AND ELECTROLYTE COMPRISING A BOROPHOSPHORIC ACID-PHOSPHORIC ACID GEL

William B. Mather, Jr., Fishkill, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 25, 1963, Ser. No. 311,415
7 Claims. (Cl. 136—86)

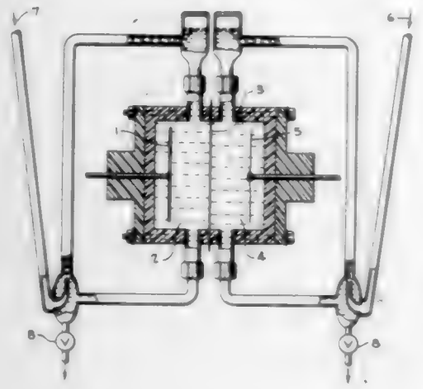
A borophosphoric acid-phosphoric acid gelled electrolyte serves as the electrolyte in a fuel cell operating at 100 to 250° C. The gelled electrolyte is prepared by mixing phosphoric acid with boric acid in a mole ratio of boric acid to phosphoric acid of between 1:7 and 1:2, while maintaining a temperature between 150° and 250° C. for as long as 72 hours. In fuel cells utilizing this electrolyte, such fuels as hydrogen, saturated aliphatic hydrocarbons, carbon monoxide and methanol may be used. Either pure oxygen or air is suitable as the oxidizing gas.

3,375,139

FUEL CELL

Johann G. Tschinkel, South Glastonbury, Ralph E. Schachat, Bloomfield, and Herman B. Urbach, Windsor, Conn., assignors, by mesne assignments, to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

Filed Nov. 14, 1963, Ser. No. 323,657
4 Claims. (Cl. 136—86)



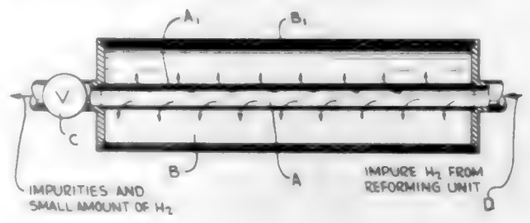
1. A fuel cell for the direct generation of electricity from a fuel and oxidant comprising a fuel electrode, an oxygen electrode, and a substantially invariant electrolyte in contact with each of said electrodes, said electrolyte consisting essentially of an aqueous solution of an alkaline hydroxide having from 0.10 to 8 percent of an oxygen complexing agent selected from the group consisting of nickel dimethyl glyoxime; nickel methyl ethyl glyoxime; nickel hydroxymethyl glyoxime; nickel methyl amyl glyoxime; nickel histidine; cobalt histidine; iron histidine; iron bisindigo; nickel phthalocyanine; iron phthalocyanine; copper nitrosonaphthol; iron dimethyl glyoxime; copper phthalocyanine; nickel oxaldihydroxamic acid; nickel glyoxaldioxime; and nickel methyl bromo glyoxime.

3,375,140

FUEL CELL WITH HYDROGEN PURIFICATION MEANS AND PROCESS OF USING SAME

Harry G. Oswin, Chauncey, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Continuation-in-part of application Ser. No. 51,678, Aug. 24, 1960. This application Sept. 8, 1964, Ser. No. 394,829
4 Claims. (Cl. 136—86)



1. A fuel cell for the generation of electrical energy directly from a fuel and oxidant comprising an electrolyte, at least one oxidizing electrode, at least one fuel electrode, said electrodes being in contact with said electrolyte, means for providing fuel to said fuel electrode and means for providing oxidant to said oxidizing electrode, said fuel electrode comprising a porous body in combination with a non-porous hydrogen diffusion membrane, said porous body and said non-porous hydrogen diffusion membrane being spaced apart to form a chamber therebetween and said non-porous hydrogen diffusion membrane being adjacent said means for providing fuel to said electrode, said means for providing fuel being so constructed and arranged that the fuel initially contacts the diffusion membrane when entering the electrode such that only hydrogen diffuses therethrough to the porous body.

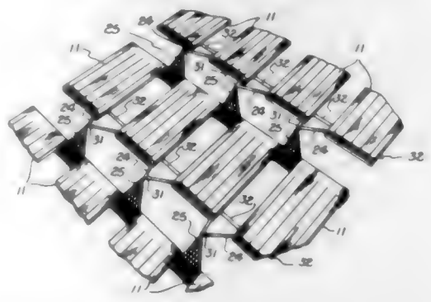
4. The in situ process of supplying a fuel gas to a hydrogen diffusion fuel cell comprising reforming hydrocarbons into gaseous components, flowing said gaseous components through a non-porous hydrogen diffusion tube under pressure whereby the hydrogen gas diffuses through said tube into a porous tube, said porous tube in combination with said non-porous tube forming the fuel gas compartment, and said porous tube being the fuel electrode, the pressure of the gas between said porous tube and non-porous tube being maintained at a lower pressure than in the non-porous tube, said non-porous tube being a member of the group consisting of palladium and palladium-silver alloys containing from 5 to 40 percent by weight silver.

3,375,141

SOLAR CELL ARRAY

Richard F. Julius, Silver Spring, Md., assignor to Aiken Industries, Inc., a corporation of Delaware

Filed July 22, 1963, Ser. No. 296,626
3 Claims. (Cl. 136—89)



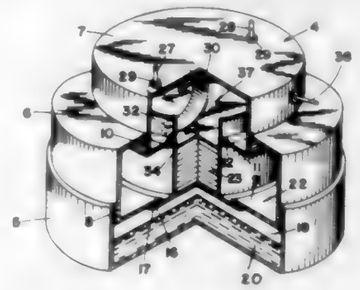
1. A solar cell array comprising
a plurality of solar cells,
each of said cells comprising a laminated structure having a slab of semiconductor material with first and second substantially planar contact surfaces, and
means for interconnecting said solar cells to produce an array in which individual cells are flexibly mounted,
said means comprising an expanded metallic mesh tab connected to said first contact surface and being disposed at an obtuse angle thereto other than parallel,
a wire tab connected to said second contact surface and being disposed at an obtuse angle thereto other than parallel,
said mesh tab and said wire tab being formed from a nickel and copper alloy which is nonmagnetic, and
means joining the mesh tabs to the wire tabs to form a series array.

3,375,142

LOW-VOLTAGE DORMANT POWER-SUPPLY APPARATUS

Virgil K. Concannon, 285 Mount Arlington Blvd., Landing, N.J. 07850

Filed Nov. 26, 1965, Ser. No. 510,460
2 Claims. (Cl. 136—90)



A dormant battery-type power supply unit is provided with a cylindrical casing structure having a cup-shaped bottom section for storing a body of activating electrolyte, an annular intermediate section and a dome-shaped top closure section interconnected and aligned in coaxial relation with each other. A cup-shaped inner cylindrical battery casing or unit holds a plurality of battery cells and is positioned to move longitudinally, from a normal withdrawn position within and coaxial with the intermediate and top sections, into the bottom section and the body of electrolyte to activate the battery. A fluid pressure chamber is provided in the top section and an annular expansion chamber in the intermediate section about the battery unit. Means are provided for applying fluid pressure to the pressure chamber to move the battery unit into the electrolyte which then rises into the expansion chamber and flows through perforations in the sidewall of the unit about the battery cells, thus rapidly activating the battery. The electrolyte body is normally sealed off in the bottom section by the engagement of complementary internal sealing flanges on the intermediate section and the battery unit.

3,375,143

METHOD OF MAKING TUNNEL DIODE

Philip L. Garner, Palm Bay, Fla., and Nicholas Fuschillo, Falls Church, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware

Filed Sept. 29, 1964, Ser. No. 399,989
5 Claims. (Cl. 148—1.5)

1. A method for fabricating a tunnel diode junction comprising the steps of sandwiching a metal slab between a degeneratively doped P type monocrystalline semiconductor wafer and a degeneratively doped N-type monocrystalline semiconductor wafer, said wafers and said slab having approximately the same sized adjacent faces, said wafers having the same bulk material, said material having a eutectic temperature with said slab, and heating the interfaces of said wafers and said slab to a value slightly in excess of the eutectic temperature of said slab and said material, said heating being discontinued and cooling

initiated following melting at the interfaces at said value slightly in excess of the eutectic temperature, said metal slab being sufficiently thin relative to the thicknesses of said semiconductor wafers to go entirely into eutectic mixture with only a portion of each of said wafers during said heating step.

3,375,144

PROCESS FOR PRODUCING ORIENTED SILICON STEELS IN WHICH AN ANNEALING SEPARATOR IS USED WHICH CONTAINS A SODIUM OR POTASSIUM, HYDROXIDE OR SULFIDE

David W. Taylor, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

No Drawing. Filed June 9, 1965, Ser. No. 462,708
10 Claims. (Cl. 148—113)

1. In a process of producing 2.0% to 4.0% oriented silicon-iron sheet stock having good die life, the steps of subjecting the stock to a continuous anneal in an atmosphere oxidizing to carbon and silicon and reducing to iron, applying an annealing separator comprising a glass forming substance and a material chosen from the class consisting of sodium and potassium hydroxides and sulfides to the surfaces of said stock, subjecting said sheet stock to a heat treatment at a sufficient temperature to cause some of said glass-forming substance to fuse with silica on the surface of said sheet stock in the presence of the stated alkali metal compounds whereby to form on the surfaces of said stock a thin and substantially uniform film of a material readily removable from the surfaces of said stock, and removing the said film from the sheet stock surfaces.

3,375,145

METHOD OF MAKING SEMICONDUCTOR DEVICES

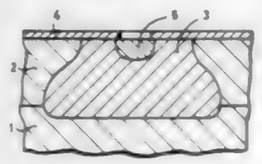
John Bernard Setchfield and Stanley George Allen, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 25, 1965, Ser. No. 482,423
11 Claims. (Cl. 148—177)

1. A method of manufacturing a semiconductor junction device which includes the steps of providing a layer of semiconductor material of one conductivity type on part of a face of an effectively insulating base, providing an electrically conducting layer on another part of said face spaced from said semiconductor layer, placing a pellet of impurity material of the opposite conductivity type in the space between said semiconductor layer and said conducting layer with the pellet in contact with each of

said layers, and heating so as to alloy said impurity material with said semiconductor layer to form a junction therein and with said conducting layer to establish ohmic electrical connection between said opposite conductivity type material and said conducting layer.

3,375,146
METHOD FOR PRODUCING A P-N JUNCTION IN A MONOCRYSTALLINE SEMICONDUCTOR MEMBER BY ETCHING AND DIFFUSION
Richard Wiesner, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed July 16, 1964, Ser. No. 383,040
Claims priority, application Germany, July 23, 1963, S 86,327
2 Claims. (Cl. 148—186)



1. The method for producing a p-n junction in a monocrystalline semiconductor member, which comprises placing upon the surface of a semiconductor of a given conductance type, a dopant material of opposite conductance type, etching the dopant from areas not to be doped, diffusing the remaining dopant into the semiconductor body; precipitating a monocrystalline silicon layer of from 5 to 10 μm thick upon the monocrystalline substrate at a temperature from 1050° to 1150° C. by pyrolytic dissociation of a gaseous semiconductor compound at the surface of the heated substrate; and after termination of the growing process tempering the resulting semiconductor body at 1100° C. for about 75 minutes whereby only one dopant diffused from the substrate into the grown layer produces the desired type of conductance at the layer side facing away from the substrate, whereas the other dopant has virtually not yet reached a large portion of the grown layer.

3,375,147
ENCAPSULATED PROPELLANT AGENT AND METHOD OF ENCAPSULATION
William J. Sparks, Westfield, and Lawrence Spenadel, Fanwood, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 802,257, Mar. 26, 1959. This application Oct. 9, 1961, Ser. No. 144,285
10 Claims. (Cl. 149—6)

1. A method for encapsulating a liquid oxidizing agent containing nitric acid as a nitrating agent which comprises contacting discrete drops of the liquid oxidizing agent with a hydrocarbon polymer solution so that the nitric acid in said drops reacts with the polymer in solution to form a nitrated hydrocarbon film around the drops, and recovering the thus encapsulated drops of said oxidizing agent.

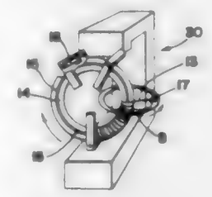
3,375,148
PYROTECHNICS COMPRISING SILVER IODATE, AMMONIUM NITRATE, NITROCELLULOSE AND NITRATE ESTERS
William G. Finnegan and Lohr A. Burkardt, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Jan. 17, 1967, Ser. No. 609,968
4 Claims. (Cl. 149—18)

An improved silver iodate containing pyrotechnic which upon combustion on the ground under quiet atmospheric conditions yields active nuclei in a size of about 1×10^{15} particles per gram. These nuclei induce regular and uniform ice crystal formation.

3,375,149
PLUTONIUM ETCHING PROCESS
Morris Kolodney, New York, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Apr. 28, 1948, Ser. No. 23,865
4 Claims. (Cl. 156—18)

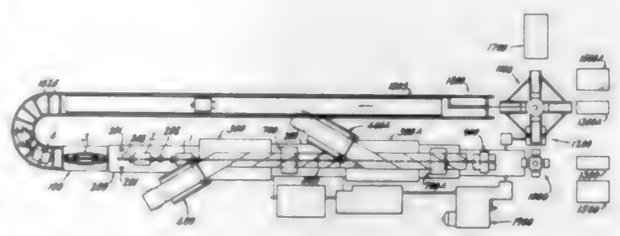
1. The method of etching the surface of a plutonium metal composition which comprises immersing a plutonium metal composition in concentrated orthophosphoric acid for a period of time sufficient to etch the plutonium surface and then withdrawing the plutonium metal composition from said acid.

3,375,150
TIRE MANUFACTURING METHODS
Alexander V. Alexeff, Cleveland, Ohio, assignor to Industrial Ovens, Incorporated, Cleveland, Ohio, a corporation of Ohio
Original application May 27, 1965, Ser. No. 459,305, now Patent No. 3,336,964, dated Aug. 22, 1967. Divided and this application Nov. 21, 1966, Ser. No. 605,118
3 Claims. (Cl. 156—117)



A method of making a reinforcing member for a radial-type pneumatic tire comprising winding a cord in a helical pattern around an annular form and then shaping the form into a U by moving a central circumferential zone of the form radially outwardly.

3,375,151
BEAD-SETTING METHOD USED IN TIRE CARCASS BUILDING PROCESS
Sheppard A. Black, Wayne, and John D. Heide, Ramsey, N.J., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Original application Dec. 4, 1962, Ser. No. 242,116, now Patent No. 3,281,304, dated Oct. 25, 1966. Divided and this application Mar. 23, 1966, Ser. No. 536,848
4 Claims. (Cl. 156—132)



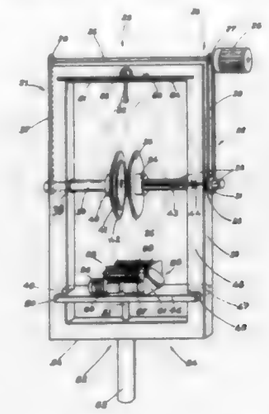
1. In a method of setting a bead on a bead region of a tire carcass ply cylinder wound on a drum no greater in diameter than the internal diameter of said carcass in the region of said bead after said carcass has been completely formed and of thereafter turning up said bead region of said ply cylinder about said bead and adhering said bead region to said ply cylinder, said bead having a greater inside diameter than the outside diameter of said ply cylinder the steps comprising: positioning said ply cylinder and said bead coaxially; first holding said bead in said coaxial relationship while advancing said bead to a position encircling said ply cylinder bead region and spaced therefrom; radially expanding said ply cylinder end region into a set position of contact with said bead; holding said ply cylinder and said bead in said set position by force applied from inside said ply cylinder with said bead concentric with the axis of said ply cylinder while releasing said first hold; and turning up said ply cylinder bead region about said bead and adhering the end of said ply cylinder to said ply cylinder while maintaining said hold from within said ply cylinder; said force being applied to said ply cylinder in such directions that said fabric in said bead region of said carcass ply cylinder, when turned up and adhered to said ply cylinder, forms an angle with the axis of said ply cylinder greater than 0° but less than approximately 70°.

3,375,152
METHOD AND APPARATUS FOR APPLYING CONTINUOUS LENGTHS OF POLYMERIC FILM TO THE SIDES OF A RIGID SUBSTRATE
Ronald E. Lundberg, Grand Island, and Frank J. Wegrzyn, Williamsville, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 321,066
10 Claims. (Cl. 156—212)

1. A process for applying continuous lengths of polymeric film to the sides of a rigid substrate comprising: continuously advancing successive lengths of a rigid substrate having a polylateral cross-section bounded by at least four substantially planar surfaces; adhesively applying a portion of the width of a continuous length of flexible polymeric film to a first substantially planar surface of each successive length of substrate; adhesively applying the remaining unadhered portion of the width of said film into contact with at least two additional serially contiguous substantially planar surfaces of each successive length of substrate to substantially wrap said substrate with said film and severing said film intermediate said successive lengths of film wrapped substrate.

3,375,153
MACHINE FOR TREATING PNEUMATIC TIRES
Roger Antraigue, 202 Quai de Jemmapes, Paris 10°, Seine, France
Filed Mar. 19, 1964, Ser. No. 353,659
Claims priority, application France, Mar. 21, 1963, 928,798; July 2, 1963, 940,154
11 Claims. (Cl. 156—410)

Machine for reconditioning a worn tire which is held between a pair of parallel disks engaging the beads of the tire and sealing the interior thereof to enable the introduction of a pressure fluid (air) to stiffen the tire for a treatment of its outer surface by cutting and scraping tools.



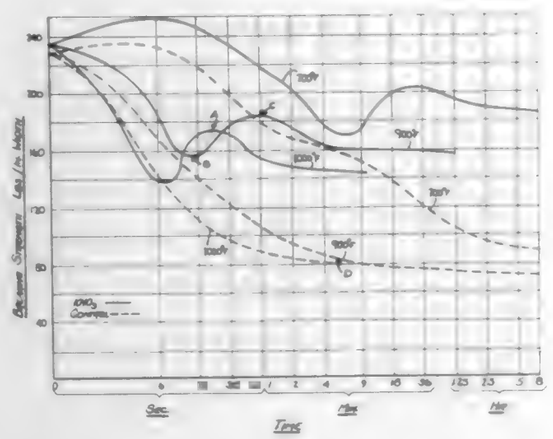
3,375,154
TIRE BUILDING DRUM
William C. Ruttenberg, Stow, and Woodrow Teater, Barberton, Ohio, assignors to The Akron Standard Mold Company, Akron, Ohio, a corporation of Ohio
Filed Apr. 9, 1965, Ser. No. 446,924
15 Claims. (Cl. 156—418)

1. A collapsible tire building drum comprising, a plurality of segment assemblies arranged to form a continuous tire building surface, a shaft spaced within said segment assemblies and adapted for rotating said drum, a cone member mounted on and adapted for axial movement relative to said shaft, a plurality of angularly disposed pin means mounted on and in circumferentially spaced relationship around said cone member, said segment assemblies being slideably mounted on said pin means for radial collapsing and expanding movement of said segment assemblies upon axial movement of said cone member relative said shaft.

3,375,155
TREATMENT OF FIBROUS GLASS
Richard G. Adams, Upper Montclair, N.J., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 284,220, May 29, 1963. This application Aug. 15, 1966, Ser. No. 572,249
10 Claims. (Cl. 161—93)

A process for heat-cleaning fibrous glass, such as textiles, in such a manner as to inhibit strength loss by following the steps of treating the glass with an oxygen yielding salt of potassium, sodium, cesium and rubidium, drying the treated glass (if not already dry), and then heating the fibrous glass at a temperature of between about 600° F. and 1250° F. until substantially all of the sizing has been removed, i.e, until the ignition loss is about

0.1% or less. Optionally, further heat treatment is applied to increase tensile strength.



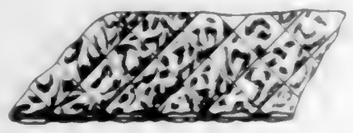
Also, the fibrous glass which has been desized according to the foregoing procedure, said glass being characterized by a tensile strength of at least 70% of that of the untreated greige fabric, and having an excellent white color.

3,375,156

NONWOVEN FABRICS AND METHOD FOR THE PRODUCTION THEREOF

James Macmillan Edgar, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 15, 1963, Ser. No. 280,691
9 Claims. (Cl. 162—132)



1. Method for producing a high bulk laminated fabric comprising the steps of

(a) providing at least one waterleaf (I) comprising synthetic polymer fibers,

(b) providing at least one waterleaf (II) comprising spontaneously elongatable synthetic polymer fibers selected from the group consisting of polyesters, polyamides, polyurethanes, and polyolefins,

each of said waterleaves (I) and (II) being separately prepared by depositing an aqueous slurry onto a papermaking screen, the fibers of waterleaf (II) being spontaneously elongatable by at least 3% in length more than the fibers of waterleaf (I),

(c) forming a fibrous body by arranging said waterleaves (I) and (II) in a superposed relationship, and

(d) fusing said body into a coherent integral fabric of densified and essentially undensified portions by applying mechanical pressure thereto in a predetermined pattern of intersecting lineal regions defining enclosed geometrical shapes large enough to permit said waterleaf (II) containing spontaneously elongatable fibers to expand freely beyond the confines of the said pattern and to buckle away from said waterleaf (I) not containing spontaneously elongatable fibers, while simultaneously heating said body to spontaneously elongate fibers of said waterleaf (II) by at least 3% in length more than the fibers of said waterleaf (I).

3,375,157

CONTROLLING AND ERADICATING AGRICULTURAL NEMATODES WITH HALOGENATED PHENYL PROPYNYL ETHERS

Earl P. Williams, Pen Argyl, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 24, 1963, Ser. No. 318,533
8 Claims. (Cl. 167—30)

A method is provided for controlling and eradicating nematodes from nematode infested soil by applying to or spraying such soil with a nematocidal amount of a halogenated phenyl propynyl ether.

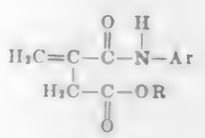
3,375,158

PROCESS FOR CONTROLLING FUNGI WITH ITACONAMIC ESTERS

Ralph P. Neighbors, Olathe, Kans., assignor, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 13, 1963, Ser. No. 323,255
6 Claims. (Cl. 167—30)

1. A process for the control of fungi comprising applying to the locus of the fungus attack a fungicidally effective amount of an intaconamic ester of the formula



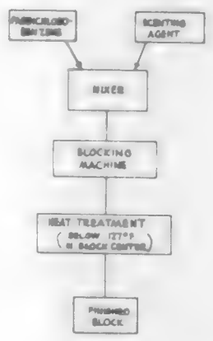
in which Ar is selected from the group consisting of phenyl, 3,4-dichlorophenyl, 3-chlorophenyl, 5-chloro-2-methylphenyl, 3-chloro - 2 - methylphenyl, 3-nitrophenyl, 4 - chlorophenyl, 2 - methylphenyl, 2,5 - dimethylphenyl, 3,5-dichlorophenyl, 3-bromophenyl, 2 - methoxy - 5-nitrophenyl and naphthyl and R is an alkyl group having from 1 to 3 carbon atoms.

3,375,159

PARADICHLOROBENZENE BLOCK

Francis E. Batton, New Martinsville, W. Va., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 17, 1964, Ser. No. 397,296
5 Claims. (Cl. 167—30)



A method of improving the strength of scented paradichlorobenzene blocks or cakes is described in which the paradichlorobenzene block or cake containing the scenting agent is passed through a heat source and heated to a temperature and for a period of time sufficient to coalesce the particles on the surface of the block or cake without deforming it. Specifically the heat treatment is conducted at such temperatures and for periods of time

sufficient to prevent the block from achieving a temperature of 127° F. in the center thereof. Various methods of heating the block are described. A specific example on electrical heating is shown.

3,375,160

METHODS OF COMBATTING GASTROPODS WITH NITRO SUBSTITUTED SALICYLANILIDES

Jack D. Early, Bethesda, Md., and John P. Chupp, Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 462,127, June 7, 1965. This application Mar. 22, 1966, Ser. No. 536,257
7 Claims. (Cl. 167—31)

Gastropodicidal methods employing 2'-chloro-4'-nitrosalicylanilides characterized by having a branched chain alkyl grouping in the 3-position of the salicyl nucleus.

3,375,161

4-CYANO-3,5-DICHLOROISOTHIAZOLE AS A MICROBIOCIDE

Gert P. Volpp, Princeton, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 12, 1967, Ser. No. 637,931
2 Claims. (Cl. 167—33)

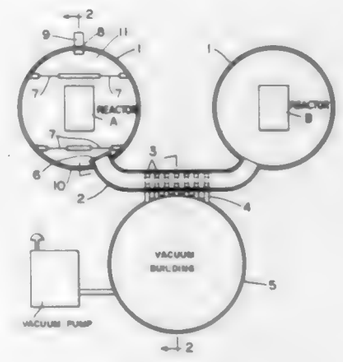
Compositions containing 4-cyano-3,5-dichloroisothiazole are effective in suppressing or eliminating microorganisms which attack oil, emulsion paints and textiles and cause slime formation in paper pulp.

3,375,162

NUCLEAR REACTOR CONTAINMENT SYSTEM AND RELIEF VALVE

Ivan L. Wilson, Islington, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed Aug. 9, 1965, Ser. No. 478,070
9 Claims. (Cl. 176—37)



A containment system for a nuclear reactor is described, in which the reactor may be subject to breakdown and release of gaseous radioactive materials into the surroundings. The reactor is enclosed in a gas-tight building and connected through a pressure relief valve to a vacuum building. A sub-atmospheric pressure is maintained in this vacuum building and the relief valve is made to open to connect the reactor and vacuum buildings if at any time the pressure in the reactor building, normally maintained at atmospheric, rises slightly above it. The volume of the reactor and vacuum buildings is so chosen with respect to the pressure maintained in the vacuum building that upon connection of the two buildings the pressure will not be above atmospheric for the worst possible breakdown contemplated.

3,375,163

PARASITICIDE METHODS AND COMPOSITIONS EMPLOYING ORGANOFLUOROSILANES

Wendell K. Whitney, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 18, 1964, Ser. No. 368,413
7 Claims. (Cl. 167—39)

1. A method for controlling arthropods and fungi which comprises exposing matter infested with these organisms to the vapors of an organofluorosilane corresponding to the formula

$$(R)_n—Si—F_{(4-n)}$$

wherein each R represents a member of the group consisting of lower alkyl, lower alkenyl and lower alkynyl and n represents one of the integers 1, 2, and 3; the exposure being carried out in an enclosed space and with an amount of organofluorosilane sufficient to provide a concentration of at least 0.10 pound per 1000 cubic feet of enclosed space.

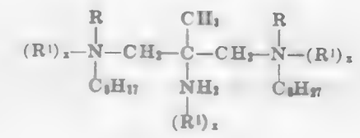
3,375,164

TRIAMINE ACID ADDITION SALTS IN ANTIFUNGAL METHODS AND COMPOSITIONS

Michael G. Mulinos, Westfield, N.J., assignor to Commercial Solvents Corporation

No Drawing. Continuation-in-part of application Ser. No. 56,661, Sept. 19, 1960. This application Nov. 17, 1964, Ser. No. 411,702
17 Claims. (Cl. 167—58)

1. A process for treating superficial fungus infections which comprises applying to the skin as the essential antifungal agent a triamine acid salt having the following general formula:



wherein R represents a member selected from the group consisting of hydrogen and methyl, with the proviso that if one R is methyl then the other R must be hydrogen; R^1 represents a member selected from the group consisting of caprylic, propionic and undecylenic acids, and x is selected from the group consisting of 0 and 1, with the proviso that at least one x is 1, in an effective antifungal amount.

3,375,165

FUSIDIC ACID SALTS OF TETRACYCLINE BASES AND THERAPY

Guy Hagemann, Nogent-sur-Marne, and Lucien Penasse, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Aug. 11, 1964, Ser. No. 388,954
Claims priority, application France, Oct. 22, 1963, 951,378; Jan. 22, 1964, 961,175
6 Claims. (Cl. 167—65)

1. A salt of fusidic acid and the free base form of an antibiotic of the tetracyclic group.

3. A therapeutic composition comprising from 150 mg. to 600 mg. of the fusidic acid salt of tetracycline and a major amount of an inert pharmaceutically acceptable excipient.

3,375,166

METHODS OF PROLONGED INFLAMMATORY TREATMENT

Robert E. Harman, Avenel, Frederick A. Kuehl, Jr., Rumson, Robert G. Strachan, Summit, and Ralph F. Hirschmann, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application July 18, 1963, Ser. No. 296,111, now Patent No. 3,285,935, dated Nov. 15, 1966. Divided and this application Sept. 14, 1965, Ser. No. 510,999

3 Claims. (Cl. 167—65)

1. A method of prolonged localized treatment of inflammation which comprises the topical administration to a mammal of a compound selected from the group consisting of the glucuronide of 1-p-chlorobenzoyl-2-methyl-5-methoxy-3-indolyl acetic acid and the lower alkyl esters of per-lower alkanoylated glucuronide of 1-p-chlorobenzoyl-2-methyl-5-methoxy-3-indolyl acetic acid.

3,375,167

6 - HYDROXYMETHYL - 3 - OXO - 4,6 - DIENIC STEROIDS, ACYL DERIVATIVES THEREOF, AND PROCESS FOR PREPARING SAME

Derek Burn, Michael George Lester, and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited

No Drawing. Filed May 20, 1965, Ser. No. 457,522

Claims priority, application Great Britain, June 3, 1964, 22,960/64; Sept. 1, 1964, 35,827/64

28 Claims. (Cl. 167—74)

5. A compound selected from the group consisting of 6-hydroxymethyl-pregna-4,6-dienic-3,20-diones and 6-hydroxymethylandrosta-4,6-dienic-3-ones and their corresponding 6-acyl derivatives, wherein the said acyl group is a residue of an alkanoic acid having up to 10 carbon atoms.

26. A pharmaceutical preparation comprising a 6-hydroxy- or acyloxymethyl-3-oxo-4,6-dienic steroid according to claim 5 in admixture with one or more solid or liquid pharmaceutically acceptable inert carriers.

3,375,168

WATER-SOLUBLE PHOSPHATE COMPOSITIONS AND PROCESS FOR PREPARING

John Hedley Curtin, North Ryde, New South Wales, and Julian Gagolski, Chatswood, New South Wales, Australia, assignors to The Colonial Sugar Refining Company, Sydney, New South Wales, Australia

Continuation-in-part of application Ser. No. 262,230, Mar. 1, 1963. This application Nov. 27, 1964, Ser. No. 414,074

13 Claims. (Cl. 167—93)

1. A composition of matter consisting of a complex association of two components (a) and (b), said component (a) consisting of at least one salt of a sugar phosphate, and said component (b) consisting of an inorganic phosphate, wherein the cation is selected from the group consisting of Ca^{2+}, Cu^{2+}, Mn^{2+}, Zn^{2+}, Ni^{3+}, Sn^{2+}, Fe^{2+}, Fe^{3+}, Al^{3+}; said association being such that a least 2% by weight of component (b) based on the weight of component (a) is soluble in water under ambient conditions when the total dissolved sugar phosphate and inorganic phosphate exceeds about 5 parts per 100 parts water by weight.

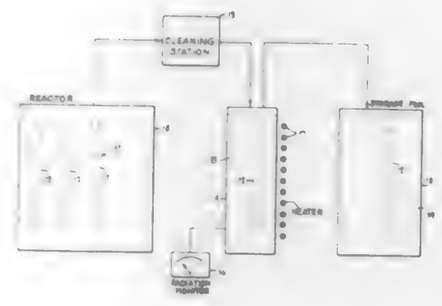
3,375,169

METHOD FOR MINIMIZING CORROSION OF REACTOR ELEMENTS

William E. McHugh, Madison Heights, and Albert A. Shoudy, Jr., Royal Oak, Mich., assignors to Atomic Power Development Associates, Inc., Detroit, Mich., a corporation of New York

Filed Aug. 23, 1966, Ser. No. 574,445

2 Claims. (Cl. 176—30)



A method of minimizing the corrosion of a reactor element by removing the element from a reactor core and placing it in a tank of liquid. Then the element is treated with an electrolysis metal plating additive of nickel or chromium to form a corrosion resistant plating thereon, and then the element is transferred to a storage pool.

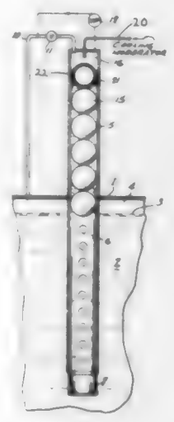
3,375,170

FLOATING ABSORBER SHUTOFF DEVICE FOR NUCLEAR REACTOR

Philip H. Stubley, Clarkson, Ontario, Canada, assignor to Atomic Energy of Canada, Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed July 8, 1966, Ser. No. 563,791

7 Claims. (Cl. 176—35)



1. In a nuclear reactor, said reactor including a core and a moderator liquid within said core, a channel in said core extending vertically through said core and above the normal level of the surface of the moderator liquid and the interior of said channel being in communication with the moderator liquid, a buoyant neutron absorber material in said channel, a pressure gas supply source, a conduit connecting the upper end of said channel to the source, the pressure of said gas supply source being greater than that on the said surface of said moderator liquid in said core, valve means in said conduit for preventing flow of pressure gas into said channel, and pump means for evacuating gas from said channel and for causing liquid entry into said channel and rising of the surface of the last mentioned liquid above the level of said surface of liquid in said core, said absorber floating in the liquid in said channel, and the level of the surface of the liquid in said channel being chosen whereby said absorber rises above said level of the surface of moderator liquid in said core, said absorber dropping into said core below the said level of the surface of the moderator liquid in said core upon opening of said valve and consequent connection of said channel to said pressure gas source, a dump space below said core for receiving moderator liquid upon its release from said core, means for maintaining gas in said dump space under pressure and means retaining said moderator liquid within said core in the presence of chosen gas pressure within said dump space, and means connecting said conduit to gas in said dump space, said pressure gas supply source comprising said gas in said dump space.

3,375,171

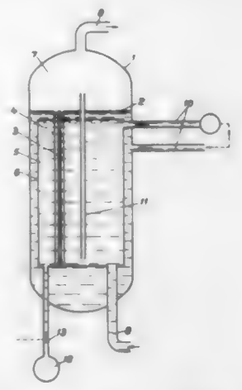
BOILING HEAVY WATER REACTOR

Kare Hannerz, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Oct. 12, 1965, Ser. No. 495,129

Claims priority, application Sweden, Oct. 23, 1964, 12,768/64

5 Claims. (Cl. 176—54)



A boiling heavy water reactor having a submerged, pressure regulated, separate moderator tank provided with a plurality of tubes extending from the inside of the moderator tank into a steam space of the reactor above the tank. These tubes can, after a fast shutdown of the reactor, provided that the pressure in the moderator tank is reduced, lead the heavy water steam formed by the residual power into the cooler liquid moderator, where the steam will be condensed.

ERRATUM

For Class 176—37 see:
Patent No. 3,375,162

3,375,172

FUEL ASSEMBLY FOR NUCLEAR REACTORS

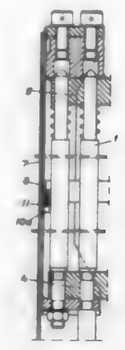
Ragnar Mansson, Vasteras, and Harald Skar, Lidingo, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed May 4, 1966, Ser. No. 547,541

Claims priority, application Sweden, May 4, 1965, 5,789/65

9 Claims. (Cl. 176—78)

A nuclear fuel assembly having a number of parallel fuel rods spaced apart by cross-spacers and an axial spacer for determining the axial position of the cross-spacers. The fuel rods are supported by fixing plates, being secured to one and guided in holes in another. The



axial spacer forms a supporting part of the fuel assembly, and all fuel rods are undivided; have no supporting function; and are alike with regard to their mode of connection and support.

3,375,173

FERMENTATION PROCESS FOR THE PRODUCTION OF L-THREONINE

Sukeji Nishimura, Tokyo, Yutaka Sugawara, Higashi-Murayama-shi, Tokyo, and Takeshi Nozaki, Tokyo, Japan, assignors to Chugai Seiyaku Kabushiki Kaisha, Chuo-ku, Tokyo, Japan, a corporation of Japan

No Drawing. Filed June 22, 1965, Ser. No. 466,103

Claims priority, application Japan, July 1, 1964, 39/37,014

8 Claims. (Cl. 195—29)

A process for preparing L-threonine useful in the synthesis of peptides by cultivating a bacteria of the genus Proteus under submerged aerobic conditions in an aqueous nutrient medium. The medium contains homoserine unless isoleucine requiring mutants of Proteus are cultivated in which case the medium must contain isoleucine or α-aminobutyric acid.

3,375,174

MICROBIOLOGICAL HYDROXYLATION OF STEROIDS

Pierre Crabbé and Carlos Casas-Campillo, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,085

4 Claims. (Cl. 195—51)

Microbiological process of preparing the 15α-hydroxy derivatives of estrone and estradiol and the 6β-hydroxy derivatives of the 3-methyl ethers of estrone and estradiol by subjecting the corresponding desoxy compounds to the enzymes of *Gibberella fujikuroi* (*Fusarium moniliforme*), the thus prepared hydroxy compounds being estrogenic agents useful in fertility control.

3,375,175

PYROLYSIS OF COAL

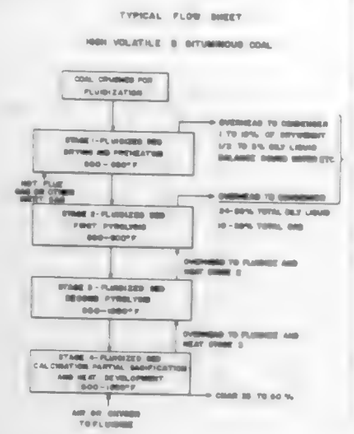
Ralph Tracy Eddinger, Princeton Junction, and John F. Jones, Princeton, N.J., and Leonard Seglin, New York, N.Y., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 21, 1965, Ser. No. 426,812

8 Claims. (Cl. 201—31)

Increased yield of oils and tars are obtained from the pyrolysis of coal by conducting the pyrolysis in at least three fluidized stages, the first being carried out under oxygen free conditions below the fusion temperature of the coal by sufficiently high temperature to remove about

1–10% volatiles from the dry coal, conducting the so treated coal to at least a second stage to remove nearly


TYPICAL FLOW SHEET
HIGH VOLATILE B BITUMINOUS COAL
COAL CRUSHED FOR FLUIDIZATION
STAGE 1 - FLUIDIZED BED DRYING AND PREHEATING 600 - 650°F
OVERHEAD TO CONDENSER 1 TO 10% OF BITUMINOUS 1/2 TO 2% OILY LIQUID BALANCE DOMES WATER ETC.
HOT FLUE GAS OR OTHER HEAT SOURCE
OVERHEAD TO CONDENSER 20-25% TOTAL OILY LIQUID 10 - 20% TOTAL GAS
STAGE 2 - FLUIDIZED BED FIRST PYROLYSIS 800–900°F
OVERHEAD TO FLUIDIZE AND HEAT STAGE 2
STAGE 3 - FLUIDIZED BED SECOND PYROLYSIS 900–1000°F
OVERHEAD TO FLUIDIZE AND HEAT STAGE 3
STAGE 4 - FLUIDIZED BED CALCINATION PARTIAL GASIFICATION AND HEAT RECOVERY 900–1000°F
COKE 30 TO 50 %
AIR OR OXYGEN TO FLUIDIZE

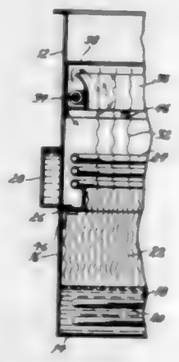
all the volatiles from the coal, and to a final stage to substantially devolatilize the coal, and recovering the condensables from the overheads of the stages.

3,375,176
CHEMILUMINESCENT FORMULATION
Lee E. Humiston, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Sept. 23, 1964, Ser. No. 399,429
2 Claims. (Cl. 252—188.3)

1. A chemiluminescent formulation comprising the following

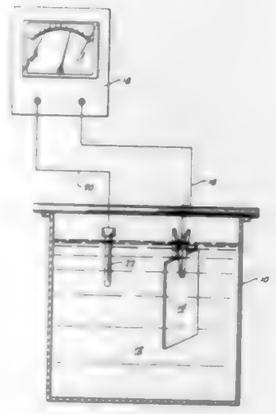
Ingredients:	Percent by weight
Paraffin	15–55
Microcrystalline wax	15–55
Mineral oil	5–25
Methylphenylsilicone	1–20
Tetrakis(dimethylamino)ethylene	20–30

3,375,177
VAPOR DEGREASING WITH SOLVENT DISTILLATION AND CONDENSATION RECOVERY
Burton Rand, Narberth, Pa., assignor to Autosonics, Inc., Conshohocken, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 368,116, May 18, 1964. This application May 5, 1967, Ser. No. 637,318
5 Claims. (Cl. 203—39)



1. Apparatus comprising:
(a) an open-topped receptacle adapted to be partially filled with a volatile solvent,
(b) means adjacent the bottom of said receptacle for containing the solvent to be vaporized,
(c) first condenser means supported by said receptacle above the solvent for condensing vapors generated from said solvent and thereby defining the upper limit of a vapor zone above the solvent,
(d) a discrete second condenser means supported by said receptacle above said first condenser means and substantially below the upper edge of the receptacle for condensing solvent vapors unaffected by said first condenser means, and
(e) said second condenser means being spaced from walls of the receptacle, means defining a convection flow path for solvent vapors between said wall and outer periphery of said second means, and said second condenser means being substantially colder than said first condenser means,
(f) and a condensate collection trough below said condenser means for collecting condensate and preventing condensed moisture for mixing with the solvent,
(g) said second condenser means including at least one refrigerant-carrying coil, a shield for said second condenser means, said shield being hollow, and said second condenser means being between a portion of said shield and a wall of said receptacle.

3,375,178
METHOD OF CONFIRMING THE OCCURRENCE OF PLATING IN ELECTROLESS NICKEL-PLATING
Carl E. Locke, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed May 28, 1964, Ser. No. 370,886
2 Claims. (Cl. 204—1)



A method of confirming the occurrence of plating in electroless nickel-plating wherein the bath contains hypophosphite anions comprising adjusting the pH to between about 4.0 and about 6.0 and measuring the potential difference between the material being plated and a reference electrode in electrochemical communication with the plating bath.

3,375,179
METHOD OF ANODIZING BERYLLIUM AND PRODUCT THEREOF
Richard D. Pittman, Burbank, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Oct. 29, 1964, Ser. No. 407,454
4 Claims. (Cl. 204—32)

1. A method of coating beryllium comprising the steps of immersing a piece of beryllium in an aqueous alkaline bath having a free hydroxyl ions and borate ions, placing a potential between said piece and a second terminal sufficient to generate a current in said bath wherein said piece is anodic, and anodizing said piece to produce a coating thereon.

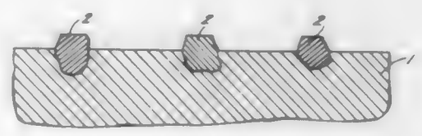
2. The product produced by the process of claim 1.

3. A process of anodizing beryllium comprising the steps of preparing a desired surface on the beryllium metal by a selected cleaning technique, immersing the beryllium metal in an aqueous alkaline bath of an alkali metal borate solution containing free hydroxyl ions, connecting a source of potential between the beryllium metal as anode and a cathode, and passing current through the electrolyte bath by means of the source for a selected time.

3,375,180
ELECTROCHEMICAL PREPARATION OF METAL SULFIDES
Harold J. Heinen, Don H. Baker, Jr., and John M. Gomes, Reno, Nev., assignors to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed Apr. 2, 1965, Ser. No. 445,280
11 Claims. (Cl. 204—61)

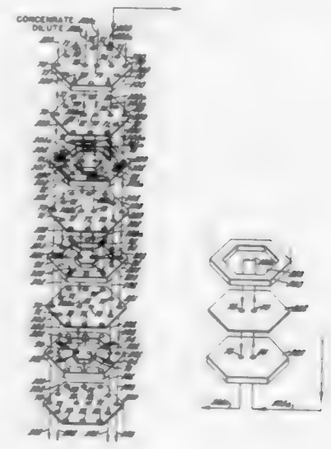
1. A method for production of a high-purity. Group VI–B metal sulfide comprising electrolyzing a molten salt bath containing a feed material from the group consisting of (1) a mixture of the corresponding Group VI–B metal oxide and free sulfur and (2) an impure Group VI–B metal sulfide.

3,375,181
METHOD OF FORMING AN ABRASIVE SURFACE INCLUDING GRINDING AND CHEMICALLY DRESSING
Günther Koech, Hellweg 97, Bielefeld, Germany
Continuation-in-part of application Ser. No. 44,353, July 21, 1960. This application Apr. 21, 1964, Ser. No. 369,048
Claims priority, application Germany, July 2, 1956, K 29,247
9 Claims. (Cl. 204—141)



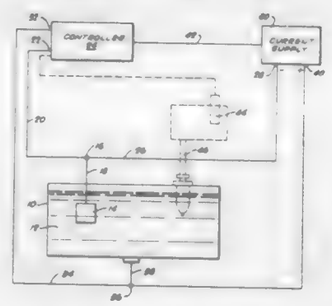
1. A method of producing a coarse, rough operating surface portion on metal bodies such as tools, friction wheels, belt pulleys, clutch discs and the like having at least at said operating surface portion a surface zone of heterogeneous structure including a metallic main component having distributed therethrough and embedded therein a plurality of sharp-edged metal carbide particles, the latter terminating in a common surface plane outwardly spaced from said main component, comprising the steps of grinding said surface portion of a metal body of substantially the desired shape so as to remove therefrom a layer having a thickness equal to only a fraction of the thickness of said harder particles, thereby also removing the outer portions of said harder particles and forming sharp edges on the remainders of the same which remain anchored in said metallic main component of said surface zone and terminate in the surface plane formed by said grinding; and chemically selectively removing the upper layer of only said main component of the thus ground surface zone, so as to form an operating surface portion consisting of said softer main component and of said sharp-edged metal carbide particles projecting outwardly from said softer main component and terminating in said surface plane of said operating surface portion, whereby due to the sharpening of said harder particles by said grinding and due to the subsequent removal of said upper layer of said main component a rough operating surface portion is formed.

3,375,182
ELECTRODIALYSIS METHOD AND APPARATUS HAVING RADIALLY SYMMETRICAL FLOW PATHS
William Kwo-wei Chen, Stamford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Original application Mar. 30, 1962, Ser. No. 195,352, now Patent No. 3,228,867, dated Jan. 11, 1966. Divided and this application July 19, 1965, Ser. No. 484,499
3 Claims. (Cl. 204—180)



1. A method of fluid demineralization in a multi-compartment electrodialysis device characterized by the steps of flowing a solution in radially symmetrical flow paths defined by a plurality of membrane gaskets spaced alternately between membranes to form concentrating and diluting chambers, said flow paths commencing in a plurality of source inlets located in the outer periphery of said flow paths and moving toward a constricted central flow path wherein there is established a solution velocity gradient in inverse relationship to a solution salinity gradient at constant applied voltage between a pair of electrodes while demineralizing said solution and separating the central constricted flow path into product and concentrate streams.

3,375,183
APPARATUS FOR MINIMIZING CORROSION OF METALS
William P. Banks and Merle Hutchison, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Sept. 23, 1964, Ser. No. 398,597
1 Claim. (Cl. 204—196)

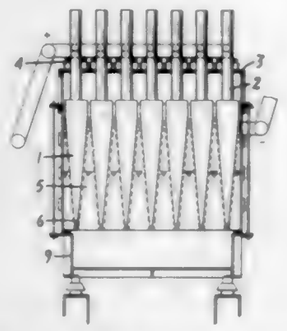


A method for anodically passivating a vessel containing a corrosive electrolyte without the necessity of utilizing a reference electrode except for the period of time in which a polarization curve is obtained. When obtaining the polarization curve, the potential between the cathode and the vessel is monitored to pick out the passive range of the vessel. The cathode is then connected directly to the controller and the controller is set to control the potential within the passive region.

3,375,184
ELECTROLYTIC CELL WITH CONTROLLABLE MULTIPLE ELECTRODES

Umberto Giacopelli, Rosignano Solvay, Livourne, Italy, assignor, by mesne assignments, to Solvay & Cie, Brussels, Belgium, a corporation of Belgium

Filed Oct. 19, 1964, Ser. No. 404,792
Claims priority, application Belgium, Oct. 23, 1963, 512,368
5 Claims. (Cl. 204—225)

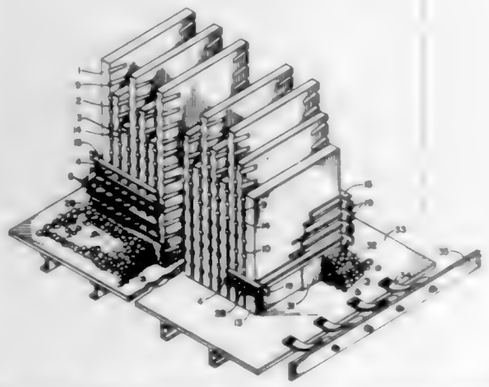


1. Electrolytic cell with diaphragm comprising a succession of alternating anodes and cathodes, characterised in that the electrodes are in the form of alternately reversed wedges, the anodes and cathodes having the same wedge angle, and that every anode fits in the free space left between two adjacent cathodes, the distance between the parallel surfaces of the electrodes being determined by the height of one series of electrodes of the same sign relative to that of the electrodes of opposite sign.

3,375,185
ANODE FOR ALUMINA REDUCTION CELLS

Robert M. Kibby, Florence, Ala., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed July 17, 1964, Ser. No. 383,370
6 Claims. (Cl. 204—280)

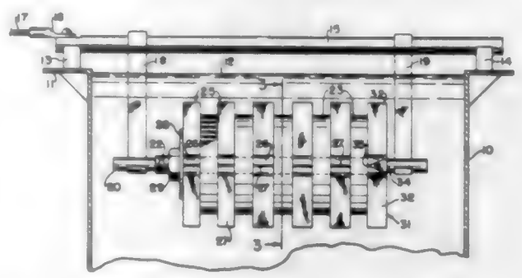


The anode for alumina reduction cells comprises a pack of vertically disposed prebaked carbon slabs including electrical contact members extending into spaces between the slabs. In a preferred embodiment adjacent faces of the slabs are formed with opposed elongate recesses into which the contact pins extend to key adjacent slabs together against relative movement, and in another embodiment the slabs are spaced apart from one another, the contact members being flat bars extending inwardly between slabs. Carbon paste between the slabs surrounds the contact members, holding them in place forming an integral structure. As the paste is consumed somewhat more rapidly than the slabs, channels are created to assist in removing gas, with the lowermost contact members being removed from time-to-time as the anode is consumed, thus creating preformed gas channels to relieve the shrouding effect of the gas.

3,375,186
APPARATUS FOR THE MANUFACTURE OF ELECTRICAL COILS

Addison Romaine Smith II, Louisville, Ky., assignor to Anaconda Aluminum Company, a corporation of Montana

Original application Feb. 19, 1962, Ser. No. 174,171, now Patent No. 3,334,413, dated Aug. 8, 1967. Divided and this application Mar. 9, 1967, Ser. No. 643,755
4 Claims. (Cl. 204—297)

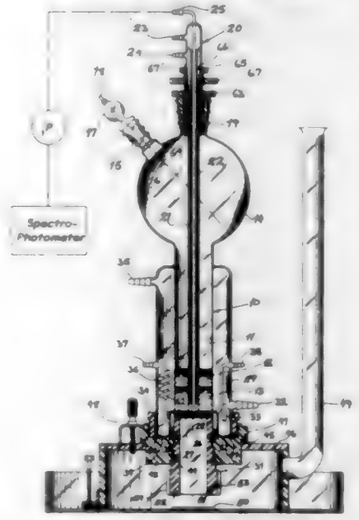


An anodizing rack for anodizing the side edges of rolls of strip conductor material prior to winding the edge anodizing strip into coil which includes anode contact members mounted on a support which have a contact arm extending radially outward from the supporting member on opposite sides of each roll to span the multiplicity of turns and the arm having a minute thickness in cross section adjacent the roll to make knife edge contact along the edge portions of a plurality of turns of each roll.

3,375,187
APPARATUS FOR TEMPERATURE CONTROLLED PREPARATIVE AND ANALYTICAL ELECTROPHORESIS

Joseph Buchler, Fort Lee, N.J., assignor to Buchler Instruments, Inc., Fort Lee, N.J., a corporation of the United States

Filed May 13, 1965, Ser. No. 455,401
16 Claims. (Cl. 204—301)



1. In an apparatus for gel electrophoresis having an upright gel column, a buffer reservoir above said gel column, a buffer reservoir above said gel column, a membrane below said gel column defining therewith an elution chamber, an elution tube extending centrally through said column, means for supplying an elution liquid to said chamber around the periphery thereof, and a cooling jacket surrounding said gel column, the improvement which comprises annular collar means connected with said column; and generally tubular membrane-support means adjustably mounted in said collar means and carrying said membrane.

3,375,188
PROCESS FOR DEASHING COAL IN THE ABSENCE OF ADDED HYDROGEN

Ward J. Bloomer, Westfield, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 326,030, Nov. 26, 1963. This application Dec. 19, 1966, Ser. No. 603,053
8 Claims. (Cl. 208—8)

1. A process for deashing a coal selected from the group consisting of bituminous coal, subbituminous coal and lignite comprised of extractable carbonaceous matter, fusain and mineral matter, which comprises:

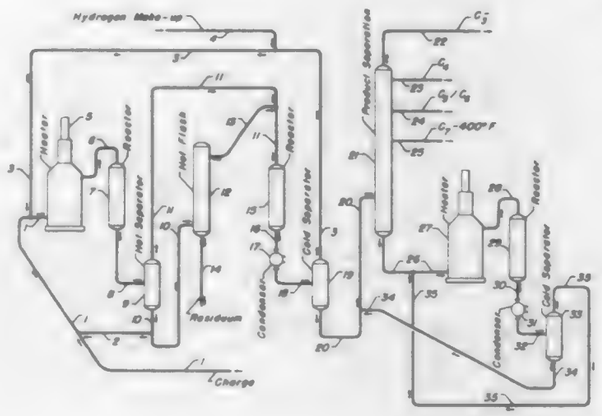
(a) mixing the coal in crushed form in the absence of added hydrogen with a high boiling aromatic liquid solvent having cutpoints, converted to one atmosphere, of from about 600 to about 900° F. to form a solution of said extractable carbonaceous matter wherein solids including insoluble fusain and mineral matter are suspended; and

(b) separating said suspended solids from said solution.

3,375,189
CONVERSION OF BLACK OILS TO MAXIMIZE GASOLINE PRODUCTION

Robert J. J. Hamblin, Deerfield, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Nov. 30, 1966, Ser. No. 598,055
5 Claims. (Cl. 208—59)



1. A process for the conversion of a hydrocarbon charge stock of which at least about 10.0% boils above about 1050° F., and which contains more than about 1.0% by weight of sulfur, into lower boiling, substantially sulfur-free hydrocarbon products, which process comprises the steps of:

(a) admixing said charge stock with hydrogen, heating the resulting mixture to a temperature above about 700° F. and contacting the heated mixture with a catalytic composite in a first reaction zone maintained under an imposed pressure above about 1000 p.s.i.g.;

(b) separating the resulting reaction zone effluent in a first separation zone at substantially the same pressure imposed upon said first reaction zone and at a temperature above about 700° F., to provide a first vapor phase and a first liquid phase;

(c) combining at least a portion of said first liquid phase with said charge stock and hydrogen, and separating the remainder of said first liquid phase in a second separation zone at a substantially reduced pressure to provide a residuum fraction and a second vapor phase;

(d) combining said first and second vapor phases, and reacting the resulting mixture in a second reaction zone at conditions selected to convert sulfurous compounds into hydrogen sulfide and hydrocarbons, and to produce lower molecular weight normally liquid hydrocarbons;

(e) separating the resulting second reaction zone effluent in a third separating zone into a first hydrogen-rich gaseous phase and a second liquid phase, fractionating the latter to provide at least a first lighter fraction having an end boiling point of from about 300° F. to about 450° F. and a second heavier fraction having an initial boiling point above about 300° F.;

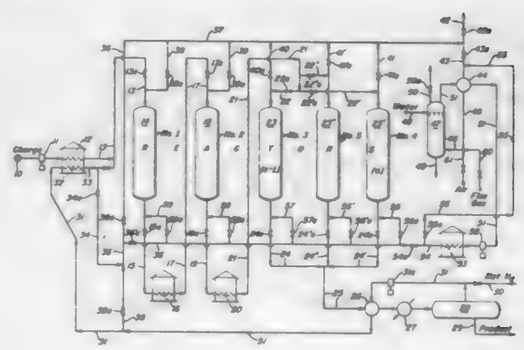
(f) admixing said second heavier fraction with hydrogen and reacting the resulting mixture in a third reaction zone at hydrocracking conditions, and in contact with a hydrocracking catalyst, selected to convert a portion of said second fraction into lower-boiling hydrocarbons; and

(g) separating the third reaction zone effluent, in a fourth separation zone, into a second hydrogen-rich gaseous phase and a third liquid phase, recycling said second hydrogen-rich gaseous phase to combine with said second heavier fraction, and combining said third liquid phase with said second liquid phase prior to fractionating the latter as aforesaid.

3,375,190
SOLUBLE PLATINUM CONTENT OF FIRST REACTOR BELOW 40% AND SUBSEQUENT REACTOR ABOVE 40%

Keith W. McHenry, Jr., Park Forest, Ill., Harry M. Brennan, Hammond, Ind., and Edmond L. d'Ouville, La Grange, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Continuation-in-part of application Ser. No. 41,336, July 7, 1960. This application Dec. 27, 1963, Ser. No. 333,815
3 Claims. (Cl. 208—65)



1. A process for hydroforming desulfurized petroleum hydrocarbons in the presence of hydrogen gas, which process comprises passing said hydrocarbons and hydrogen gas into an initial hydroforming stage containing a first quantity of platinum-alumina-chloride reforming catalyst under hydroforming conditions, said platinum-alumina-chloride catalyst comprising 0.01 to 2.0 weight percent platinum, 0.05 to 5.0 weight percent chlorine, and an alumina-containing base, said first quantity of catalyst having a soluble platinum content of less than about 40 weight percent, withdrawing a stream of hydrocarbons and hydrogen from said initial stage and passing said stream to at least one subsequent hydroforming stage, said subsequent stage containing a second quantity of platinum-alumina-chloride reforming catalyst, said platinum being in the plus-four valence state, effecting additional hydroforming in said subsequent hydroforming

stage under processing conditions favoring the dehydrocyclization of paraffins to aromatics, maintaining in the catalyst of said subsequent stage a plus-four valence platinum content of at least 40 weight percent by periodically discontinuing hydroforming over at least a portion of catalyst in said subsequent stage and contacting said catalyst with an oxygen-containing gas to restore the soluble platinum content to a substantially high level, and recovering the thus hydroformed petroleum hydrocarbons.

3,375,191

PROCESS FOR THE HYDROCRACKING OF HYDROCARBONS WITHOUT A NET CONSUMPTION OF HYDROGEN

William Charles Pfefferle, Middletown, N.J., assignor to Engelhard Industries, Inc., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 203,487, June 19, 1962. This application Mar. 25, 1966, Ser. No. 537,310

4 Claims. (Cl. 208—112)

1. A process for the conversion of relatively higher molecular weight hydrocarbons to hydrocarbons of relatively lower molecular weight without a net consumption of hydrogen which comprises introducing into and maintaining in a reaction zone and reacting a mixture consisting essentially of (A) a relatively higher molecular weight hydrocarbon, (B) a C_1 to C_3 alkane and (C) hydrogen in a ratio of at least one mole of (B) per mole of (A) and a molar ratio of (C) to (B) less than 1:1 at a total pressure of about 50 to about 700 p.s.i.g., a hydrogen partial pressure of less than 200 p.s.i.g., a temperature of about 650° to about 900° F., a weight hourly space velocity of 0.05 to 20 and in contact with a platinum group metal on acidic alumina catalyst, the reaction period being at least 48 hours in duration and the carbon yield on feed at the end of the reaction period being less than 0.5% by weight.

3,375,192

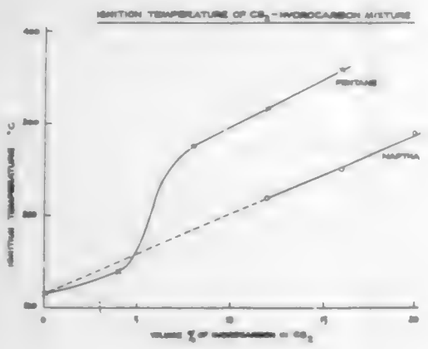
METHOD FOR CLEANING OIL AND GAS WELLS EMPLOYING CARBON DISULFIDE-PENTANE MIXTURES

Hugh Charles Rowlinson, St-Hilaire, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Sept. 10, 1965, Ser. No. 486,497

Claims priority, application Great Britain, Sept. 25, 1964, 39,139/64

2 Claims. (Cl. 252—8.55)



The use of a mixture of 92% to 84% by volume of carbon disulfide and 8% to 16% by volume of pentane for cleaning oil and gas wells, particularly for removal of wax and sulfur deposits therein. The addition of 8% to 16% by volume of pentane to the carbon disulfide raises the ignition temperature of the carbon disulfide and thereby reduces the fire hazard of the same.

3,375,193

METALWORKING LUBRICANT

Sergio A. Ruzza, Warren, and Homer C. Brush, Royal Oak, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

No Drawing. Filed July 5, 1966, Ser. No. 563,641

9 Claims. (Cl. 252—23)

A water dispersible composition which when applied to the surface of metal stock forms a fast drying, continuous protective film which serves as a lubricant when the metal stock is worked. The composition comprises a protective colloid, a fatty acid soap, an organic acid, a lubricant pigment and potassium-sodium tartrate.

3,375,194

PIEZOELECTRIC LEAD ZIRCONATE TITANATE CONTAINING RHODIUM

Tsuneo Akashi, Masao Takahashi, Fumio Yamauchi, Norio Tsubouchi, and Tomeji Ohno, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan

Filed Feb. 5, 1965, Ser. No. 430,550

Claims priority, application Japan, Feb. 13, 1964, 39/7,525

3 Claims. (Cl. 252—62.9)

A lead zirconate titanate piezoelectric ceramic containing 0.01 to 1.0 weight percent of rhodium sesquioxide in solid solution. The rhodium sesquioxide causes the lead zirconate titanate to assume extremely high electromechanical coupling and mechanical quality factors.

3,375,195

ELECTROMECHANICAL TRANSDUCER EMPLOYING PIEZOMAGNETIC MANGANESE FERROUS FERRITE

Frank G. Brockman, Dobbs Ferry, Paul W. Beck, Irvington, and Walter G. Steneck, Ossining, N.Y., assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 312,687, Sept. 30, 1963. This application Nov. 14, 1966, Ser. No. 594,255

1 Claim. (Cl. 252—62.56)

A manganese-ferrous ferrite core suitable for use in an electromechanical transducer. The core has a coupling coefficient of 30% or more. The core is prepared by mixing manganese and ferric oxides in proportions corresponding to the composition of the core, followed by prefiring the mixture, molding cores, and sintering and cooling in atmospheres in which the ratio of carbon dioxide to carbon monoxide is adjusted to result in the formation of an amount of ferrous oxide corresponding to the amount of ferrous iron in the composition.

3,375,196

METHOD FOR INTRODUCING CALCIUM OXIDE INTO MANGANESE-ZINC FERRITE MAGNETIC MATERIALS

Kiyoshi Muramori, Koichi Yaguchi and Katsumi Watanabe, Yokohama, and Hideo Abe, Yokosuka-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Feb. 2, 1965, Ser. No. 429,727

Claims priority, application Japan, Feb. 5, 1964, 39/5,741

9 Claims. (Cl. 252—62.63)

The present disclosure relates to a method for producing a manganese-zinc ferrite magnetic material which comprises preparing a mixture of manganese-zinc ferrite-forming raw materials, subjecting the mixture to preliminary firing so that at least a portion of the mixture is crystallized in the form of ferrite, adding a calcium salt in an amount of about .01 to .1% by weight of the mixture, pulverizing the fired mixture, molding the pulverized mixture and sintering the molded body. According to the present disclosure the calcium salt additive is added after

a mixture of raw materials has been subjected to preliminary firing to properly transform the mixture into ferrite, so that the major portion of the additive is precipitated at the grain boundaries of the crystals.

3,375,197

REFRIGERATION SYSTEM LUBRICATION

Hans O. Spauschus, Anchorage, and Dietrich F. Huttenlocher, Louisville, Ky., assignors to General Electric Company, a corporation of New York

No Drawing. Filed July 30, 1964, Ser. No. 386,401

5 Claims. (Cl. 252—68)

1. In the method of operating a refrigeration system of the hermetically sealed, compression type employing dichlorodifluoromethane as a refrigerant and a mineral oil lubricant in contact with said refrigerant, the improvement which comprises lubricating said refrigeration system with a mineral oil lubricant having dissolved therein from 0.01 to 3 percent by weight of a compound of the formula

$$(RO-)_2\overset{S}{\overset{\|}{P}}-S-M-S-\overset{S}{\overset{\|}{P}}(-OR)_2$$

in which M represents a metal selected from the group consisting of zinc, cadmium and nickel and R represents the same or different hydrocarbon radicals selected from the group consisting of alkyl, aryl, alkaryl and aralkyl radicals containing at least 3 carbon atoms, said compound being effective to inhibit reaction between said oil and said refrigerant in the presence of steel.

3,375,198

ALKALI METAL PERBORATES

Walter Jacob Rosenfelder, London, England, assignor to United States Borax & Chemical Corporation, Los Angeles, Calif.

No Drawing. Filed June 7, 1965, Ser. No. 462,046

Claims priority, application Great Britain, July 24, 1964, 29,782/64

15 Claims. (Cl. 252—99)

Dry, granular alkali metal perborate is produced by mixing with agitation a particulate alkali metal metaborate and hydrogen peroxide in the presence of water not exceeding the amount required to form a product having no uncombined water. Preferably not more than about 80% of the theoretical requirement of water is used. The alkali metal metaborate can also be formed in situ by reaction of a borate, such as sodium tetraborate, with sodium hydroxide. Composite granules having a core of sodium borate and an adherent shell of sodium perborate can be formed.

3,375,199

CLEANER-DISINFECTANT COMPOSITION

Robert Henry Trimmer, East Brunswick, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,081

1 Claim. (Cl. 252—106)

1. A solid granular free flowing detergent composition particularly suitable for hard surface cleaning and disinfection consisting essentially of about 35 to 55% by weight of sodium carbonate and about 15 to 25% by weight of sodium tripolyphosphate, as water soluble inorganic normal builder salts, about 20 to 30% by weight of sodium bicarbonate as water soluble inorganic acid salt, about 2% by weight of sodium lauryl alcohol sulfate and about 3 to 4% by weight of ortho-benzyl-para-chlorophenol, said amounts being by weight of total solids proportioned to form a water solution containing from about ½ to 2% by weight of said solids having a pH of about 9.6 to 10 with said chlorophenol essentially in solution and exhibiting thereby effective disinfecting action against a broad spectrum of microorganisms.

3,375,200

COOLING WATER TREATMENT AND COMPOSITIONS USEFUL THEREIN

Reed S. Robertson, Glen Ellyn, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 266,193, Mar. 19, 1963. This application Aug. 17, 1965, Ser. No. 480,523

2 Claims. (Cl. 252—181)

1. A corrosion inhibiting composition for use in cooling waters which comprises in combination:

(1) a bisulfited water dispersible tannin, said tannin having been disulfited by reaction with a material selected from the group consisting of ammonium bisulfite, sodium bisulfite, and potassium bisulfite at a temperature of from 50° C. to about 200° C. for from about 0.5 hour to about 4.0 hours, and

(2) pyrophosphate, the ratio by weight of the materials being from about 1:4 to 4:1, said bisulfited water dispersible tannin having been condensed with formaldehyde.

ERRATUM

For Class 252—188.3 see:
Patent No. 3,375,176

3,375,201

SILICA GEL-ASBESTOS COMPOSITIONS

Milton E. Winyall, 116 Beachwood Drive, Ellicott City, Md. 21043

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,065

9 Claims. (Cl. 252—194)

A non-decrepitating desiccant silica gel is prepared by admixing asbestos fiber with a silica hydrosol, gelling the hydrosol and subsequently drying and activating the gelled product at elevated temperatures. The present silica-asbestos desiccant possessed increased decrepitation resistance.

3,375,202

SEPARATING SUBSTANCES IN SOLUTION AS SALTS BY USING A COLLOIDAL DISPERSION OF MIXED FERROCYANIDES

Francoise Laveissiere and André Bonnin, Antony, and Philippe Poirier, Versailles, France, assignors to Societe Saint Gobain Techniques Nouvelles, Courbevoie, Siene, France

No Drawing. Continuation-in-part of application Ser. No. 352,345, Mar. 16, 1964. This application Sept. 29, 1964, Ser. No. 400,204

Claims priority, application France, Oct. 1, 1963, 949,225

18 Claims. (Cl. 252—301.1)

This invention is directed to the process of extracting particular substances from a solution by the utilization of a fine colloidal dipsersion of a solid which has an affinity for the substances to be separated. The process generally comprises the steps of contacting the solution with the dispersion so as to fix the substances to be separated on the solid and then separating the dispersion from the solution.

3,375,203

URANIUM OXIDE SOLS

Forrest R. Hurley, 9 Font Hill Drive, Ellicott City, Md. 21043; Melvin Tecotzky, 570 Oxford Ave., Apt. E, Palo Alto, Calif. 94306; and Milton Charles Vanik, 18 Windward Drive, Severna Park, Md. 21146

No Drawing. Continuation-in-part of application Ser. No. 290,170, June 24, 1963, which is a continuation-in-part of application Ser. No. 1,159, Jan. 8, 1960. This application June 20, 1966, Ser. No. 558,616

4 Claims. (Cl. 252—301.1)

Sols of uranium dioxide composed of particles in the size range of 60 to 1900 Angstrom units, having a pH

between 1 to 5 and a specific conductivity of 10^{-5} to 10^{-2} mhos per centimeter.

3,375,204
REGENERATION OF MOLECULAR SIEVE ADSORBENTS
Ronald C. Hoke, Berkeley Heights, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Continuation of application Ser. No. 757,367, Aug. 26, 1958. This application Feb. 12, 1963, Ser. No. 259,773
12 Claims. (Cl. 252—419)

Molecular sieve adsorbents are regenerated by burning carbonaceous deposits via a three-step process involving heating, treating with controlled oxygen stream and contacting with air, while controlling water concentration to below detrimental level.

3,375,205
SYNTHETIC ZEOLITE
Robert L. Wadlinger, Oneonta, N.Y., and Edward J. Rosinski, Almonesson, and Charles J. Plank, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Nov. 13, 1962, Ser. No. 237,289
15 Claims. (Cl. 252—455)

1. A crystalline synthetic material having the composition:

$$0.2 \text{ to } 0.5\ R_{2/m}O{:}0.5 \text{ to } 0.8\ M_{2/n}O{:}1\ Al_2O_3{:}\ >4.0 \text{ to } 7.0\ SiO_2 \cdot Y\ H_2O$$

where R represents ions selected from the group consisting of metal, methyl ammonium, hydrogen and mixtures thereof with one another; m is the valence of R; M represents ions selected from those of the group consisting of hydrogen, metal and hydrogen-metal mixtures, n is the valence of M and Y is any value up to about 8.0, said material being capable of selectively sorbing straight chain hydrocarbons of more than three carbon atoms from admixture of the same with non-straight chain hydrocarbons when M is sodium and characterized by an X-ray powder diffraction pattern essentially the same as that shown in Table A.

3,375,206
CHEMICAL REACTION CATALYST AND ITS PREPARATION
Herbert C. Shaw, Kenmore, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed Sept. 9, 1964, Ser. No. 395,221
21 Claims. (Cl. 252—455)

Molecular sieve chemical reaction catalyst bodies are prepared by providing a three-dimensional crystalline alumino-silicate containing water of hydration, having a SiO_2/Al_2O_3 greater than 3 and pores sufficiently large to accept benzene. The hydrated material is compacted into dense uniformly shaped bodies and thereafter heated to above 250° C. and below the crystalline destruction point for sufficient duration to leave only 2–3 percent by weight of the activated molecular sieve as residual water.

3,375,207
CATALYTIC POLYMERIZATION OF ALKYLENE OXIDES
Herbert C. Kaufman, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Continuation-in-part of application Ser. No. 232,258, Oct. 22, 1962. This application Oct. 20, 1964, Ser. No. 405,277
8 Claims. (Cl. 260—2)

In the process for polymerizing an alkylene oxide selected from the group consisting of ethylene oxide, propylene oxide, butylene oxide, 4,4,4-trichlorobutylene oxide-1,2, styrene oxide, and mixtures thereof by heating the oxide in the presence of a catalyst, the improvement which comprises employing as said catalyst a catalytic proportion of a mixture of aluminum hydride and certain metal acetylacetonates.

3,375,208
METHOD FOR PREPARING A MICROPOROUS THERMOPLASTIC RESIN MATERIAL
Joseph C. Duddy, Trevose, Pa., assignor to ESB Incorporated, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 267,366, Mar. 22, 1963. This application July 26, 1967, Ser. No. 655,996
18 Claims. (Cl. 260—2.1)

A method for preparing a microporous thermoplastic resin material by treating a thermoplastic resin composition with a leaching solvent to remove one or more pore forming agents. A solid, particulate thermoplastic resin which is insoluble in the leaching solvent is intimately mixed under heat and pressure with a solid, particulate thermoplastic resin which is soluble in the leaching solvent to soften the resins into a plasticized mass. The melt is shaped and then contacted with the leaching solvent to remove substantially all ot the soluble thermoplastic resin, thereby rendering the insoluble resin microporous. The thermoplastic resin composition can be loaded with filler material, and an additional pore forming agent can be incorporated into the resin composition to provide an exceptionally large pore volume upon removal of the pore forming agents.

3,375,209
POROUS FILM AND METHOD OF MAKING
Charles R. Kemper, 500 Canterbury Drive, Dayton, Ohio 45429
No Drawing. Filed May 25, 1964, Ser. No. 370,048
5 Claims. (Cl. 260—2.5)

Breathable polyvinyl chloride sheets are formed from a plastisol mixture of polyvinyl chloride and a plasticizer, having dispersed therethrough particulate sodium tetraborate decahydrate (borax) capable of passing through a 100 U.S. standard mesh screen. The plastisol mixture is formed into sheets and thereafter heated to between 300° F. and 400° F. for release of water of hydration from the borax which forms small channels through the sheet as the latter is being cured. The cured sheet is then treated with water to leach out the anhydrous borax thus leaving a vapor permeable polyvinyl chloride sheet.

3,375,210
METHOD OF PRODUCING CARBONATE POLYMER FOAMS
Anthony A. D'Onofrio, Martinsville, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 25, 1964, Ser. No. 392,020
9 Claims. (Cl. 260—2.5)

Process for preparing a (2,2,4,4-tetramethyl-1,3-cyclobutylene)carbonate polymer foam comprising the steps of heating a normally solid (2,2,4,4-tetramethyl-1,3-cyclobutylene)carbonate polymer wherein the cyclobutylene carbonate moiety is present in a mole percent of at least about 50 percent, to a temperature above its melting point, maintaining the molten mass at a temperature and for a period of time sufficient to cause the evolution of gaseous polymer degradation products, maintaining a pressure about the molten polymer mass such that the gaseous products are retained within the molten polymer mass, and cooling the polymer mass to a temperature sufficient to cause solidification.

3,375,211
ULTRAMICROCELLULAR POLYMERIC STRUCTURES CONTAINING AN INFLATANT
Robert Guy Parrish, Sharpley, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 302,720, Aug. 16, 1963. This application Feb. 14, 1967, Ser. No. 615,883
21 Claims. (Cl. 260—2.5)

An ultramicrocellular structure, the cells of which contain an inflatant whose permeability coefficient for diffusion through the cell walls is less than that of air, can be obtained by flash-extruding a solution of a polymer in an activating liquid, which solution also contains the inflatant. Upon extrusion, the cells of the structure are partially collapsed but unruptured. Upon exposure to air the structure self-inflates due to diffusion of air into the cells.

3,375,212
MICROCELLULAR POLYMERIC STRUCTURE
Willard Hallam Bonner, Jr., Gordon Heights, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 302,721, Aug. 16, 1963. This application Feb. 14, 1967, Ser. No. 615,884
7 Claims. (Cl. 260—2.5)

A metastable, collapsed, relatively dense microcellular foam structure composed of a polymer having a glass transition temperature of at least 40° C. The closed cells of the structure contain an impermeant inflatant which provides an osmotic driving force for entry of air and consequent expansion of the foam. However, the structure having been set in the collapsed condition, the wrinkled cell walls are rigid and resist expansion until temperature of the sample is raised above the glass transition temperature of the polymer, or until the sample is treated with a plasticizer.

3,375,213
MODIFICATION OF STEREOREGULAR POLYOLEFINS WITH SYNERGISTIC POLYMERIC COMBINATIONS
Jack J. Press, 12–18 E. Laurelton Parkway, Teaneck, N.J. 07666
No Drawing. Continuation-in-part of application Ser. No. 113,972, Apr. 4, 1961. This application Oct. 27, 1964, Ser. No. 406,939
5 Claims. (Cl. 260—17)

Stereoregular polypropylene, polymethylpentene, and polymethylbuteene have qualities desirable for processing into fibers, yarn, and cloth. Dyeability of these materials is improved by dispersing therethrough a combination of modifier materials consisting of 50 to 95% by weight of a hydrophilic polymer nonsoluble in the stereoregular material and the remainder of a lower molecular weight organic substance having at least one organic group of 6 to 30 carbon atoms; the combination of modifier materials consisting of 2 to 20 percent by weight of the composition consisting of the stereoregular material and the modifier materials. The modifier materils complement each other synergistically.

3,375,214
PROCESS FOR PREPARING MODIFIED ALKYD RESINS HAVING INCREASED RESILIENCE AND RESISTANCE TO CRACKING
Donald Alfred Bennett, Beaulieu, England, assignor to The International Synthetic Rubber Company Limited, Southampton, England, a company of the United Kingdom
No Drawing. Filed Oct. 24, 1963, Ser. No. 318,500
Claims priority, application Great Britain, Oct. 25, 1962, 40,463/62
9 Claims. (Cl. 260—22)

1. A process for preparing a modified alkyd resin having increased resilience and resistance to cracking, comprising (1) reacting a solvent material selected from the group consisting of glyceride oil, unsaturated acids of glyceride oil, and mixtures of an unsaturated glyceride oil with at least one saturated fatty acid with a rubbery polymer of a conjugated diene, said polymer being soluble in said solvent material, and having a molecular weight in the range of 5,000 to 200,000, by heating a solute of said rubbery polymer in said solvent material to form a polymer-solvent reaction product having a viscosity not greater than about 100,000 poises at 25° C. (2) reacting the product of said polymer and said solvent with a polyhydroxy compound and a material selected from the group consisting of organic dibasic acids and organic dibasic anhydrides.

3,375,215
CELLOPHANE COATING COMPOSITIONS COMPRISING VINYLIDENE CHLORIDE COPOLYMER, CANDELILLA WAX AND STEARATE SALT
William P. Kane, Bon Air, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 18, 1964, Ser. No. 397,608
20 Claims. (Cl. 260—23)

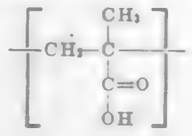
A heat-sealable coating composition for organic film, e.g., regenerated cellulose film comprising as the essential ingredients in a volatile organic solvent (1) a copolymer of vinylidene chloride and at least one other ethylenically unsaturated monomer copolymerizable therewith, said copolymer containing at least 87% by weight of vinylidene chloride; (2) from 2 to 6 parts by weight of candelilla wax per 100 parts of said copolymer, and (3) from 1 to 3 parts of a stearate salt selected from the group consisting of calcium and ammonium stearates. Optionally, the composition may also contain from 0.05 to 2 parts of a solid particulate material as slip agent, from 0.1 to 1 part of an organic carboxylic acid as a viscosity depressant, from 0.5 to 2.5 parts of a saturated or olefinically unsaturated amide or ketone as an additional antiblocking agent, and up to 1 part of a blending resin. The coated film releases readily from crimp seal bars used in automatic packaging machines.

3,375,216
HEAT STABILIZED AND PLASTICIZED VINYL CHLORIDE POLYMER COMPOSITIONS
Wayne E. Smith, Shawnee, Kans., and Harry D. Anspon, Kansas City, Mo., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 524,488, Feb. 2, 1960. This application Feb. 2, 1966, Ser. No. 524,455
6 Claims. (Cl. 260—30.4)

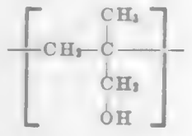
1. A composition comprising (A) a vinyl chloride polymer and (B) a stabilizer/plasticizer salt of a polymer of partially lactonized poly (methyl propanol/methacrylic acid) with a divalent metal from Group II of the Periodic Table or with tin, said partially lactonized poly (methyl propanol/methacrylic acid) having a molecular weight

in the range of about 200 to about 2000, being substantially free of aldehyde and acetal groups, and containing monomeric units of the structures:

(a)

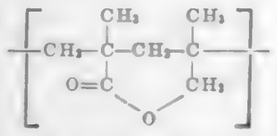


(b)



and

(c)



where said partially lactonized polymer contains from about 5 to about 40 mole percent each of monomeric structures (*b*) and (*a*) and about 20 to 90 mole percent monomeric structure (*c*).

3,375,217

PLASTICIZED VINYL CHLORIDE POLYMERS

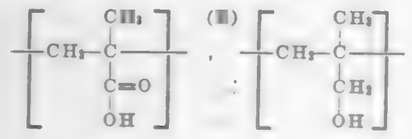
Wayne E. Smith, Shawnee, Kans., and Harry D. Anspon, Kansas City, Mo., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Feb. 2, 1966, Ser. No. 524,488

4 Claims. (Cl. 260—30.4)

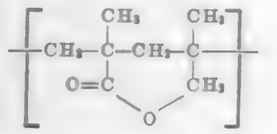
1. A composition comprising (A) a vinyl chloride polymer and (B) a plasticizer compounded therewith, said plasticizer comprising a polymer of partially lactonized poly (methyl propanol/methacrylic acid) having a molecular weight from about 200 to about 2000, being substantially free of aldehyde and acetal groups, and containing monomeric units of the structures:

(A) (B)



and

(C)



where said partially lactonized polymer contains from about 20 to about 90 mole percent of monomeric structure (C) and about 15 to about 40 mole percent of monomeric structures (A) and (B).

3,375,218

NITROARYLSILANES AND SILOXANES

Donald L. Bailey, Snyder, N.Y., and Ronald M. Pike, Pelham, N.H., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 655,505, Apr. 29, 1957. This application Dec. 7, 1962, Ser. No. 242,934

5 Claims. (Cl. 260—37)

5. A curable gum compound comprising:

(1) a gum consisting essentially of from 1 to 99 mole percent nitroarylsiloxane groups represented by the formula:

$$[O_2N-ArC_aH_{2a}]_b-SiO_{\frac{4-(d+b)}{2}}$$

wherein Ar is a member selected from the group consisting of the unsubstituted phenylene radical, the alkyl-substituted phenylene radicals and the alkoxy-substituted phenylene radicals; X is an alkyl radical group containing from 1 to 4 carbon atoms inclusive; *a* has a value from 0 to 8 inclusive; *b* has a value from 1 to 2 inclusive; *d* has a value from 0 to 1 inclusive; $(d+b)$ is two; and $4-(d+b)$ is two and from 1 to 99 mole percent hydrocarbonsiloxane groups represented by the formula:

$$R_eSiO_{\frac{4-e}{2}}$$

wherein R is a monovalent hydrocarbon group and *e* has a value of 2;

(2) a curing agent for converting the gum compound to an elastomer; and

(3) a filler.

3,375,219

PIGMENTING POLYCARBONAMIDE BY MEANS OF AN ETHYLENE COPOLYMER CARRIER RESIN

Howard E. Robb, Henderson, Ky., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,319

16 Claims. (Cl. 260—41)

Finely divided pigments are uniformly dispersed in polycarbonamide resins by admixing therewith a compatible ethylene copolymer carrier resin, said carrier resin neither reacting with nor detracting from the properties of the polycarbonamide and containing therein the finely divided pigment uniformly distributed throughout the carrier resin.

3,375,220

POLYURETHANE PRODUCT

Charles C. Clark, Kenmore, and Herbert M. Schroeder, Williamsville, N.Y., and Lloyd R. Garrison, Trenton, Mich., assignors to Textron Inc., a corporation of Rhode Island

No Drawing. Filed Aug. 9, 1965, Ser. No. 478,445

20 Claims. (Cl. 260—45.7)

A polyurethane fire-retardant coating composition consisting essentially of the reaction product of aromatic hydrocarbon diisocyanate and nitropolyhydric alkanol; the composition contains tris(haloalkyl)phosphate to improve the fire-retardant properties.

3,375,221

STABILIZATION OF RUBBER

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,771

The portion of the term of the patent subsequent to Apr. 20, 1982, has been disclaimed

3 Claims. (Cl. 260—45.9)

Rubber normally subject to oxidative deterioration containing, as an inhibitor against such deterioration, a stabilizing concentration of dicyclohexyldiaminodiphenyl alkane such as, for example, 4,4'-dicyclohexyldiaminodiphenyl methane.

3,375,222

SOLID STATE STABILIZATION OF CRUDE ALKALI METAL POLYSTYRENE SULFONATES WITH WATER-SOLUBLE NITRITE

William E. Smith, Midland, and Henry Volk, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 26, 1964, Ser. No. 392,288

5 Claims. (Cl. 260—45.9)

1. A stabilized, crude alkali metal polystyrene sulfonate solid polymer composition having uniformly admixed therewith from about 0.5 up to about 30 percent by weight of a water-soluble nitrite based on the weight of the polymer.

3,375,223

METHOD FOR POLYMERIZING ORGANOPOLYSILOXANES

Duane F. Merrill, Ballston Spa, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,934

6 Claims. (Cl. 260—46.5)

A method is provided for making organopolysiloxane resins utilizing a hydrogen chloride activated particulated siliceous material as a bodying catalyst. The resulting resin has been found to have improved shelf life stability and reduced cure time.

3,375,224

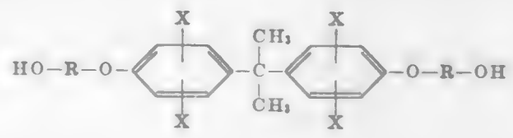
POLYURETHANE IMPREGNATING AND BONDING RESIN

David E. Cordier and Victor V. D'Ancicco, Hamden, and Richard A. Kolakowski, Northford, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

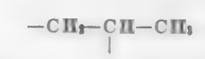
No Drawing. Filed Jan. 10, 1964, Ser. No. 336,889

3 Claims. (Cl. 260—47)

A storage stable composition which is heat curable to a tough flexible polyurethane coating consists of a mixture, in an inert solvent, of (1) a polymethylene polyisocyanate capped with phenol or alkyl (C_{1-9}) phenol and (2) a mixture of (*i*) an hydroxy terminated poly(ethylene/propylene)adipate of equivalent weight 300 to 1,200 and (*ii*) a halogenated compound having the structure:



wherein X is selected from the class consisting of Cl and Br and R is selected from the class consisting of —CH_2—CH_2— and



Fabric and fabric-sheathed insulated conductors coated using said compositions are disclosed.

3,375,225

MODIFIED POLYPHENYLENE ETHERS

John J. Keane and Daniel W. Fox, Pittsfield, and Willem F. H. Borman, Dalton, Mass., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,651

7 Claims. (Cl. 260—47)

A polyarylene ether having pendant phenolic groups as substituents on the polymer backbone. The phenolic groups activate the polymer so that it may be crosslinked with crosslinking agents such as formaldehyde or with heat.

3,375,226

SUBSTITUTED PHENOXY COMPOUNDS AND CURED POLYEPOXIDES OBTAINED THEREFROM

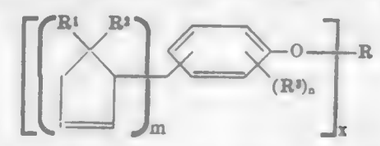
Ralph F. Sellers, Somerset, Samuel G. Smith, Jr., Hillsborough Township, and Allison S. Burhans, Bernards Township, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 28, 1966, Ser. No. 523,533

16 Claims. (Cl. 260—47)

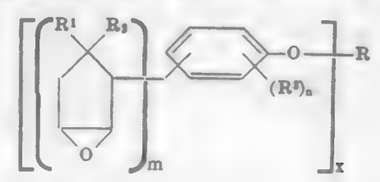
1. A substituted phenoxy compound selected from the group consisting of compounds having the formula:

(a)



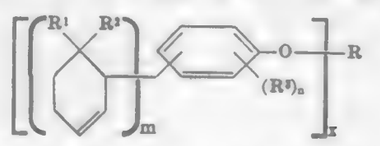
wherein R is a hydrocarbon radical having a valence of 2 to 4 inclusive, *x* is an integer equal in value to the valence of R, R^1 and R^2 are hydrogen or alkyl containing a maximum of 6 carbon atoms, R^3 is an alkyl radical containing a maximum of 6 carbon atoms, an alkoxy radical containing a maximum of 6 carbon atoms or halogen, *m* is an integer having a value of 1 to 3 inclusive, *n* is an integer having a value of 0 to 5-*m* inclusive and with the further limitation that each cyclopentenyl group is in a position other than meta to the —O—R group;

(b)



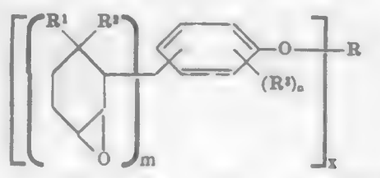
wherein R, R^1, R^2, R^3, *m*, *n* and *x* are as defined in (a) and the position of each epoxidized cyclopentyl group is in a position other than meta to the —O—R group;

(c)



wherein R, R^1, R^2, R^3, *m*, *n* and *x* are as defined in (a) and the position of each cyclohexenyl group is in a position other than meta to the —O—R group;

(d)



wherein R, R^1, R^2, R^3, *m*, *n* and *x* are as defined in (a) and the position of each epoxidized cyclohexyl group is in a position other than meta to the —O—R group.

3,375,227

CARBOXY-HYDROXY-CONTAINING COPOLYMERS

Darrell D. Hicks, Louisville, Ky., assignor to Celanese Coatings Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 364,274, May 1, 1964. This application Apr. 21, 1966, Ser. No. 544,083

The portion of the term of the patent subsequent to Oct. 3, 1978, has been disclaimed

8 Claims. (Cl. 260—47)

A copolymer of an unsaturated aliphatic acid having only one carboxy group, at least one different ethylenically

unsaturated monomer and a beta-hydroxyalkyl ester of an unsaturated aliphatic acid having only one carboxyl group, said copolymer being useful in coating compositions.

3,375,228

HOT CAPPING OF POLYPHENYLENE ETHERS

Klaus E. Holoch and Bernadus J. Van Sorge, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 425,330, Jan. 13, 1965. This application May 10, 1967, Ser. No. 637,325

25 Claims. (Cl. 260—47)

A polyphenylene ether stabilized by a process involving heat treatment of the polymer to generate incipient, reactive, hydroxyl groups on the polymer chain followed by reaction of generated hydroxyl groups with a material capable of reacting therewith to form substituents on the polymer chain inert to oxygen attack at elevated temperatures.

3,375,229

LIGHT-SENSITIVE POLYMERS HAVING A LINEAR CHAIN CONTAINING THE STYRYL KETONE GROUP

Douglas G. Borden, Cornelius C. Unruh, and Stewart H. Merrill, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application July 21, 1959, Ser. No. 828,455. Divided and this application July 22, 1964, Ser. No. 422,476

6 Claims. (Cl. 260—50)

Linear polymers containing photosensitive styryl ketone group in the polymeric chain and which are useful in photographic processes involving photosensitive polymers, e.g., for lithographic plates, are aldehyde-ketone condensation polymers in which a dialdehyde having an aldehyde group attached to a benzene ring is condensed with a reactive methyl or methylene group attached to carbonyl in a ketone having two such reactive groups. Example is condensation polymer of 1,3-di-(o-formylphenoxy)-propane and acetone.

3,375,230

HIGH NITROGEN POLYMERS PREPARED BY REACTING ALDEHYDES WITH AMINOGUANIDINES, TETRAZOLES, OR TRIAZOLES

Phyllis D. Oja, Walnut Creek, and Earl Thomas Niles, Danville, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 24, 1962, Ser. No. 169,178

7 Claims. (Cl. 260—67.6)

1. A nitrogen containing organic polymer having a nitrogen:carbon atom ratio of from greater than 1 to about 4.5 which comprises repetitive units of from about 1 to 4 molar equivalents of

(a) a member selected from the group consisting of monoaminoguanidine, diaminoguanidine, triaminoguanidine, diaminotetrazole, 4-amino-3,5-dihydrazino-1,2,4(4H)-triazole, dihydrazinotetrazine, mixtures thereof and the acid addition salts thereof

condensed with about 1 molar equivalent of

(b) an aldehyde based compound selected from the group consisting of formaldehyde, glyoxal, paraformaldehyde, formaldehyde-glyoxal mixtures, acetals of formaldehyde, glyoxal, paraformaldehyde and formaldehyde-glyoxal mixtures and oximes of formaldehyde, glyoxal, paraformaldehyde and formaldehyde-glyoxal mixtures.

3,375,231

COPOLYMER OF ETHYLENEIMINES AND LACTONES AND PROCESS OF PREPARING SAME

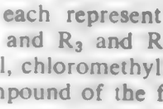
Kenichi Fukui, Sachio Yuasa, Tsutomu Kagiya, and Takeo Shimizu, Kyoto, and Takezo Sano, Niihama-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,840

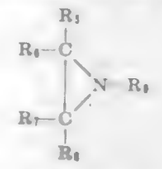
Claims priority, application Japan, Dec. 28, 1962, 37/59,678

6 Claims. (Cl. 260—78.3)

1. A copolymer produced by polymerization at a temperature of −20° C. to 200° C. of β-lactone of the formula:



wherein R_1 and R_2 each represent hydrogen atoms or lower alkyl radicals, and R_3 and R_4 each represent hydrogen atoms or alkyl, chloromethyl or aryl radicals with an ethyleneimine compound of the formula:



wherein R_5, R_6, R_7 and R_8 each represent hydrogen atoms or alkyl radicals, and R_9 represents a hydrogen atom, an alkyl or an acyl radical, in a mole ratio ranging from about 1:20 to about 20:1.

3,375,232

MODIFIED POLY(ARYLENE SULFIDE) RESINS

Roscoe A. Pike, Holden, and Randell E. Martin, Worcester, Mass., assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts

No Drawing. Filed Feb. 16, 1965, Ser. No. 433,167

3 Claims. (Cl. 260—79.1)

Thianthrene ring formation in the Macallum type formation of polyphenylene sulfide resins, where unsymmetric halogen tri-substituted aromatic compounds are employed, is avoided by the inclusion, in the reactants, of an alkyl substituted aromatic hydrocarbon such as toluene, xylene, cumene, mesitylene, methyl naphthalene, and ethyl methyl benzene.

3,375,233

NOVEL HIGHLY POLYMERIZED POLYAMINE SULFONE AND METHOD FOR PRODUCINC THE SAME

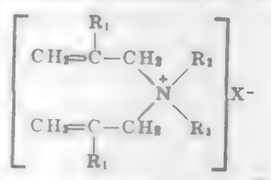
Susumu Harada and Masamichi Katayama, Fukushima-ken, Japan, assignors to Nitto Boseki Co., Ltd., Gonome, Fukushima-shi, Japan, a corporation of Japan

Filed May 21, 1965, Ser. No. 457,728

Claims priority, application Japan, May 25, 1964, 39/29,100

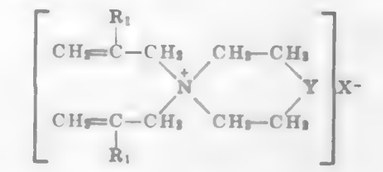
13 Claims. (Cl. 260—79.3)

1. A polyamine sulfone containing at least ⅓ mol of sulfone linkage per amine monomer unit in the molecular chain prepared by radical copolymerization of sulfur dioxide and an unsaturated amine compound having one of the following general Formulas I to IV:



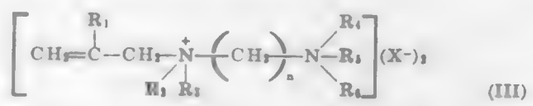
(I)

wherein R_1 is a hydrogen atom or a methyl radical; R_2 and R_3 are hydrogen atoms, allyl radicals, methallyl radicals, unbranched or branched alkyl radicals having 1 to 18 carbon atoms, phenyl radicals, benzyl radicals, cyclohexyl radicals, phenethyl radicals, β-hydroxyethyl radicals, β-sulphoethyl radicals, β-carboxyethyl radicals, or carboxymethyl radicals; and X is Cl, Br, I, HSO_4, HSO_3, HCOO or CH_3COO,



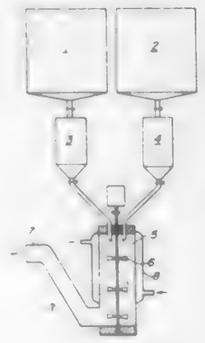
(II)

wherein R_1 and X are as defined above, and Y is an oxygen atom or methylene radical (—CH_2—),

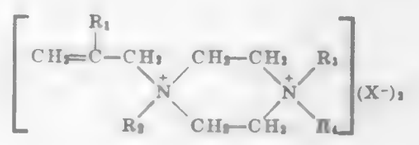


(III)

wherein R_1 is as defined above; R_2, R_3, R_4, R_5 and R_6 are hydrogen atoms, allyl radicals, or methallyl radicals,



at least one of the R_2 to R_6 being always an allyl radical or methallyl radical; X is Cl, Br or I and n is from 2 to 6,



(IV)

wherein R_1 is a hydrogen atom or a methyl radical, R_2, R_3 and R_4 are hydrogen atoms, allyl radicals or methallyl radicals, at least one of the R_2, R_3 and R_4 being an allyl radical or a methallyl radical and X is Cl, Br or I, said polymer being generally a colorless to white amorphous and brittle high molecular weight solid resistant to discoloration upon exposure to air.

3,375,234

RUBBER CURING SYSTEMS

Samuel Gelfand, Niagara Falls, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Feb. 26, 1964, Ser. No. 347,359

17 Claims. (Cl. 260—79.5)

1. A composition which can be vulcanized comprising decachlorobutane in combination with sulfur and an elastomeric hydrocarbon polymer.

3,375,235

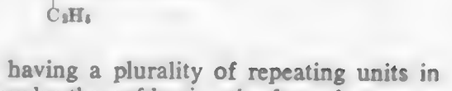
ALUMINUM HYDROCARBON POLYMERS

Gaetano F. D'Alelio, South Bend, Ind., assignor, by mesne assignments, to E. I. du Pont de Nemours and Company, a corporation of Delaware

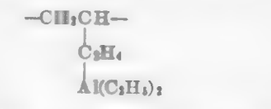
No Drawing. Continuation of application Ser. No. 744,340, June 25, 1958, Ser. No. 761,485, Sept. 17, 1958, and Ser. No. 762,226, Sept. 22, 1958. This application June 5, 1961, Ser. No. 135,089

3 Claims. (Cl. 260—80)

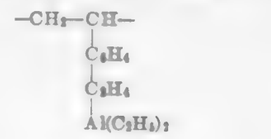
1. A polymer having a plurality of repeating units in the polymer molecules thereof having the formula



2. A polymer having a plurality of repeating units in the polymer molecules thereof having the formula



3. A polymer having a plurality of repeating units in the polymer molecules thereof having the formula



3,375,236

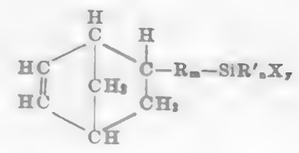
MOISTURE CURABLE BICYCLOHEPTENYL HALOSILANE COPOLYMERS

John F. Van de Castle, Westfield, Francis P. Baldwin, Summit, and Erving Arundale, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 5, 1964, Ser. No. 409,308

10 Claims. (Cl. 260—80.71)

1. A moisture curable copolymer of at least one C_2–C_{10} alpha olefin with a halosilane of the formula:



where R is a C_1–C_6 hydrocarbon organic radical; R′ is selected from the class consisting of hydrogen and C_1–C_6 hydrocarbon organic radicals; X is a halogen; m is a cardinal number between 0 and 6; n is a cardinal number between 0 and 2; y is a whole number between 1 and 3; and $n+y$ equals 3.

3,375,237

ACRYLONITRILE POLYMERS

Manuel M. Baizer, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Feb. 25, 1963, Ser. No. 260,853, now Patent No. 3,245,889. Divided and this application Dec. 30, 1964, Ser. No. 422,431

4 Claims. (Cl. 260—88.7)

Low molecular weight polymers of acrylonitrile formed by electrolysis of acrylonitrile under proton poor condi-

tions with the initial polymer unit having an adiponitrile structure with addition of other acrylonitrile molecules thereto.

3,375,238

PROCESS FOR SUSPENSION POLYMERIZATION OF VINYL CHLORIDE

Hans Bauer and Joseph Heckmaier, Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany, a firm of Germany

No Drawing. Filed Apr. 22, 1964, Ser. No. 361,863

Claims priority, application Germany, May 17, 1963, W 34,512

4 Claims. (Cl. 260—92.8)

This invention relates to a process for the polymerization of a polymerizate containing at least 80% polyvinyl chloride which comprises the steps of (1) mixing monomers selected from the group consisting of vinyl chloride and mixtures of vinyl chloride with up to 20% of olefinically unsaturated compounds copolymerizable with vinyl chloride, with water in the presence of a monomer-soluble polymerization catalyst and a mixed suspension stabilizer consisting of from 1% to 99% of a water-soluble methyl cellulose and from 99% to 1% of a water-soluble hydroxyethyl cellulose, (2) heating said mixture to a temperature between 0° C. and 160° C. for a time sufficient to effect polymerization while under continuous agitation, and (3) recovering said polymerizate. The so-prepared polymerizate has a narrow range of particle size distribution and is easier to pre-gel.

3,375,239

POLYMERIZATION OF 1,3-BUTADIENE USING AN ORGANOMETAL AS FIRST COMPONENT, A SECOND COMPONENT COMPRISED OF TITANIUM AND IODINE WITH A GROUP IV-B METAL HALIDE CATALYST ADJUVANT

William J. Trepka and Carl A. Uraneck, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 18, 1964, Ser. No. 419,554

6 Claims. (Cl. 260—94.3)

High cis-polybutadiene is made by contacting 1,3-butadiene with the catalyst which forms on mixing as a first component an organometal compound and a second component containing titanium and iodine with a Group IV–II metal halide catalyst adjuvant.

3,375,240

METAL-CONTAINING DYESTUFFS

Fabio Beffa, Basel, Paul Lienhard, Riehen, and Eginhard Steiner, Basel, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,664

Claims priority, application Switzerland, Oct. 11, 1963, 12,538/63

9 Claims. (Cl. 260—145)

Metal complex dyestuffs of good dyeing properties consisting essentially of a mixture of (a) a bicyclically metallized dyestuff moiety and (b) a bicyclically metallized formazane moiety, the mixture being complexed with Co or Cr as the metal, and molar ratio of (a) to (b) ranging from 2:1 to 1:2. Moiety (a) is the residue of a monoazo dye, of a disazo dye or of an azomethine dye.

3,375,241

FIBER REACTIVE DYESTUFFS

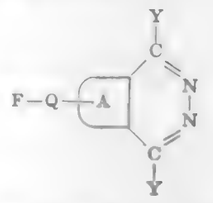
Edgar Siegel, Leverkusen, and Klaus Sasse, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany

No Drawing. Filed Feb. 13, 1962, Ser. No. 172,857

Claims priority, application Germany, Feb. 27, 1961, F 33,299

12 Claims. (Cl. 260—154)

1. A dyestuff of the formula:



wherein F is a water-soluble metal-free monoazo dyestuff; A is a six-membered carbocyclic ring having three conjugated double bonds; Q stands for member selected from the group consisting of —NHOC— and —NHO_2S—; and Y is a halogen atom selected from the group consisting of Cl and Br.

3,375,242

CONVERSION OF NARINGIN TO NEOHESPERIDIN AND NEOHESPERIDIN DIHYDROCHALCONE

Robert M. Horowitz, Pasadena, and Bruno Gentili, Glendale, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Dec. 9, 1966, Ser. No. 600,067

4 Claims. (Cl. 260—210)

Naringin is reacted with isovanillin to produce neohesperidin chalcone. This chalcone may be cyclized to yield neohesperidin or it may be hydrogenated to yield neohesperidin dihydrochalcone, a compound which is intensely sweet and known to be useful for sweetening foods.

3,375,243

METHOD OF PRODUCING ALKYL GLUCOSIDE COMPOSITIONS

Charles S. Nevin and Robert G. Short, Decatur, Ill., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 502,351, Oct. 22, 1965. This application Mar. 13, 1967, Ser. No. 622,476

13 Claims. (Cl. 260—210)

Preparation of alkyl glucoside compositions by the reaction of a saccharide with an alcohol in the presence of a water-soluble sulfonic acid catalyst.

3,375,244

PRODUCTION OF 5'-NUCLEOTIDES

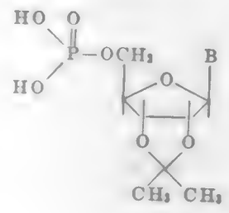
Shunji Ouchi, Tsuneo Sowa, Hiraku Yamada, and Kozo Tsunoda, Tokyo, Masakazu Kurihara, Warabi-shi, and Saburo Senoo, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,331

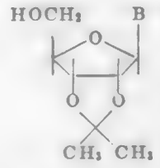
Claims priority, application Japan, Dec. 19, 1963, 38/68,101

6 Claims. (Cl. 260—211.5)

1. A process for the production of 5'-nucleotides having the general formula



and protected by 2',3'-O-isopropylidene group, said process comprising reacting a nucleoside having the general formula



and protected by 2',3'-O-isopropylidene group and phosphorous oxychloride in mixture with a small amount of a tertiary amine as a catalyst and an organic solvent selected from the group consisting of acetonitrile, nitromethane, dichloromethane and tetrahydrofuran, wherein B is selected from the group consisting of purines and pyrimidines which compose nucleic acid.

3,375,245

METHOD OF MAKING SODIUM CARBOXYMETHYL CELLULOSE

Robert J. Dearborn, Muncie, Ind., assignor to Warner Machine Products, Inc., Muncie, Ind., a corporation of Indiana

No Drawing. Filed Apr. 5, 1962, Ser. No. 185,218

1 Claim. (Cl. 260—231)

A method of making sodium carboxymethyl cellulose from regenerated cellulose in which comminuted regenerated cellulose is mixed with aqueous solutions of chloracetic acid and sodium hydroxide to form a reaction mixture. The water concentration of the reaction mixture is adjusted and said mixture is allowed to react until the ratio of the carboxymethyl groups substituted into the glucose molecules is in the range of from 0.45 to 0.85 to 1.

3,375,246

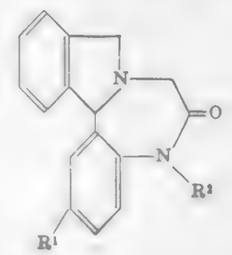
ISOINDOLINES

Goetz E. Hardtmann, Madison, and Hans Ott, Convent Station, N.J., assignors to Sandoz, Inc., Hanover, N.J.

No Drawing. Filed June 11, 1965, Ser. No. 463,378

20 Claims. (Cl. 260—239.3)

1. A pharmaceutically acceptable compound of the formula



wherein:

R^1 is a member selected from the group consisting of a hydrogen atom, chloro, fluoro and bromo; and

R^2 is a member selected from the group consisting of a hydrogen atom, lower alkyl, lower alkenyl having a saturated α-carbon atom, lower alkinyl having a saturated α-carbon atom and di(lower)alkylamino(lower)-alkyl having an alkylene bridge of at least two carbon atoms.

3,375,247

HETEROCYCLIC COMPOUNDS AND METHODS FOR THEIR PRODUCTION

Leonard Doub, Bloomfield Hills, and Uldis Krolls, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,694

6 Claims. (Cl. 260—239.75)

N-sulfanilycytosine compounds, substituted in the 1-position by lower alkyl, lower alkoxyalkyl, lower alkenyl, or phenyl-substituted lower alkyl, and alkali metal salts thereof, useful as antibacterial agents, and their production by (a) hydrolysis of a corresponding N-(N-acylsulfanilyl)cytosine, and (b) reduction of a corresponding N-(p-nitrobenzenesulfanilyl)cytosine.

3,375,248

PHENOTHIAZINE CARBOXYLIC ACID DERIVATIVES

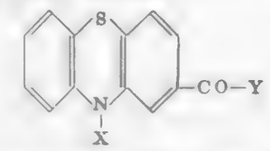
Jacques J. P. de Antoni, Gif-sur-Yvette, Essonne, France, assignor to Les Laboratoires Bruneau & Cie, Paris, France, a corporation of France

No Drawing. Continuation-in-part of application Ser. No. 509,218, Nov. 22, 1965. This application Feb. 17, 1967, Ser. No. 616,764

Claims priority, application France, Nov. 30, 1964, 996,857, Patent 3,883; Mar. 2, 1965, 7,626, Patent 138; Sept. 13, 1965, 31,196, Patent 1,459,075; Feb. 18, 1966, 50,231; Apr. 26, 1966, 59,107; May 16, 1966, 61,761; Dec. 2, 1966, 85,945

37 Claims. (Cl. 260—243)

A compound, having anti-inflammatory and analgesic utility, selected from the class consisting of (a) phenothiazine derivatives of the formula



where X represents an alkanoyl radical and Y represents a group selected from the class consisting of N-methyl piperazino, N-phenyl piperazino and groups of the formula —A—C_nH_{2n}—Am where A represents —NH— or —O—, n is an integral number from 2 to 5 and Am represents a group selected from the class consisting of dialkylamino in which each alkyl group contains 1 to 4 carbon atoms, and heterocyclic nitrogen groups, and (b) non toxic acid addition salts of said phenothiazine derivatives.

3,375,249

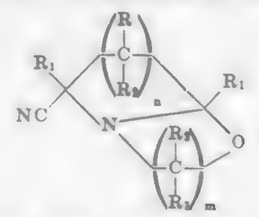
AZA-CYANO-OXABICYCLO ALKANES

Herbert E. Johnson, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 23, 1963, Ser. No. 304,240

21 Claims. (Cl. 260—244)

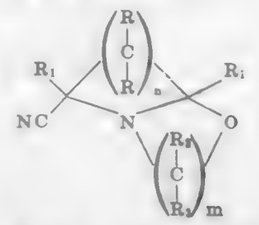
1. A 1-aza-2-cyano-oxabicyclo alkane of the formula:



wherein R, R_1, R_2, and R_3 are from the group consisting of hydrogen and a monovalent hydrocarbon group of from 1 to 25 carbon atoms; n is an integer of from 2 to 4, inclusive; and m is an integer of from 2 to 6, inclusive.

10. 1-aza-2-cyano-7-oxabicyclo[4.4.0]decane.

12. A process for the preparation of a 1-aza-2-cyano-oxabicyclo alkane of the formula:



wherein R, R_1, R_2, and R_3 are from the group consisting of hydrogen and a monovalent hydrocarbon group of

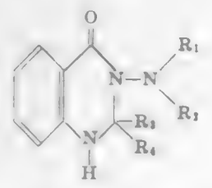
from 1 to 25 carbon atoms; *n* is an integer from 2 to 4, inclusive; and *m* is an integer from 2 to 6, inclusive, which comprises reacting a member selected from the group consisting of a dicyanohydrin, diketone and keto-aldehyde with a primary amino alcohol.

3,375,250
CERTAIN ALKYL AND ARYL SUBSTITUTED 3 - AMINO - 2,3 - DIHYDRO - 4(1H)QUINAZOLINONES

Frederick K. Kirchner, Bethlehem, and Andrew W. Zalay, Albany, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 17, 1961, Ser. No. 153,227
12 Claims. (Cl. 260—256.4)

1. A compound of the formula



wherein R_1, R_2, R_3, and R_4 are lower-alkyl.

3,375,251
PHENAZINE DERIVATIVES

Gerald R. Aldridge, Elizabeth, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 12, 1965, Ser. No. 495,332
7 Claims. (Cl. 260—267)

Yellow pigments comprising 4,5,6,12,13,14-hexahydrodiisoquino-[5,4-ab,5',4'-hi]-phenazine-4,6,12,14 - tetrone and its derivatives wherein the imide groups are substituted with a lower alkyl, aryl, or a heterocyclic radical. Also included is a process for the preparation of these compounds which comprises the catalytic condensation-oxidation of a 3-amino derivative of naphthalic anhydride or imide.

3,375,252
PROCESS FOR THE PRODUCTION OF 2-METHYL-1,4-DIAZA-BICYCLO-(2,2,2)-OCTANE

Shiyunichi Yamada and Toshinori Kurano, Kanagawaken, Japan, assignors to Sankyo Chemical Industries Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed June 28, 1966, Ser. No. 561,030
Claims priority, application Japan, July 1, 1965, 40/38,952
2 Claims. (Cl. 260—268)

New and improved process for the preparation of 2-methyl-1,4-diaza-bicyclo-(2,2,2)-octane which comprises heating 2-methyl-1,4-di-beta-hydroxyethyl piperazine or 1,4-di-beta-hydroxypropyl piperazine in the presence of an alkali or alkaline earth metal salt of acetic acid.

3,375,253
AZONIA SALTS

Donald L. Fields and Jerry B. Miller, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 20, 1964, Ser. No. 368,979
5 Claims. (Cl. 260—286)

Novel salts of [1-azonia-2-(1,3-dioxolan-2-yl)benzyl]-aromatic diesters and their preparation and novel diol, diester and dione azonia salts derived from said aromatic diesters and their preparation. 2-[1-azonia-2-(1,3-dioxolan-2-yl)benzyl]hydroquinone diacetate bromide is illustrative of the aromatic diester compounds. 5,6-dihydroxy-4a-azoniaanthracene bromide is illustrative of the latter azonia salts.

3,375,254
MANUFACTURE OF 1,2,3,4,6,7-HEXAHYDRO-2-OXO-11bH-BENZO(a)QUINOLIZINES

Harry Tacon Openshaw and Norman Whittaker, London, England, assignors to Burroughs Wellcome & Co. Inc., Tuckahoe, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 141,581, Sept. 29, 1961. This application Sept. 17, 1965, Ser. No. 488,258
11 Claims. (Cl. 260—289)

1,2,3,4,6,7 - hexahydro - 2 - oxo - 11bH - benzo(a) quinolizines, of value for their pharmacological activity and as intermediates in the synthesis of emetine, are prepared by reaction of 3,4 - dihydroisoquinolines in which the 6 and 7 positions are substituted by hydrogen, methoxy, ethoxy, or a methylenedioxy group as a free base with the cation of a Mannich base having the formula,

$$Z^1Z^2Z^3N^+.CH_2.CHR^3.CO.CH_3$$

in which Z^1 is hydrogen or lower alkyl, Z^2 and Z^3 are lower alkyl or a combination forming a morpholine, pyrrolidine, or piperidine ring, and R^3 is hydrogen or lower alkyl.

3,375,255
N-HYDROXYALKYLPIPERIDYL, PIPERIDYL ALKANES

Francis E. Cislak, Charles K. McGill, and George W. Campbell, Jr., Indianapolis, Ind., assignors to Reilly Tar & Chemical Corporation, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Apr. 19, 1965, Ser. No. 449,284
4 Claims. (Cl. 260—294.7)

N-hydroxyalkylpiperidyl, piperidyl alkanes are prepared by reacting a chlorohydrin with a dipiperidylalkane, or by reacting a chlorohydrin with di-pyridylalkane and then hydrogenating the resulting quaternary pyridinium salt. Some of them are prepared by reacting an alkylene oxide with a dipiperidylalkane. The compounds are useful in the preparation of corrosion inhibiting compounds and in the polymer art.

3,375,256
4-SUBSTITUTED-4'-TERTIARY AMINOALKOXY BIPHENYLS

Frederick Louis Bach, Montvale, N.J., and John Claire Barclay, New York, and Elliott Cohen, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 427,094, Jan. 21, 1965. This application Nov. 18, 1966, Ser. No. 595,360
10 Claims. (Cl. 260—294.7)

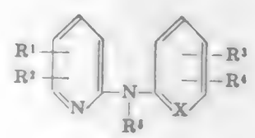
This disclosure describes compounds of the class of 4-substituted-4'-tertiary aminoalkoxy biphenyls useful as hypocholesteremic agents.

3,375,257
N-(ACYL AMINO SUBSTITUTED PYRIDYL)-N-(PHENYL OR PYRIDYL)AMINES

Kurt Thiele, Günter Steinmetz, and Walter von Bebenburg, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,938
Claims priority, application Germany, Aug. 29, 1964, D 45,302, D 45,303
5 Claims. (Cl. 260—295)

Compounds of the formula



wherein X is selected from the group consisting of nitrogen and —CH—, R^1 is an amino acyl group R^6NH, wherein R^6 is an acyl group derived from an acid selected from the group consisting of carbonic acid, mono lower alkyl esters of carbonic acid, lower alkanoic acids, benzoic acid, chloro substituted benzoic acids and hydroxy substituted benzoic acids, R^2 is, for instance, selected from the group consisting of hydrogen, halogen, amino and acyl amino as defined for R^1, R^3 and R^4 are, for instance, selected from the group consisting of hydrogen, halogen, trifluoromethyl, alkyl, alkoxy, carboxy and amino and R^5 is selected from the group consisting of hydrogen and acyl as defined for R^6. The compounds of this invention have valuable pharmaceutical properties because of their high antiphlogistic action indicating their usefulness as anti-inflammatory agents.

3,375,258
PREPARATION OF 2-BENZOYLMETHYL-BENZOXAZOLES

Emil B. Rauch, Port Dickinson, and John A. Welsh, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 18, 1965, Ser. No. 426,387
10 Claims. (Cl. 260—307)

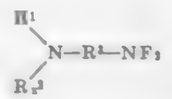
1. The process of preparing 2-phenacyloxazoles which comprises reacting an alkyl ester of an aromatic carboxylic acid with a 2-methylaryleneoxazole in the presence of a catalytic amount of an alkali metal hydride catalyst.

3,375,259
DIFLUORAMINO COMPOUNDS

James Andrew Gibson, Prestwick, and James Brown Parker and James Grigor, Kilwinning, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 14, 1964, Ser. No. 359,796
Claims priority, application Great Britain, Apr. 17, 1963, 15,211/63
19 Claims. (Cl. 260—309.7)

1. Compounds of the general formula



where:

R^1 is selected from the group consisting of monovalent and divalent atoms and groups having an electron attracting atom or group adjacent the nitrogen atom,

R^2 is selected from the group consisting of R^1, hydrogen, hydroxyl, alkyl, aryl, alkoxy and the atoms necessary to form with R^1 a cyclic ring containing nitrogen and carbon atoms in the ring,

x is 0 or 1 as R^1 is an integer selected from the group consisting of 0 and 1 and is 0 when R^1 is divalent and is 1 when R^1 is monovalent,

R^3 is selected from the group consisting of an alkylene group, a difluoraminoalkylene group and a nitro-alkylene group and

R^1, R^2 and R^3 are such that the ratio of carbon atoms to difluoramino groups is not more than 6:1.

16. A process for the preparation of a difluoramine compound as claimed in claim 1 wherein a compound containing an NH group and having the general formula $R^1NHR_x^2$ is reacted with a difluoramino alcohol having the general formula $HO—R^3NF_2$ in the presence of a substance selected from the group consisting of strongly water-absorbent substances and strongly water-reactive substances, R^1, R^2, R^3 and *x* having the meanings given in claim 1.

3,375,260
19-NOR-9β,10α-STEROIDS OF THE PREGNANE SERIES

Albert Bowers, Atherton, Calif., Pierre Crabbé, Mexico City, Mexico, and John Edwards, Los Altos, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Continuation-in-part of application Ser. No. 210,211, July 16, 1962. This application Mar. 8, 1965, Ser. No. 438,069
Claims priority, application Mexico, Dec. 4, 1961, 65,269
10 Claims. (Cl. 260—397.3)

2. 6α,16α-dimethyl-19nor-9β,10α-Δ^4-pregnene-3,20-dione.

3,375,261
RING A UNSATURATED-20-OXO-11,17-BIS-OXYGENATED 16-METHYL-STEROIDS OF THE PREGNANE SERIES

Glen E. Arth, Cranford, David Johnston, Warren Township, Somerset County, and Lewis H. Sarett, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 642,655, Feb. 27, 1957. This application July 8, 1966, Ser. No. 563,658
27 Claims. (Cl. 260—397.45)

1. The 17-oxygenated-pregnane having Δ^4 unsaturation in ring A, a keto group at the 20-position, a member selected from the group consisting of nitrogen and oxygen at the 3-position, a member selected from the group consisting of hydrogen and halogen at the 9α-position, a member selected from the group consisting of keto and β-hydroxy at the 11-position, and characterized by the presence of a methyl substituent attached to the C–16 carbon atom.

3,375,262
MONOACYL DIOL HYDROGEN DICARBOXYLATES

James Bruce Martin, Hamilton, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,643
4 Claims. (Cl. 260—404.8)

1. Stearoyl propylene glycol hydrogen succinate.

3,375,263
WERNER COMPLEXES OF CHROMIUM AND OMEGA (ETHENYL CARBOXY) ALIPHATIC CARBOXYLIC ACIDS

John W. Trebilcock, Holiday Hills, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 13, 1964, Ser. No. 344,559
9 Claims. (Cl. 260—414)

Werner complexes of trivalent nuclear chromium atoms coordinated with omega (ethenyl carboxy) aliphatic carboxylic acids such as methacryloxyundecanoic acid, are prepared by bringing together a water-soluble chromium salt such as basic chromic chloride, an alcohol such as isopropanol, and an omega (ethenyl carboxy) aliphatic carboxylic acid and heating the mixture at reflux for about 15 minutes. The Werner complexes are useful as glass-treating agents in the preparation of glass fiber-plastic laminates.

3,375,264

3-ALKOXY OR ALKYLTHIO-4,4'-DIISOCYANATO DIPHENYLMETHANES

Adnan A. R. Sayigh, North Haven, James N. Tilley, Cheshire, and Henri Ulrich, Northford, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,409

3 Claims. (Cl. 260—453)

4,4'-diisocyanato diphenylmethanes, substituted in the 3-position by lower-alkoxy or lower-alkylthio, are provided. The isocyanato group in the same ring as the 3-substituent is markedly less reactive than that in the unsubstituted ring thus permitting selective reaction of said isocyanate groups. The compounds are useful as intermediates in the preparation of cellular and non-cellular polyurethanes.

3,375,265

PRODUCTION OF TRIALKOXYBOROXINE

Lloyd C. Fetterly and George W. Conklin, Oakland, Kenneth F. Koetitz, Pleasant Hill, Friedrich G. Helfferich, Berkeley, Peter W. Gilderson, Oakland, and Stanley F. Newman, San Francisco, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,564

2 Claims. (Cl. 260—462)

1. The process of producing trialkoxyboroxine containing alkoxy radicals of at least 4 carbon atoms by partially hydrolyzing trialkyl ortho borate ester, wherein the alkyl is of at least 4 carbon atoms, in liquid phase at about 130 to about 225° C. in the presence of water vapor at a partial pressure no gerater than 250 mm. Hg.

3,375,266

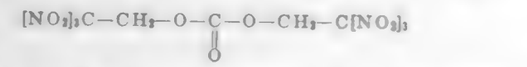
BIS-TRINITROETHYL CARBONATE AND PROCESS OF PREPARATION

Marion E. Hill, Kensington, Md., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Continuation-in-part of application Ser. No. 496,632, Mar. 24, 1955. This application Oct. 17, 1956, Ser. No. 616,579

6 Claims. (Cl. 260—463)

1. The explosive chemical compound having the formula



3. The process for the preparation of bis(2,2,2-trinitroethyl) carbonate comprising reacting phosgene with 2,2,2-trinitroethanol in the presence of a metal halide catalyst selected from a group consisting of aluminum chloride and aluminum bromide.

3,375,267

AMINOTETRAFLUOROBENZONITRILE

Edwin Dorfman and Russell L. K. Carr, Grand Island, and Claude Thomas Bean, Jr., Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,165

3 Claims. (Cl. 260—465)

This invention relates to aminotetrafluorobenzonitrile, a process for preparing this compound by the reaction of pentafluorobenzonitrile and ammonia, and a herbicidal method employing the invented compound.

3,375,268

PROCESS FOR PRODUCING CYANOACETIC ACID

George Kesslin, Teaneck, N.J., and Stephen L. Bearman and Mark M. Lewis, New City, N.Y., assignors to Kay-Fries Chemicals, Inc., West Haverstraw, N.Y., a corporation of New York

Filed Aug. 27, 1964, Ser. No. 392,394

6 Claims. (Cl. 260—465.4)

1. A process for producing sodium cyanoacetate which comprises mixing in an aqueous reaction medium the reactants sodium chloroacetate and approximately equivalent amounts of hydrogen cyanide and an alkali metal hydroxide at a temperature between about 25–40° C. and continuing the reaction in said aqueous medium at a temperature between about 50–120° C. until the sodium cyanoacetate is formed.

3,375,269

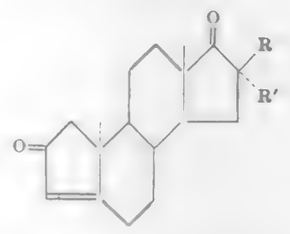
16-OXYGENATED-Δ^3-A-NORANDROSTENE-2,17-DIONES

Pacifico A. Principe, South River, and Seymour D. Levine, Princeton, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,812

5 Claims. (Cl. 260—488)

1. A compound of the formula



wherein R is hydrogen; R' is selected from the group consisting of hydroxy and the acyloxy radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms; and together R and R' is oxo.

3,375,270

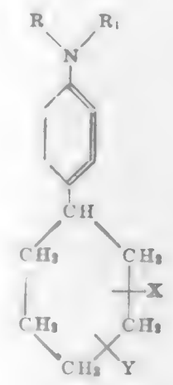
4-CYCLOHEXYL AND 4-(ALKYLCYCLOHEXYL) BICYCLO[2.2.2]OCTANE-1-AMINES

Jack A. Snyder, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,087

14 Claims. (Cl. 260—501.11)

1. A compound selected from the group consisting of those of the formula,



where

R, R_1, X and Y are selected from the group consisting of hydrogen, methyl and ethyl; and non-toxic salts of the basic compounds of said formula.

3,375,271

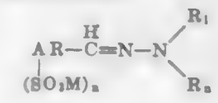
SUN-SCREENING COMPOUNDS

Sigmund C. Catino, Castleton, and Albert F. Strobel, Delmar, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 8, 1964, Ser. No. 381,239

6 Claims. (Cl. 260—510)

Compounds of the formula



wherein AR represents a benzene ring which may be substituted, M is hydrogen, a Group I metal, ammonium or amine, *n* is an integer from 1 to 3, R_1 and R_2 are independently hydrogen, alkyl, alkenyl, cycloalkyl, or cycloalkenyl, and at least one of R_1 and R_2 is not hydrogen.

3,375,272

PRODUCTION OF DIETHYLADIPIC ACID

Walter K. Henle, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 29, 1964, Ser. No. 371,185

2 Claims. (Cl. 260—537)

Reaction of dialkali metal 1,3-alkadiene linear dimer, e.g., disodiooctadiene, with an essentially stoichiometric amount of a non-variable valence polyvalent metal halide MR_n, where M is magnesium or aluminum, *n* is the valence 2 to 3 of M, and at least one R is halogen and any non-halogen R is hydrocarbyl, e.g. magnesium bromide, dissolved in an inert solvent, e.g., ether, produces the corresponding 3,6-metalooctadiene, and carbonation of the product produces the metal salt of a 2,2'-dialkenyl-substituted adipic acid, from which upon hydrogenation followed by hydrolysis is obtained 2,2'-dialkyladipic acid.

3,375,273

HYDROXYLAMINE DERIVATIVES AND PROCESS FOR MAKING THEM

David John Drain, Welwyn Garden City, John Gordon Bernard Howes, Bengeo, Hertford, and Haydn Windsor Richard Williams, Digswell, Welwyn, England, assignors to T. J. Smith & Nephew Limited, Kingston-upon-Hull, England, a British company

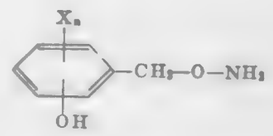
No Drawing. Filed Apr. 9, 1963, Ser. No. 271,596

Claims priority, application Great Britain, Apr. 10, 1962, 13,771/62

The portion of the term of the patent subsequent to Dec. 28, 1982, has been disclaimed

11 Claims. (Cl. 260—538)

1. A hydroxylamine derivative of general formula



wherein the hydroxyl group shown is in a position selected from the group consisting of the 2- and 4-positions,

X represents a member selected from the group consisting of hydrogen and halogen atoms, and

n represents a positive integer from 1 to 2.

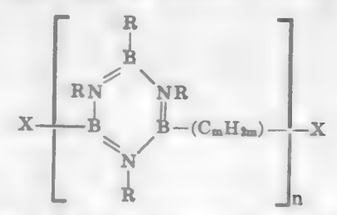
3,375,274

ALKYLENE BORAZINE POLYMERS

John P. Faust, Hamden, and Andrew J. Klanica, Cheshire, Conn., assignors to Olin Mathieson Chemical Corporation

No Drawing. Filed Nov. 20, 1964, Ser. No. 412,858

1. An alkylene borazine polymer having the formula:



where X is a halogen selected from the group consisting of chlorine, bromine and iodine, R is alkyl of 1 to 5 carbons, *m* is an integer from 1 to 12 and *n* is an integer from 3 to 16.

3,375,275

PREPARATION OF 5,8-DIHYDRO-5,8-METHANO-1,4-NAPHTHALENEDISULFONAMIDES

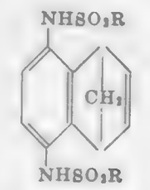
Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 366,150, May 8, 1964. This application June 26, 1964, Ser. No. 378,453

The portion of the term of the patent subsequent to Jan. 30, 1979, has been disclaimed and dedicated to the Public

1 Claim. (Cl. 260—556)

1. The method of preparing a compound corresponding to the formula



which comprises reacting cyclopentadiene with a p-quinonesulfonimide having the formula

wherein in the formulae R represents an alkyl group containing up to and including 4 carbon atoms; said reaction being carried out in the presence of at least a catalytic amount of tertiary amine.

3,375,276

METHOD FOR PREPARING TETRACYCLINE PRODUCTS

Saul Lewis Neidleman, Highland Park, Roland Walter Kinney, Trenton, and Frank Lee Weisenborn, Somerset, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 24, 1963, Ser. No. 290,173

2 Claims. (Cl. 260—559)

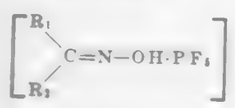
1. A process for preparing tetracycline derivatives of a compound selected from the group consisting of 7-chlortetracycline and 7-chloro-6-demethyltetracycline which comprises subjecting a compound selected from the group consisting of 7-chlortetracycline and 7-chloro-6-demethyltetracycline under aerobic conditions to the action of peroxidase in the presence of dihydroxy-fumaric acid.

3,375,277
COMPLEXES OF PHOSPHORUS PENTAFLUORIDE-OXIMES

Mervin E. Brokke, Richmond, Calif., George E. Lukes, deceased, late of El Cerrito, Calif., by John Hazzard, administrator, Kentfield, Calif., and Duane R. Arnekley, Sunnyvale, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 20, 1965, Ser. No. 450,265
5 Claims. (Cl. 260—566)

1. A compound of the formula



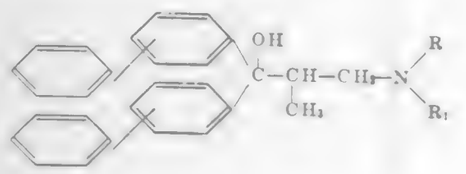
wherein R_1 is selected from the group consisting of lower alkyl radicals containing from 1 to 6 carbon atoms, inclusive, and phenyl, and R_2 is selected from the group consisting of hydrogen, lower alkyl radicals containing from 1 to 6 carbon atoms, inclusive, and phenyl, and R_1 and R_2 jointly are a divalent alkylene radical containing up to 5 carbon atoms.

3,375,278
1,1-BIS(BIPHENYLYL)-2-METHYL-3-TERTIARY AMINOPROPANOLS AND SALTS THEREOF

Robert B. Moffett, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 6, 1966, Ser. No. 555,253
2 Claims. (Cl. 260—570)

1. A compound of the formula



wherein R and R_1 are alkyl having from 1 to 4 carbon atoms, inclusive, and the acid addition salts thereof.

3,375,279
DIALKYNYL AMINES

James F. Vitcha, New Providence, and George L. Moore, South Plainfield, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Original application Feb. 20, 1961, Ser. No. 90,209, now Patent No. 3,268,524, dated Aug. 23, 1966. Divided and this application Mar. 10, 1965, Ser. No. 438,716
12 Claims. (Cl. 260—577)

Dialkynyl amines are prepared by a process which comprises forming an anhydrous mixture of paraformaldehyde, an inert hydrocarbon solvent, and a catalyst selected from the group consisting of catalytically-active salts and acetylides of the heavy metals of subgroups I–B and II–B of the Periodic Table of Elements, adding an atmosphere of acetylene on said mixture, and gradually adding to said mixture a primary hydrocarbyl amine having up to 20 carbon atoms, said amine being selected from the group consisting of aliphatic amines and monocyclic aromatic amines, and mixtures of the foregoing, said amine being added to said mixture at a uniform rate and at a temperature between about 40° C. and 90° C. and a pressure between about 2 and 40 atmospheres, the rate of addition of said amine being such that substantially no excess of unreacted amine is present in said reaction mixture.

3,375,280
17-SUBSTITUTED STEROID DERIVATIVES

Kenneth G. Holden, Stratford, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 13, 1964, Ser. No. 389,470
5 Claims. (Cl. 260—586)

Compounds of the generic class of 17-loweralkoxymethyl-B-nortestosterone and intermediates for preparing these compounds having antiandrogenic activity. The compounds are prepared by reacting 17,20-epoxy steroids with an alkali metal lower alkoxide.

3,375,281
PROCESS FOR THE PREPARATION OF STEARONE

Edward S. Rothman, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed May 13, 1966, Ser. No. 549,810
2 Claims. (Cl. 260—595)

1. A process for the preparation of stearone consisting of heating isopropenyl stearate at a temperature of at least 180° C. in the presence of at least a catalytic amount of a proton-providing acid catalyst.

3,375,282
PROCESS OF PREPARING NITROSOCARBORANE MONOMERS

Joel M. Kauffman, Lexington, Mass., and Joseph Green, Dover, and Marvin M. Fein, Westfield, N.J., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Aug. 5, 1965, Ser. No. 477,624
6 Claims. (Cl. 260—606.5)

1. A process for preparing nitrosocarborane products selected from the group consisting of 1-loweralkyl-2-nitrosocarboranes and 1-nitrosocarborane comprising the steps of contacting in the presence of ether containing inert solvent, a carboranyllithium selected from the group consisting of carboranyllithium and loweralkylcarboranyllithium and nitrosyl chloride until substantial quantities of nitrosocarborane products are formed, and isolating the products contained therein.

3,375,283
PREPARATION OF METHOXY PHENOLS FROM SPENT PULPING LIQUORS

David W. Goheen and John B. Martin, Camas, Wash., assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Continuation-in-part of application Ser. No. 475,834, July 29, 1965. This application Sept. 26, 1966, Ser. No. 584,632
14 Claims. (Cl. 260—613)

1. The process of preparing a methoxy phenol from waste pulping liquor comprising:

evaporating said waste liquor substantially to dryness;

subjecting the resulting solids to tumbling:

during said tumbling, subjecting said solids to a rapid pyrolysis at a temperature of from about 350° C. to 500° C. to cause the formation of a pyrolyzate containing said methoxy phenol;

substantially immediately and continuously removing said pyrolyzate from said pyrolysis zone as it is formed;

and recovering said methoxy phenol from said pyrolyzate.

3,375,284
PROCESS FOR PURIFYING AND DECOLORIZING ALKYLPHENOL-ETHYLENE OXIDE ADDUCTS

Harry T. Zika, South Charleston, and Louis F. Theiling, Jr., Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 104,848, Apr. 24, 1961. This application Aug. 9, 1967, Ser. No. 659,306
1 Claim. (Cl. 260—613)

There is disclosed a process for purifying and decolorizing alkylphenol-ethylene oxide adducts which comprises contacting said adducts with an alkali metal borohydride.

3,375,285
CATALYTIC HYDROGENATION OF POLYCYCLIC AROMATIC QUINONES

Perry A. Argabright, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 12, 1963, Ser. No. 330,000
14 Claims. (Cl. 260—618)

1. The process comprising reacting with hydrogen a compound having at least one terminal 1,4-quinoid ring fused to an aromatic ring in the presence of catalytic amounts of copper chromite and at temperatures and hydrogen pressures effective to reduce at least one said quinoid ring to produce a nonketo compound selected from the group consisting of mono- and polyhydric alcohols, wherein the temperature is from about 125° C. to about 200° C., the hydrogen pressure is in excess of about 500 p.s.i.g. and the reaction is carried out for a period of time ranging from about 1 to about 8 hours.

3,375,286
FREPARATION OF 1,1-DICHLOROCYCLOPROPANE COMPOUNDS

Howard J. Platte, Groves, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,936
4 Claims. (Cl. 260—650)

A method of producing 1,1-dichlorocyclopropane hydrocarbon compounds comprising contacting in the presence of benzyl alcohol an olefinic hydrocarbon at a temperature between about 60–110° C. with an alkali metal hydroxide and chloroform utilizing a mole ratio of olefin to chloroform to alkali metal hydroxide of between about 1:2:1 and 10:10:1 wherein the water content during said contacting is maintained at less than 0.1 wt. percent. The products of the method are useful as hardening agents for elastomers, fire retardants, fungicides and insecticides.

3,375,287
PROCESS FOR ISOMERIZING ETHYLENICALLY UNSATURATED COMPOUND POSSESSING CYCLOALIPHATIC NUCLEUS

Samuel W. Tinsley, Edward A. Rick, and James E. McKeon, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

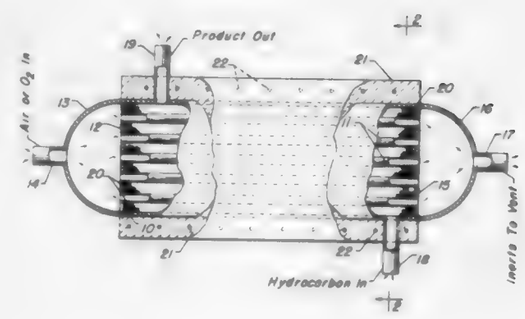
No Drawing. Continuation of application Ser. No. 396,416, Sept. 14, 1964. This application July 21, 1967, Ser. No. 655,239
23 Claims. (Cl. 260—666)

This invention relates to the isomerization of an ethylenically unsaturated compound which contains a cycloaliphatic nucleus.

3,375,288
DEHYDROGENATION OF HYDROCARBONS AT HIGH CONVERSION LEVELS

Armand J. de Rosset, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Oct. 28, 1964, Ser. No. 407,450
9 Claims. (Cl. 260—669)



A hydrocarbon is subjected to dehydrogenation in contact with one side of a silver membrane. An oxygen-containing gas is maintained in contact with the other side of the membrane. Oxygen is diffused through the membrane to oxidize the resulting free hydrogen, liberated during the course of the dehydrogenation, thereby lowering the hydrogen partial pressure of the reaction mixture. This permits the reaction to proceed at a relatively low temperature and with high selectivity toward the desired less saturated hydrocarbon product.

3,375,289
METHOD FOR PREPARATION OF DIVINYLBENZENES

Khachik Egorovich Khchejan, Ninel Josifovna Jakovich, Alexei Fedorovich Pavlichev, and Larisa Borisovna Izrael, Moscow, U.S.S.R., assignors to Nauchno-Issledovatelsky Institute Sinteticheskikh Spirtov i Organicheskikh Produktov, Moscow, U.S.S.R.

No Drawing. Filed Jan. 12, 1965, Ser. No. 425,045
19 Claims. (Cl. 260—669)

The method of subjecting diethylbenzenes to oxidation with oxygen-containing gases to yield diacetylbenzenes, reducing catalytically the diacetylbenzenes thus formed, and thereafter dehydrating, in the presence of a dehydration catalyst, the bis-(α-hydroxyethyl)-benzene formed to yield divinylbenzenes.

3,375,290
PROCESS FOR WORK-UP OF AROMATIC C_9-HYDROCARBONS

Karl Smeykal, Wilhelm Pritzkow, Hermann G. Hauthal, and Georg Mahler, Leuna, Germany, assignors to VEB Leuna-Werke "Walter Ulbricht," Leuna, Germany

No Drawing. Filed Sept. 3, 1964, Ser. No. 394,303
9 Claims. (Cl. 260—672)

1. Method of recovering trimethylbenzene from a mixture of aromatic C_9-hydrocarbons containing the same and also containing at least one substance selected from the group consisting of ethyltoluene and isopropyltoluene, which comprises reacting said mixture with benzene in contact with a Friedel-Crafts catalyst so as to selectively transfer the corresponding ethyl or isopropyl group from said substance to said benzene to form the corresponding alkylbenzene and toluene while said trimethylbenzene remains unreacted; separating said catalyst from the reaction mixture; and fractionating the reaction mixture into its components including toluene, said alkylbenzene and trimethylbenzene by fractional distillation.

3,375,291

PROCESS FOR PREPARING DIOLEFINS

James L. Callahan, Bedford, and Ernest C. Milberger, Maple Heights, Ohio, assignors to Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 240,734, Nov. 28, 1962. This application Mar. 31, 1964, Ser. No. 356,028

11 Claims. (Cl. 260—680)

The catalytic oxidative dehydrogenation of monoolefins is conducted in a vertical reactor by passing oxygen and the monoolefin upwards through successive zones containing fluidized catalyst. The catalyst is regenerated by introducing the oxygen to a zone below the zone to which the monoolefin is fed.

3,375,292

DIOLEFIN PRODUCTION

Walter K. Henle, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 26, 1965, Ser. No. 482,926

8 Claims. (Cl. 260—680)

1. The process of producing β,β'-dialkyl-α,α'-diolefin by intimately contacting dialumino tris-octamethylene with acyclic hydrocarbon α-olefin of from 3 to 5 carbon atoms at a temperature of from about 100° C. to about 200° C. and a pressure of from about 1 atmosphere to about 200 atmospheres, in an inert reaction environment.

3,375,293

RESTORING CATALYST ACTIVITY IN AN ISOMERIZATION PROCESS

Walter E. Breckoff, Royal Oak, and John M. McEuen, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,739

12 Claims. (Cl. 260—683.2)

A process is described for rejuvenating an olefin isomerization catalyst whose activity has diminished during the isomerization process. The olefin isomerization catalyst consists essentially of the Group VIII metal of the second and third long periods on an inert support. The rejuvenation is accomplished by treating the spent catalyst with an alkyl benzene at elevated temperatures.

An improved terminal to internal olefin isomerization process is also described which includes the rejuvenation process set out above.

3,375,294

OLEFIN POLYMERIZATION WITH A POTASSIUM-AMINE-ACTIVATED CARBON CATALYST

William O. Beavers, El Paso, Tex., assignor to El Paso Natural Gas Products Company, a corporation of Texas

No Drawing. Filed Feb. 11, 1963, Ser. No. 257,795

9 Claims. (Cl. 260—683.15)

1. The process for polymerizing an aliphatic 1-olefine hydrocarbon feed material having up to and including 5 carbon atoms per molecule, which comprises contacting under polymerizing conditions said hydrocarbon feed material with a catalyst composition consisting essentially of activated carbon, potassium and a nitrogen containing compound from the group consisting of ammonia, primary, secondary and tertiary amines, the amount of catalyst composition falling within the range of from 0.01 weight percent to 25.0 weight percent of the hydrocarbon, the ratio of carbon to potassium falling within the range of 0.01 to 100 mol of carbon per mol of potassium and the nitrogen containing compound being present in an amount of from .001 to 5 weight percent, based on the hydrocarbon feed material.

3,375,295

BODYING POLYMER LIQUID

Richard D. Rowe, Big Spring, Tex., assignor to Cosden Oil & Chemical Company, Big Spring, Tex., a corporation of Delaware

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,353

5 Claims. (Cl. 260—683.15)

A low molecular weight polymer fraction, simultaneously produced with heavier liquid polybutene, the total polymeric mixture being normally inert to substantial modification by Friedel-Crafts catalyst, is separated and further treated with Friedel-Crafts catalyst to body the same to a viscous polybutene.

3,375,296

CONVERSION OF ETHYLENE TO HIGHER 1-OLEFINS

Robert E. Reusser, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Apr. 28, 1965, Ser. No. 451,621

11 Claims. (Cl. 260—683.15)

Ethylene is converted to higher 1-olefins using a catalyst formed on mixing chromium halide and an organolithium compound.

3,375,297

MIXTURES OF POLYHYDROXYETHERS AND POLYARYLENE POLYETHERS

Bruce P. Barth, Somerville, Thomas E. Bugel, New Market, and Warren F. Hale, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 27, 1965, Ser. No. 459,454

17 Claims. (Cl. 260—823)

1. Polymeric mixture characterized by improved thermal stability, improved resistance to thermal stress embrittlement and excellent adhesion comprising from about 1 to about 99 parts by weight of a linear thermoplastic polyarylene polyether composed of recurring units having the formula

$$—O—E—O—E'—$$

wherein E is the residuum of a dihydric phenol and E' is the residuum of a benzenoid compound having an inert electron withdrawing group in at least one of the positions ortho and para to the valence bonds, and where both of said residua are valently bonded to the ether oxygens through aromatic carbon atoms and from about 99 to about 1 part by weight of a linear thermoplastic polyhydroxyether having the general formula

$$\text{-}O—D—O—D'\text{-}_n$$

wherein D is the residuum of a dihydric phenol, D' is a hydroxyl containing residuum of an epoxide, and n is at least 30.

3,375,298

CROSSLINKED POLYPHENYLENE OXIDE

Daniel W. Fox, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 21, 1965, Ser. No. 457,797

23 Claims. (Cl. 260—830)

A crosslinked polyphenylene oxide formed by the reaction of an amino-substituted polyphenylene oxide and a di- or poly-functional curing agent reactive therewith. The ability to crosslink makes the normally thermoplastic polyphenylene oxides thermosetting and resistant to many organic solvents. Epoxy resins can be reacted with the amino-substituted polyphenylene oxides to form copolymers.

3,375,299

LATENT AMIDOPOLYAMINE CURING AGENTS FOR EPOXY RESINS AND POLYURETHANES

Morton Levine, Birmingham, Michael J. Neme, Detroit, and Steven G. Plovan, Oak Park, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,116

13 Claims. (Cl. 260—830)

A particulate latent diamine curing agent, which is nonreactive with urethane prepolymers, epoxy resins and the like at room temperature but operative to affect rapid cures of these materials at elevated temperatures, is prepared by reacting a suitable solid diamine in finely divided particulate form with an ethylenically saturated carboxylic acid chloride wherein the acid chloride is dissolved in a solvent in which the amine is substantially insoluble such that the acid chloride undergoes reaction with only the amine groups exposed in or near the surface of the solid particle and the unexposed active amine groups below the surface are blocked off and thereby prevented from reacting with synthetic resins at room temperature.

3,375,300

COMPOSITIONS CONTAINING MALEIC ANHYDRIDE - POLYPROPYLENE GRAFT COPOLYMERS, AND A FATTY ACID POLYAMIDE OR AN AMINE ALDEHYDE RESIN

Walter S. Ropp, Mockingbird Hills, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,521

7 Claims. (Cl. 260—857)

Compositions are disclosed comprising a maleic anhydride-modified propylene polymer containing as a crosslinking agent a composition containing a plurality of epoxide groups, a polyamide resin or etherified amine aldehyde resin. These are useful as primers for adhering an unmodified propylene polymer to wood or metal. The coated compositions thus exhibit improved resistance to a salt spray atmosphere.

3,375,301

POLYMER COMPOSITIONS FROM VINYL MONOMERS AND UNSATURATED POLYESTER-POLYETHER COPOLYMERS

Leslie C. Case and Laura K. Case, both of 14 Lockeland Road, Winchester, Mass. 01890

No Drawing. Continuation-in-part of application Ser. No. 168,062, Jan. 23, 1962. This application Oct. 7, 1965, Ser. No. 493,933

26 Claims. (Cl. 260—869)

Novel ethylenically unsaturated polyester-polyether resins capable of copolymerizing with vinyl monomers are prepared by the reaction of an unsaturated anhydride with an alkylene oxide in the presence of a polymerization starter selected from the group consisting of water, hydrogen sulfide, inorganic monomeric phosphorous-containing acids and organic compounds having a hydroxyl, carboxyl or sulfhydryl radical. The resins are prepared in the absence of other catalysts.

3,375,302

THERMOPLASTIC BLEND OF ABS RESIN AND AMORPHOUS, LINEAR POLYPROPYLENE AND PROCESS FOR MAKING SAME

Shinji Iwai and Naoki Yoshimi, Tokyo, Shigenobu Mita, Yokohama, and Chuji Shiode, Tokyo, Japan, assignors of one-third each to Shinji Iwai, Tokyo, Japan, Fudo Kagaku Kogyo Kabushiki Kaisha and Chisso Corporation, both of Tokyo, Japan, both corporations of Japan

No Drawing. Filed Oct. 9, 1964, Ser. No. 402,919

Claims priority, application Japan, Oct. 15, 1963, 38/55,287

15 Claims. (Cl. 260—876)

Thermoplastic blend of an ABS resin and a small amount of amorphous polypropylene having an average molecular weight of between 10,000 and 100,000. The blend has improved melt flowing properties and a higher heat distortion temperature.

3,375,303

ETHYLENE POLYMER COMPOSITION PROVIDING GOOD CONTOUR SURFACE AT VERY HIGH EXTRUSION RATES

William H. Joyce, Somerset, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 225,859, Sept. 24, 1962. This application Oct. 7, 1964, Ser. No. 402,318

4 Claims. (Cl. 260—897)

High speed extrudability of low density polyethylene is improved by addition of a minor quantity of high density, high molecular weight polyethylene having a density of at least 0.930, a melt index of not more than 0.1 decigram per minute and a melt flow of not more than 10 decigrams per minute.

3,375,304

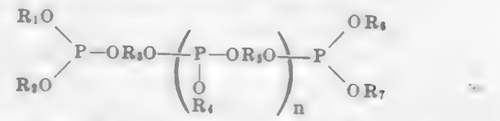
POLYPHOSPHITES

Millard S. Larrison, Livingston, N.J., assignor, by mesne assignments, to Small Business Administration, Richmond, Va., and First National Bank of Morgantown, Morgantown, W. Va.

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,393

9 Claims. (Cl. 260—929)

Compounds are prepared having the formula



where R_1, R_2, R_4, R_6 and R_7 are carbocyclic aryl, R_3 and R_5 are a member of the group consisting of polyalkylene glycol, alkylidene bisphenol, hydrogenated alkylidene bisphenol, and a ring halogenated alkylidene bisphenol from which the two terminal hydrogens have been removed and n is an integer of at least 1. The compounds are useful as stabilizers for vinyl chloride resins and hydrocarbon polymers.

3,375,305

PROCESS FOR SELF-TRANSESTERIFICATION OF PHOSPHATE POLYOLS

John T. Patton, Jr., and Robert J. Hartman, Wyandotte, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Sept. 25, 1964, Ser. No. 399,398

10 Claims. (Cl. 260—982)

Polymeric phosphate esters are prepared by the self-transesterification of a phosphate polyol in the presence of a ferrous metal catalyst.

3,375,306

METHOD OF PRODUCING DENSE, SINTERED BODIES OF UO_2 OR UO_2-PuO_2 MIXTURES

Lewis Eric Russell, Oxford, John David Lawrence Harrison, Chilton, and Norman Harry Brett, Hathersage, near Sheffield, England, assignors to United Kingdom Atomic Energy Authority, London, England

No Drawing. Continuation of application Ser. No. 106,185, Apr. 28, 1961. This application Jan. 11, 1965, Ser. No. 424,822

Claims priority, application Great Britain, Apr. 29, 1960, 15,240/60

5 Claims. (Cl. 264—.5)

A method of producing dense sintered bodies of either uranium dioxide or a mixture of uranium dioxide and plutonium dioxide comprising pressing a powder to form a compact, heating the compact at a temperature of from 1300° C. to 1600° C. in a sintering atmosphere which is

either carbon dioxide or carbon dioxide containing carbon monoxide and cooling the sintered body in a reducing atmosphere which, in the case where the body is uranium dioxide, is dry hydrogen, wet hydrogen or a mixture of carbon dioxide and carbon monoxide and, in the case where the body is mixed uranium and plutonium dioxides, is wet steam or carbon dioxide mixed with carbon monoxide. In this way, a sintered body having a ratio of oxygen to metal atoms from 1.98:1 to 2.02:1 and a density in excess of 95% of the theoretical density is obtained.

3,375,307

PROCESS FOR THE FABRICATION OF FUEL ELEMENTS FOR NUCLEAR REACTORS

Pierre Blum, Grenoble, Claude Moreau, Seyssinet-Pariset, and Louis Bochirol, Grenoble, France, assignors to Commissariat à l'Energie Atomique, Paris, France

No Drawing. Filed Jan. 17, 1966, Ser. No. 520,879
Claims priority, application France, Jan. 21, 1965, 2,841
2 Claims. (Cl. 264—.5)

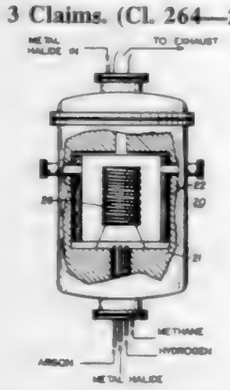
1. Process for the fabrication of spherical fuel elements for use in high temperature reactors of the "pebble-bed" type, the steps of preparing a kernel of fuel by molding a plastic paste of a refractory combustible powder having a granular size between 100 and 400 microns mixed with a binder, drying the kernel, then depositing pyrolytic carbon in the pores of the kernel by cracking gaseous hydrocarbons therein at a temperature between 800° and 1000° C., whereby the kernel is rendered impermeable, then coating the kernel with a layer of graphite using a paste formed in the same way as the paste forming the kernel, then cracking gaseous hydrocarbons at a temperature between 800° and 1000° C. in the layer to deposit carbon in and render the layer impermeable, and then introducing the coated kernel into a recess in a graphite ball, the ratio of resistance to compression of the kernel and of the layer being at least equal to 1.5:1.

3,375,308

METHOD OF MAKING HIGH PURITY AND NON-MELTING FILAMENTS

Michael Turkat, Bayside, N.Y., assignor, by mesne assignments, to Space Age Materials Corporation, Woodside, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 130,153, Aug. 8, 1961. This application Apr. 21, 1964, Ser. No. 361,492
3 Claims. (Cl. 264—29)



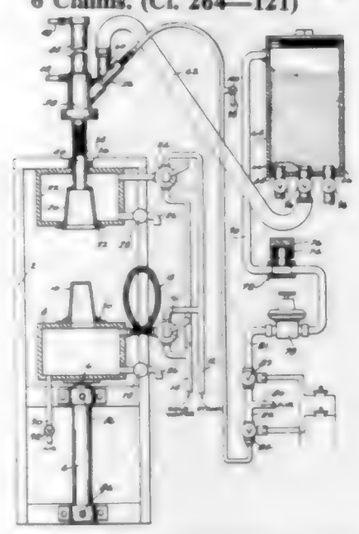
1. The method of forming a pure and non-melting filament, comprising the steps of cracking a hydrocarbon gas at a temperature of at least 3,450 to 5,000 degrees Fahrenheit to form a vapor, depositing said vapor on a mandrel, which has a grooved surface, to form a coating thereon, removing said coating from said grooved surface mandrel in the form of a filament, and stretching said filament at a temperature of upwards of about 4500 degrees Fahrenheit to increase its tensile strength.

3,375,309

METHOD OF INTRODUCING PARTICULATE MOLDABLE MATERIAL INTO A CONFINED SPACE

Donald E. Stevens, Sheboygan Falls, Wis., assignor to Kohler General, Inc., a corporation of Wisconsin

Filed June 17, 1964, Ser. No. 375,699
6 Claims. (Cl. 264—121)



1. A method introducing particulate moldable material into a confined space in an otherwise substantially closed mold for the molding of a workpiece, said method comprising the storage of particulate molding material at a point remote from the mold, the temporary establishment of superatmospheric pressure on the material in storage, the temporary establishment of a current of convection fluid toward the mold, the entrainment of particulate material in said current, the material receiving kinetic energy from the fluid of said current, the kinetic energy of the entrained material carrying it into the mold, developing back pressure of convection fluid in the mold and thereby arresting further flow of such fluid while the kinetic energy of the entrained material carries such material onward into the mold, the return of the convection fluid from the mold under the back pressure developed by such material in the mold, a reverse current of said fluid moving into particulate molding material which is still in storage, any excess of material at the mold being carried away from the mold by the return of the reversed current of said fluid, the trapping of the returned material in the material in storage, and the subsequent release of the returned convection fluid.

3,375,310

METHOD FOR MAKING SURGICAL CATHETERS

Wilbur R. Koehn, Sands Point, N.Y.

Continuation-in-part of application Ser. No. 82,534, Jan. 13, 1961. This application Feb. 11, 1964, Ser. No. 347,990
6 Claims. (Cl. 264—139)

1. The method of fabricating a catheter needle for insertion into a body cavity comprising a catheter and penetrating element wherein the penetrating element is adapted to be withdrawn by sliding the penetrating element rearwardly while the catheter is being held following insertion of the catheter needle into the body cavity comprising the steps of: providing a penetrating element having a hub at one end and a pointed end at the other and with an intermediary shank therebetween; dipping the hub and shank of the penetrating element into a plastic resin in liquid phase to a level adjacent its pointed end to coat the shank and hub with a continuous layer of liquid resin; thereafter subjecting the plastic resin with a first heat application to alter the viscosity of the plastic resin coating to a predetermined level and substantially

simultaneously suspending the coated shank and hub from the pointed end of the penetrating element permitting the resin layer to run off and flow under the influence of gravity sufficiently to obtain a predetermined taper and thickness so as to produce a tubular wall of gradually and progressively increasing thickness from a thin end having a substantial knife edge adjacent the pointed end of the penetrating element along the shank thereof toward

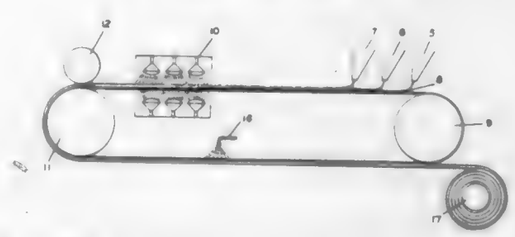
the hub for substantially the entire length of said shank; subjecting the coated penetrating element to a second heat application to convert it from a liquid to a substantially solid phase and partially cure it sufficiently to the wall thickness; and then serving the plastic resin around the hub and removing the end from the hub farthest the pointed end of the penetrating element, whereby to form a catheter needle.

3,375,311

METHOD OF FORMING DECORATIVE THERMOPLASTIC VINYL RESIN SHEETS

John P. Franze, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed June 5, 1963, Ser. No. 285,665
9 Claims. (Cl. 264—171)



A method for forming a multiple layer integral vinyl sheet material in which a plurality of layers of a free-flowing thermoplastic vinyl resin mix of porous particles of unfused thermoplastic vinyl resin, liquid vinyl plasticizer, vinyl stabilizer, pigment and filler, each of the layers being of a composition different from adjacent layers, are laid up on a non-porous carrier, heated to a fluidized condition, and extruded between the carrier and a non-porous consolidating roll, both the carrier and the non-porous consolidating roll being driven at substantially the same speed to minimize mixing between the layers being consolidated therebetween.

3,375,312

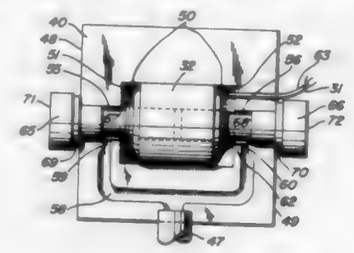
ENCAPSULATION PROCESS

Edward E. Hart, Springfield, Ohio, assignor, by mesne assignments, to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 26, 1963, Ser. No. 304,500
5 Claims. (Cl. 264—272)

1. In a method for the manufacture of a stator for electric motors, the steps comprising:

assembling a stack of annular core laminations presenting upon assembly a plurality of winding slots,
disposing a stator winding in said slots,
assembling a stack of laminations about said core laminations to form a magnetic yoke thereabout,
placing said assembly into the cavity of a mold,



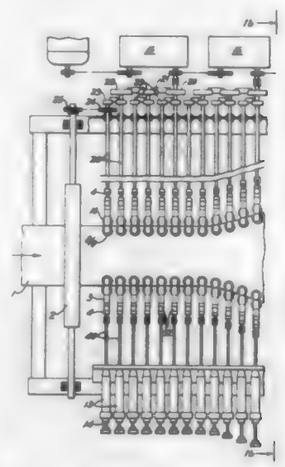
injecting a thermoplastic material into the center of the mold and flowing same radially outwardly about the ends of said multi-stacked assembly and into the interstices thereof,
then during the course of the polymerization of said material shearing said sprues formed within said mold, and thereafter retaining said article within the mold until fully cured, whereby no finishing steps are required to remove burrs and no stresses are set up in the molded material adjacent the sprues.

3,375,313

PROCESS FOR THE CONTINUOUS BIAXIAL STRETCHING OF A TRAVELING SHEET

Hieronymus Zygan and Otto Koch, Leverkusen, Hermann Schnell, Krefeld-Urdingen, Arthur Prietzschk, Dormagen, and Kurt Römling, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

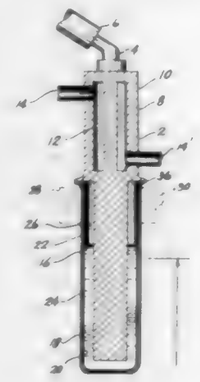
Continuation-in-part of application Ser. No. 259,474, Jan. 25, 1963, which is a division of application Ser. No. 74,715, Dec. 7, 1960, now Patent No. 3,114,929, dated Dec. 24, 1963. This application Oct. 21, 1965, Ser. No. 505,598
Claims priority, application Germany, Dec. 12, 1959, F 30,071
3 Claims. (Cl. 264—289)



A sheet is passed through independently controlled holding devices which are in spaced relationship to one another and aligned on opposite sides of the sheet and independent of the other pairs of holding devices at each end of the sheet. The independently controlled holding devices are independently operated to independently control the force and distance between each pair of opposing holding devices to correspondingly control the tension on the sheet in the transverse direction while the sheet is being stretched in the longitudinal direction.

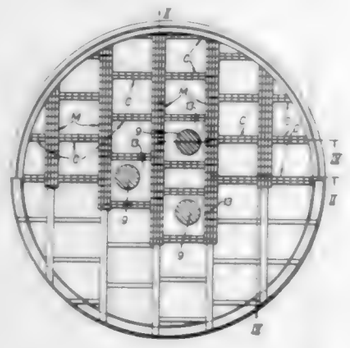
ELECTRICAL

3,375,314
ELECTRODE FOR GLASS MELTING FURNACES
Woodrow E. Sinner, Vashon, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Oct. 8, 1964, Ser. No. 402,413
9 Claims. (Cl. 13—6)



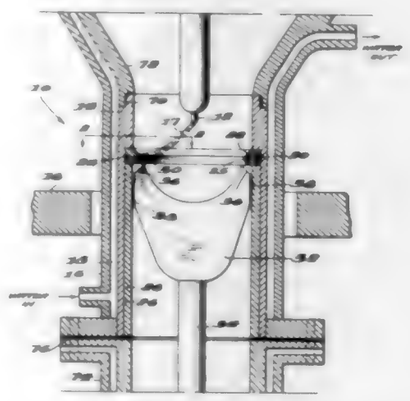
1. An electrode for sustaining glass or the like in a molten condition comprising in combination:
(a) an elongated body having an upper, middle, and bottom section,
(b) said upper section provided with electrical connecting means and cooling means,
(c) said bottom section enveloped with a shell of platinum mounted on said middle section in liquid tight relationship and being in spaced relationship with said bottom section, thus forming an enclosed space, and
(d) said enclosed space being partly filled with bismuth and its remaining space being a vacuum.

3,375,315
ARC FURNACE ROOF
William Gray, Uddingston, Scotland, assignor to John G. Stein & Company Limited
Filed Nov. 17, 1964, Ser. No. 411,739
Claims priority, application Great Britain, Nov. 18, 1963, 45,410/63
5 Claims. (Cl. 13—9)



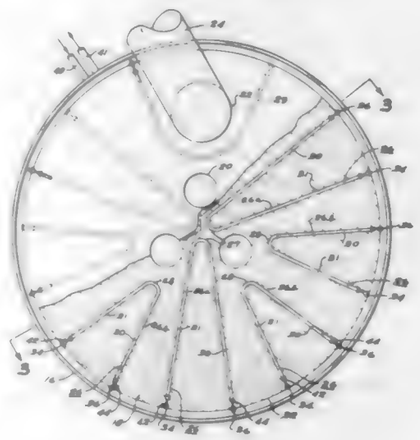
1. A furnace roof comprising a plurality of spaced parallel main beams extending across the roof, a plurality of cross beams transverse to said main beams, said main beams and said cross beams defining a plurality of rectangular open frames of small size compared to the size of the roof as a whole, each of said beams being composed of suspended bricks, and filler materials which fill said open frames, said filler materials being supported by said beams.

3,375,316
ELECTRIC ARC FURNACE FOR THE PREPARATION OF ACETYLENE BY PYROLYSIS OF HYDROCARBONS
Alexander Thomas Harris, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 18, 1964, Ser. No. 390,287
6 Claims. (Cl. 13—9)



The apparatus herein described and claimed relates to improvements in an electric arc furnace which may be used for pyrolysis of hydrocarbons and more particularly, to an improved outer electrode for this furnace, which electrode has longer life and facilitates removal of carbon deposits forming thereon during operation of the furnace.

3,375,317
WATER-COOLED ELECTRIC FURNACE ROOF
Kenneth W. Hansen, Bethel Park, and Donald L. Martin, Monroeville, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1965, Ser. No. 436,131
8 Claims. (Cl. 13—9)



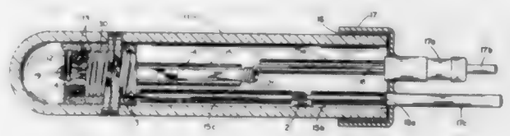
1. In an electric furnace, a circular roof containing a monolithic refractory material and provided with a plurality of centrally located vertical openings there-

through, an electrode disposed in each opening, a plurality of independent U-shaped conduits embedded entirely within said refractory material, said conduits being characterized by having an apex disposed closely adjacent an electrode and legs extending toward the outer periphery of the roof, said conduits being spaced substantially equal distances apart from one another, the ends of each leg of said U-shaped conduits extending through the refractory material and exterior thereto along the outer periphery thereof so as to define an inlet and an outlet for each conduit, each inlet and outlet having a separate control valve, a common tubing attached to each inlet for discharging the cooling medium from said conduits.

3,375,318
METHOD AND AN ARRANGEMENT FOR MEASURING AND CONTROLLING ELECTRODE POSITIONS IN ELECTRIC FURNACES AND THE LIKE
Ove Kjølseth, Oslo, Norway, and Sven Harry Willners, Lidingo, Sweden, assignors to Elektrokemisk A/S, Oslo, Norway, a company of Norway
Filed Oct. 22, 1964, Ser. No. 405,726
Claims priority, application Sweden, Oct. 24, 1963, 11,683/63
6 Claims. (Cl. 13—13)

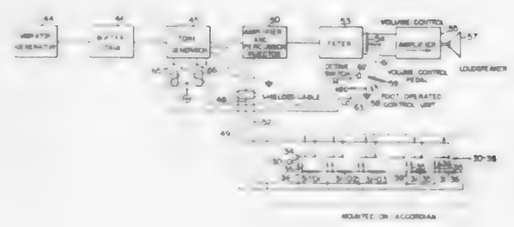
A furnace electrode is displaced by an arbitrary differential in height and the effect of such displacement upon a dependent electrical parameter, such as the resistance, is measured. The derivative of the change in resistance with respect to the displacement in height is formed and such derivative alone, or multiplied by the resistance value comprising one or the other of the limits of the change in resistance or preferably the average of the limits, is correlated to the actual height of the submerged tip of the electrode above a pool of molten material in the furnace. In this way, the position of the electrode tip can be accurately determined even though it is not directly observable during operation of the furnace.

3,375,319
HIGH TEMPERATURE ELECTRICAL HEATING UNIT
Jacob Howard Beck, Newton, Mass., assignor to BTU Engineering, Inc., Waltham, Mass., a corporation of Delaware
Filed Nov. 22, 1965, Ser. No. 509,137
5 Claims. (Cl. 13—25)



A long-life electrical heating unit is described which can be used in electrical diffusion furnaces at temperatures up to 1600° C. without the need of an inert atmosphere. The unit comprises an outer insulating tube nonporous to gas, a central electrically insulating tube porous to gas, a thin high resistance wire on the central tube and a thick low resistance lead made of metal of higher oxygen affinity than the wire metal.

3,375,320
ACCORDION KEYBOARD CONTROLLED ACCOMPANIMENTAL TONE GENERATOR
George J. Carras, 622 Avery St., Parkersburg, W. Va. 26101
Continuation-in-part of application Ser. No. 291,396, June 28, 1963. This application Feb. 23, 1965, Ser. No. 439,505
7 Claims. (Cl. 84—1.04)

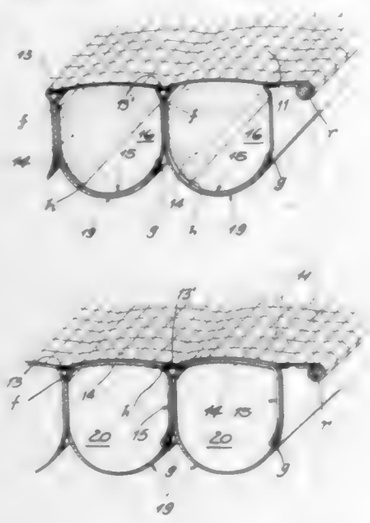


An attachment for an accordion, said accordion comprising a keyboard having a plurality of keys, and an individual valve associated with each key, depression of a particular key causing operation of its associated valve to cause the sounding of a predetermined note corresponding to said particular key, said attachment comprising a plurality of individual electrical contact means each operatively associated with one of the keys of said keyboard within a predetermined range comprising a plurality of contiguous octaves, a plurality of resistors connected to said contact means to produce an effective resistance, the magnitude of which is controlled by said contact means, electrically controllable tone generating means, said tone generating means comprising a pitch control circuit connected for response to said effective resistance, said tone generating means producing a tone the pitch of which is determined by the magnitude of said effective resistance, said pitch corresponding to the note produced by said accordion in response to the depression of said particular key, and loudspeaker means connected to said tone generating means for acoustically reproducing a note corresponding to said predetermined tone to accompany said note sounded by said accordion.

3,375,321
WALL STRUCTURE WITH MEANS FOR CONTROLLING THE RADIATION TRANSMISSIVITY OF THE STRUCTURE
Nikolaus Laing, 35–37 Hofener Weg, 7141 Aldingen, Germany
Filed July 16, 1965, Ser. No. 472,606
Claims priority, application Germany, July 17, 1964, L 48,331
The portion of the term of the patent subsequent to May 3, 1983, has been disclaimed
14 Claims. (Cl. 174—35)

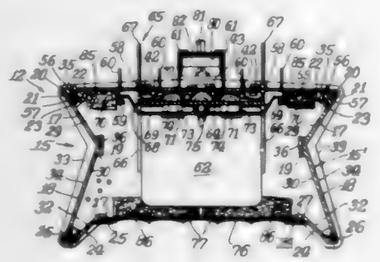
A wall structure in which a plurality of independent adjacent foil strips each having a portion of low radiation transmissivity integrally joined to a portion of high radiation transmissivity are fixed along edges thereof to a pair of outer layers in such a manner that when the spaces between one outer layer and said strips are filled with fluid, said portions of low radiation transmissivity will abut against the other outer layer to prevent penetra-

tion of radiation through the wall, while when the spaces between the strips and the other outer layer are filled with



fluid, radiation will be substantially free to penetrate through the wall structure.

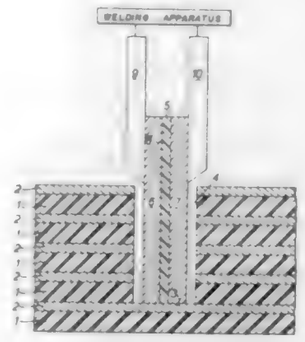
3,375,322
POWER UNIT ASSEMBLY FOR FLUORESCENT LIGHTING SYSTEM
Pasquale S. Serio, Prospect Heights, and Elden H. Witte, Wauconda, Ill., and Benjamin S. Benson, Jr., New Haven, Conn., assignors to Thomas Industries Inc., Louisville, Ky., a corporation of Delaware
Filed Sept. 23, 1963, Ser. No. 310,817
6 Claims. (Cl. 174—52)



4. A fluorescent lamp power unit assembly comprising a housing having a top wall, ballast means within said housing, frame means secured to said ballast means, means including unrestrained resilient means for mounting said frame means relative to said housing whereby to dampen vibrations of said ballast means, and said frame means having projections extending through said top wall and unconnected with the latter for dissipating heat developed by said ballast means.

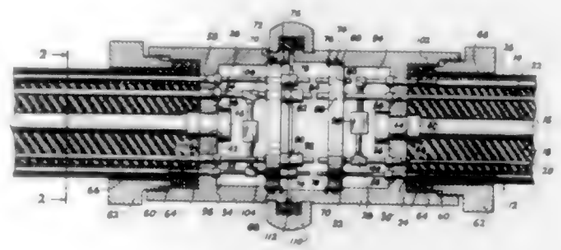
3,375,323
MULTI-LAYER PRINTED CIRCUIT TERMINAL ARRANGEMENT AND METHOD OF MAKING SAME
Antony James Mayhew, Billericay, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Mar. 30, 1966, Ser. No. 538,696
Claims priority, application Great Britain, Apr. 5, 1965, 14,359/65
7 Claims. (Cl. 174—68.5)

This invention is directed to a multi-layer printed circuit and terminal arrangement in which a multi-layer circuit board is formed from a plurality of conductive circuit layers and insulated layers in sandwiched relationship. A clearance hole extends from one side of the arrangement and terminates internally thereof at one of the conductive layers. A plurality of conductors spaced by an insulating



member are disposed within the clearance hole, and terminal ends of the conductors in contact with the conductive layer are secured thereto.

3,375,324
PRESSURE CABLE
Sheldon Martin Miller, 1403 E. 5th Court, Tulsa, Okla. 74120
Filed Oct. 23, 1965, Ser. No. 503,109
6 Claims. (Cl. 174—101.5)

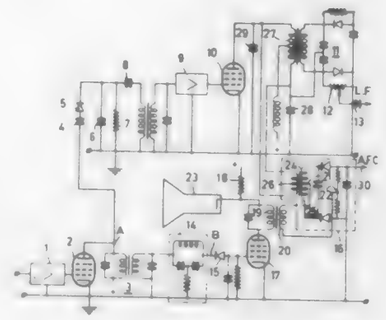


2. A pressure cable comprising a plurality of cable sections connected in tandem relation, each of said cable sections having an internal chamber means and means provided in each cable section for automatically controlling the specific gravity thereof by introducing fluid into and removing fluid from the said chamber means in response to the external pressure on said cable section to maintain a predetermined buoyancy for the cable sections within a surrounding fluid.

3,375,325
INTERCARRIER TELEVISION RECEIVER AFC CIRCUIT
Peter Johannes Hubertus Janssen, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 25, 1964, Ser. No. 391,856
10 Claims. (Cl. 178—5.8)

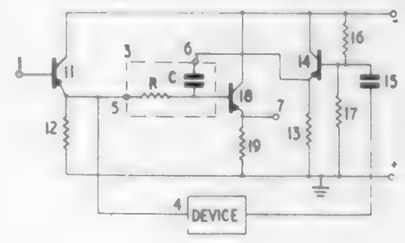
1. Means for producing a control voltage responsive to tuning in a superheterodyne signal receiver of the type adapted to receive a composite signal including a first signal modulated on a carrier wave and a second signal modulated on a subcarrier wave, said receiver comprising means for transposing the frequency of said composite signal to provide an intermediate frequency signal, first and second signal channels, means applying said intermediate frequency signal to said first and second

channels, said first channel comprising suppressing filter means tuned to the frequency of said subcarrier wave in said intermediate frequency signal, and first demodulating means for demodulating the output of said suppressing filter means, said second channel comprising second demodulating means for demodulating said inter-



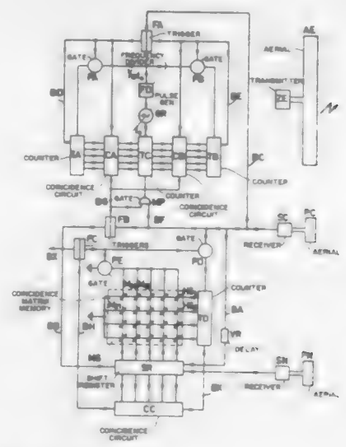
mediate frequency signal and band-pass filter means tuned to the demodulated frequency of said subcarrier wave, phase detector means, means for applying output signals from said first and second demodulator means to said phase detector means and means for deriving said control voltage from said phase detector means.

3,375,326
VIDEO D.C. INSERTION CIRCUIT
John Lewis Edwin Baldwin, Croydon, and Derek John Parkyn, Sanderstead, England, assignors to Rank-Bush Murphy Limited, London, England, a British company
Filed Aug. 20, 1964, Ser. No. 390,942
Claims priority, application Great Britain, Aug. 23, 1963, 33,421/63
10 Claims. (Cl. 178—7.1)



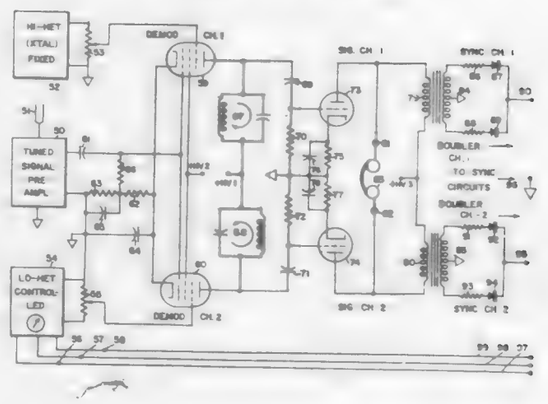
1. A video signal processor comprising the combination of: a first source of video signals having a predetermined frequency range including zero frequency and having a correct zero-frequency component; a second source of modified video signals having said predetermined frequency range and having a direct-current component which is not said correct component; a combining network having first and second input ports and an output port; a first signal path having a predetermined variation of response with signal frequency over said predetermined frequency range including finite response at zero signal frequency within said network from said first input port to said output port; a second signal path within said network from said second input port to said output port, said second path having a variation of response with signal frequency over said predetermined frequency range which is complementary to that of said first path including zero response at zero signal frequency; circuit means applying signals from said first source to said first input port; circuit means applying signals from said second source to said second input port; and circuit means for deriving said processed video signal from said output port.

3,375,327
PULSE CODE RECEIVER
Jacobus Marius den Hertog, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 1, 1964, Ser. No. 400,747
Claims priority, application Netherlands, Oct. 2, 1963, 298,734
9 Claims. (Cl. 178—69.5)



A receiver for pulse code signals where successive code groups have the same number of elements, in which means are provided to produce a train of pulses having repetition rates corresponding to a given portion of the duration of one code group, and means for scanning the elements of a following code group with the train of pulses. The system is adapted for the scanning of signals in which the duration of code groups has some variation, in order to facilitate the scanning of the elements of the code groups at their centers.

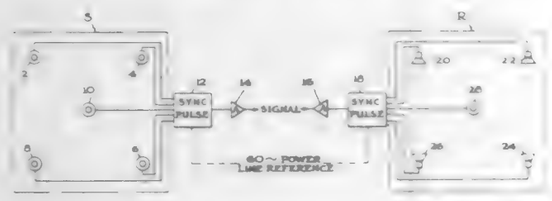
3,375,328
RECEIVER FOR PHASE SHIFT COMMUNICATION SYSTEM
Ellison S. Purington, Gloucester, and Emory Leon Chaffee, Belmont, Mass., assignors to Ralph G. Lucas, Nathaniel L. Leek, and The National Shawmut Bank, executors of last will of John H. Hammond, Jr., deceased
Filed July 5, 1960, Ser. No. 40,639
6 Claims. (Cl. 178—88)



1. In a receiver for a continuous wave signalling system wherein signalling is effected by phase shift of a continuous wave carrier, a pair of local oscillators operating

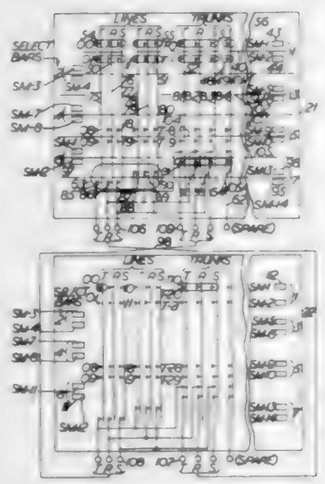
respectively above and below the frequency of the received carrier, means producing a beat note between each of said oscillators and said carrier, means deriving the second harmonic of each of said beat notes, means comparing said harmonics to derive therefrom an error signal corresponding to any variation in phase between said harmonics, and means responsive to said error signal to vary the phase of one of said oscillators in a sense to reduce the value of said error signal.

3,375,329
MONAXIAL QUADRAPHONIC RECORDING SYSTEM
Robert E. Prouty, Olney, Md., assignor of one-half to Francis E. Ryan, Arlington, Va.
Continuation of application Ser. No. 371,923, June 2, 1964. This application May 2, 1967, Ser. No. 635,626
1 Claim. (Cl. 179—15)



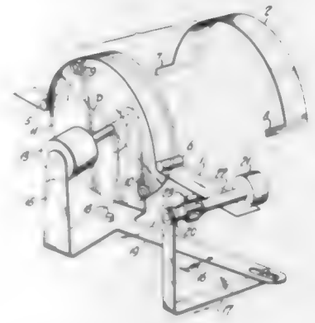
A method for recording and reproducing sound for creating a true environmental transposition of a given audio situation in which a quadrangular arrangement of microphones defining a plane is positioned in an overlying and surrounding relationship with respect to the audio sound stage from which a source of sound originates. The microphones are electronically sampled and the signal derived therefrom is transmitted to a receiver having a corresponding quadrangular arrangement of loudspeakers which define a plane overlying and surrounding an area removed from the sound stage. The audio output from the receiver is sampled in phase with the frequency that the microphones are sampled and is fed to the loudspeakers.

3,375,330
MULTISWITCH FOR INTERNALLY SELECTIVELY INTERCONNECTING VERTICAL MULTIPLES TO ACCOMPLISH PRIMARY AND SECONDARY CONNECTIONS
John Clarke Gibson, Oak Lawn, Ill., assignor to International Telephone and Telegraph Corporation
Filed Dec. 11, 1963, Ser. No. 329,835
4 Claims. (Cl. 179—22)



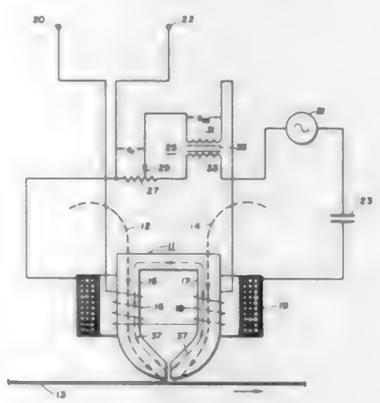
An automatic telephone exchange having a group of multiswitches with horizontal and vertical paths. Means are provided in the multiswitches for accomplishing a primary-to-secondary type connection using a single vertical multiple.

3,375,331
SYSTEM FOR RECORDING AND REPRODUCING A PERIODIC SIGNAL
Masatoshi Okazaki and Shiro Okamura, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 21, 1963, Ser. No. 317,478
7 Claims. (Cl. 179—100.2)



A video signal is recorded on magnetic tape in oblique tracks relative to the translation direction of the tape medium. It is reproduced by a sensing means whose tracking direction is variable relative to the recording medium and depends upon the velocity of the medium.

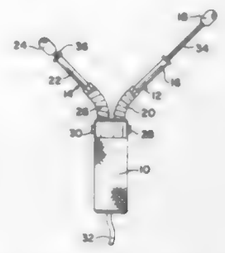
3,375,332
FLUX-RESPONSIVE REPRODUCING HEAD FOR MAGNETIC TAPE RECORDERS
William A. Geyder, 8510 Flower Ave., Apt. 2-B, Takoma Park, Md. 20045
Filed May 28, 1964, Ser. No. 371,147
8 Claims. (Cl. 179—100.2)



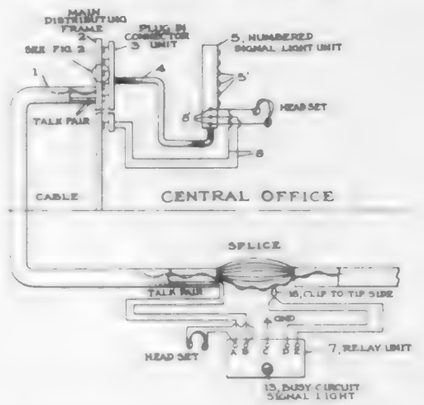
A magnetic tape playback head which performs as a flux-responsive reproducer device, having a saturable core reproducer head with flux detecting windings encircled by an air core coil which is energized by an A.C. voltage.

3,375,333
DUAL MICROPHONE
Leon H. Hagopian, 29 N. Highland Ave., Lansdowne, Pa. 19050
Filed Oct. 5, 1964, Ser. No. 401,417
2 Claims. (Cl. 179—148)

A dual support for adjustably mounting two microphones, one for use by one person and the other for use by another person, the microphones being connected to one transmitter.



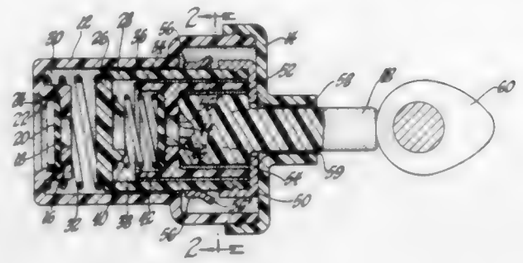
3,375,334
TESTING APPARATUS FOR IDENTIFYING WIRE PAIRS IN MULTICONDUCTOR CABLES
Robert D. Robinson, 132 Fairfield Ave., Syracuse, N.Y. 13207
Filed June 12, 1964, Ser. No. 374,761
5 Claims. (Cl. 179—175)



My invention concerns testing apparatus for identifying conductor pairs at a remote point of a multiconductor cable such as is commonly used in the communications field. The apparatus preferably comprises visual signal indicator means in the form of a plug-in numbered signal light indicator unit which can be quickly connected to a group of wire pairs of a multipair cable at the terminal frame at the usual central office of a telephone system or the like, and which is operable responsive to the making of contact by a clip or other appropriate connector of a battery or other suitable power circuit, with one conductor (preferably the tip side) of a wire pair at any remote point along the cable, thereby energizing one of the signal lights of the numbered indicator unit so that the wire pair may be identified by a corresponding identification number when communicated by a helper or observer at the central office to a worker or splicer at the remote station where the clip or connector is applied to the cable.

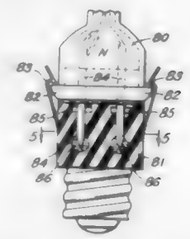
The plug-in signal light indicator unit also preferably includes means for establishing verbal communication over one wire pair of the cable between the central office station and the remote station along the cable where a special relay unit is operatively connected to the cable, said relay unit including a communication circuit connected to the "talk pair" of the cable, and also including a warning indicator, such as a red signal light, which is operable responsive to the relays of the relay unit to energize the warning signal light when the clip or connector is connected to a "busy" wire pair of the cable. Upon removal of the clip from contact with the "busy" wire pair, the relays function to restore the identification equipment for further immediate use in identifying other wire pairs of the cable, and the warning signal light is simultaneously de-energized when the clip is disconnected from the "busy" wire pair.

3,375,335
SAFETY CIRCUIT SWITCH WITH A PNEUMATIC TIME DELAY RETURN
Werner F. Schultz, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 22, 1965, Ser. No. 509,135
4 Claims. (Cl. 200—33)



An electric switch which includes a fluid time delay return so as to remain actuated by a periodic motion.

3,375,336
ELECTRICAL SWITCH AND RECEPTACLES USING CONDUCTIVE FLUIDS
Guy H. Tripp, 209 N. Columbian Road, Bay City, Mich. 48706
Filed Aug. 4, 1965, Ser. No. 489,775
4 Claims. (Cl. 200—152)

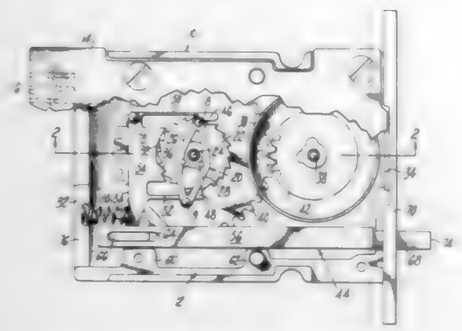


Switches and receptacles are disclosed for the make and break of electric circuits. The receptacle embodies a threaded male electrical socket for threaded connection with ordinary household type outlets to convert such outlets to a prong receiving receptacle. The male or prong elements (e.g., an electric plug), instead of making direct physical contact with the current carrying or hot receptacle elements, are connected thereto by an intermediary pocket of mercury. The switch comprises a sphere rotatably enclosed within an exterior spherical shell. Discrete pockets of mercury are distributed over the surface of the inner sphere and interconnected, in pairs, through the center of the sphere. The sphere may be rotated about any axis and selected connections may be made via the interconnected mercury pockets, when brought into physical contact with selected pairs of circuit leads imbedded in the outer spherical shell.

3,375,337
PUSHBUTTON ROTARY SWITCH HAVING UNITARY ACTUATOR
James P. Barrett, West Hartford, Edmund T. Slattery, Hartford, and John H. Norris, Haddam, Conn., assignors to Veeder Industries Inc., a corporation of Connecticut
Filed Jan. 5, 1966, Ser. No. 518,916
5 Claims. (Cl. 200—156)

Switch comprising a housing and a rotary brush supported therein, a printed circuit board supported on said housing in perpendicular relation to the rotational axis of the rotary brush, the rotary brush having contacts carried

thereon in contact with the printed circuit board, and a unitary actuator including a double drive pawl and ratchet wheel subassembly drivingly connected to the rotary

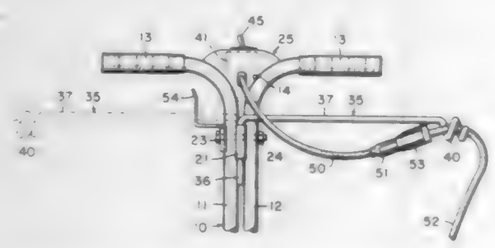


brush for selectively orienting the contacts relative to the printed circuit board to establish a desired electrical circuit connection.

3,375,338
EXTENSION CORD CONTROL ASSEMBLY FOR ELECTRIC MOWER

Glenn A. Delf, St. Louis, Mo., assignor to Atlas Tool & Manufacturing Company, a corporation of Missouri

Filed Dec. 17, 1965, Ser. No. 514,632
4 Claims. (Cl. 200—157)



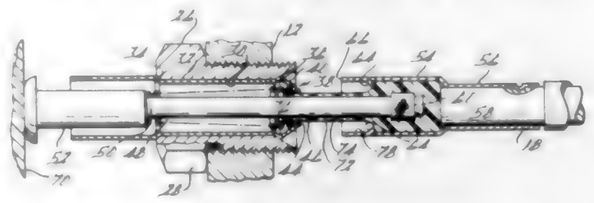
The cord control assembly includes a bracket secured to the lawn mower handle, the bracket including a plate portion and a socket portion. An L-shaped control arm, pivotally mounted in the socket portion, extends laterally from the handle. The control arm includes a loop through which an extension cord extends. The extension cord includes an electrical connector connected to the electrical connector of a power cable which is connected to the power means. The control arm loop engages the extension cord so that tension in the extension cord is transferred to the control arm. When the included angle between the extension cord and the control arm is an acute angle the control arm can flip from one side to the other of the handle. The cord assembly bracket secured to the handle by a single fastener which extends through the plate portion of the bracket and through the handles. A flange on the plate portion cooperates with the handle to preclude rotation of the bracket about the fastener.

3,375,339
PUSHBUTTON DOOR SWITCH

Ralph F. Schaber, Warren, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 501,022
1 Claim. (Cl. 200—159)

A switch for automatically turning on one or more lights when a door is opened, or for energizing a signal lamp or the like when a control pedal or lever is operated. The switch has a spring loaded plunger which is disposed for reciprocal movement in a tubular housing which housing provides a fixed contact surface. The movable contact element of the switch is carried by the plunger and the surface of the plunger is covered with a dielectric material so that the accumulation of dirt or moisture within the space between the plunger and movable con-

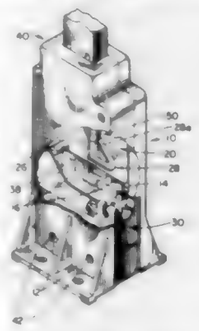


tact will not result in the establishment of a current path therebetween. Accordingly, electrolytic decomposition of the switch contact is averted.

3,375,340
MOMENTARY ACTUATING ARRANGEMENT

John O. Wright, Freeport, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Feb. 9, 1967, Ser. No. 614,930
5 Claims. (Cl. 200—160)

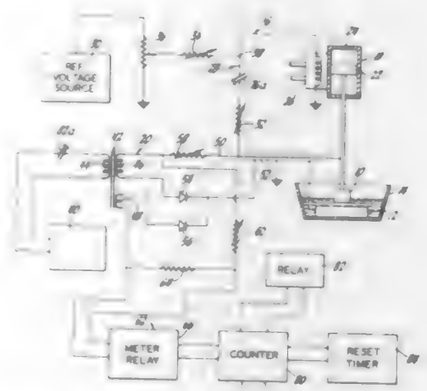


An arrangement to provide a momentary actuation of a control device wherein initial movement of an actuating means brings about actuation of the control device, further movement in the same direction brings about deactuation and deactuation is continued during return movement.

3,375,341
METHOD AND APPARATUS FOR ELECTRICAL STOCK REMOVAL

Robert S. Richards, Oak Park, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 24, 1964, Ser. No. 385,004
11 Claims. (Cl. 219—69)

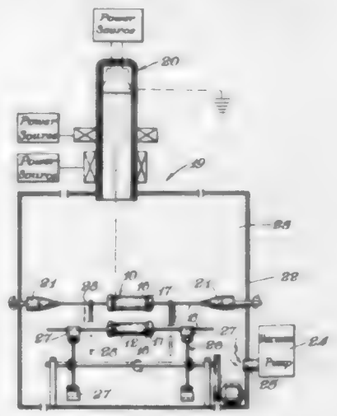


A power supply for electrical discharge machining apparatus incorporating a dual secondary transformer which applies a modified full-wave voltage across the machining gap. One secondary provides a low voltage across the gap between gap discharges to provide a burning current and is utilized by an arcing control to sense an arcing condition. The arcing control includes a meter relay, which responds to the arcing condition and causes the cutting tool and workpiece electrodes to be separated so as to clear the arcing condition. The arcing control also counts the number of separations of the electrodes within a certain time interval and, if excessive, causes the power to be turned off.

3,375,342
ELECTRON BEAM MILLING OF ELECTRICAL COATINGS

Preston Robinson, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Original application Mar. 4, 1963, Ser. No. 262,626. Divided and this application Sept. 21, 1964, Ser. No. 397,979
7 Claims. (Cl. 219—69)



2. A process for preparing an electric circuit member, comprising providing a ceramic support carrying a thin electrically conductive coating film, milling out a linear gap in the film at a speed of at least about 100 inches per minute, the milling being effected with a focused 15 to 20 kilovolt electron beam that leaves the milled gap with microscopically straight edges and at the same time glazes the surface of the ceramic exposed at the gap.

3,375,343
ELECTRON DISCHARGE DEVICE ASSEMBLY METHOD

Ernest T. Du Pre, Tell City, Ind., assignor to General Electric Company, a corporation of New York

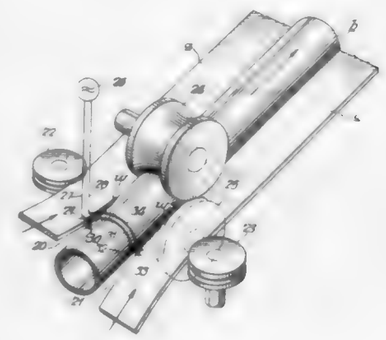
Filed Aug. 31, 1964, Ser. No. 393,304
4 Claims. (Cl. 219—96)

The invention provides a method of manufacturing electron discharge devices having an insulating stem that supports a plurality of stem leads which are of equal length and which are supported in parallel axial relation with respect to the device, and in which selected ones of the stem leads are to be connected at the inner ends thereof to an interconnecting plate of conducting material; the method of assembly being further characterized in that when the inner ends of the selected stem leads are maintained in alignment with the interconnecting plate, an electrical potential difference is applied between the interconnecting plate and the inner ends of the stem leads to effect forging engagement therebetween to produce a percussive weld.

3,375,344
WELDING ASSEMBLIES OF ELONGATED MEMBERS

Fred Kohler, New York, and Wallace C. Rudd, Larchmont, N.Y., assignors to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey

Filed May 7, 1964, Ser. No. 365,578
17 Claims. (Cl. 219—107)



Method and apparatus for simultaneously welding metal members together at two spaced weld points using high frequency electrical current and V-gaps between the members with each weld point at the apex of a V-gap and the current being supplied to the edges of both V-gaps in advance of the weld points from a single current source. The current is caused to flow from a first point on one edge of a V-gap in advance of one weld point to a second point on the edge of the other V-gap in advance of the other weld point, rather than directly from one weld point to the other, by the use of a proximity conductor carrying the welding current and extending between said first and second points in close proximity to, but not in electrical contact with, the member or members intermediate said first and second points.

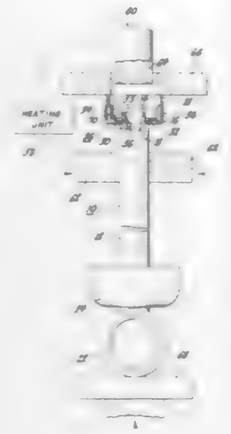
3,375,345
METHOD OF MANUFACTURING SHOCK ABSORBER SUBASSEMBLIES

Robert J. Schweller, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 15, 1964, Ser. No. 382,749
1 Claim. (Cl. 219—107)

In preferred form, a method for manufacturing a shock absorber subassembly including a piston and a piston rod having a flow-through control passageway including the steps of preforming the piston rod to have a small diameter tubular extension on one end thereof with a uniform O.D. and an I.D. flaring radially outwardly, preforming a piston to have an end wall with a central opening therethrough and including an inclined surface within the piston surrounding the opening, connecting the two preformed parts by steps including radially outwardly

deforming the walls of the small diameter extension into press-fit relationship with the inclined surface without welding the parts together and without encroaching upon the cross-sectional area of the flow passageway through the rod.



3,375,346
INFRARED SURFACE HEATING UNIT WITH TWO FILAMENTS

Richard S. Gaugler, James W. Jacobs, and Donald C. Siegla, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 22, 1965, Ser. No. 489,241
2 Claims. (Cl. 219—449)

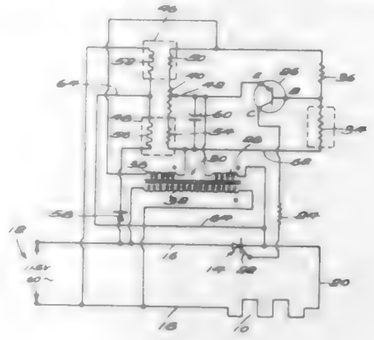
In preferred form an infrared surface heating unit including an upper non-opaque utensil supporting plate and a lower infrared reflector plate enveloping a first resistance element and an energization circuit for pulsatingly energizing the first resistance element into a visible light range observable through the utensil supporting plate, a second smaller wattage resistance element and a second energization circuit for continuously energizing the second resistance element to continuously illuminate the upper support plate.

3,375,347
HEATER CONTROL CIRCUIT

John Seymour Seney, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 10, 1965, Ser. No. 462,884
6 Claims. (Cl. 219—499)

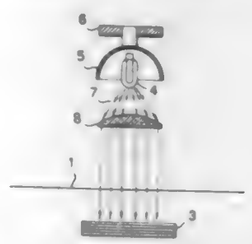
A heater control circuit in which a temperature sensing bridge with an auxiliary capacitor provides proportional control to the gate of a silicon controlled rectifier having its anode and cathode series connected with a heater to a source of alternating current.



3,375,348
RECORD IDENTIFICATION SYSTEM AND METHOD

Norbert Goldstern, Spoorlaan 30, Tilburg, Netherlands

Filed Feb. 8, 1963, Ser. No. 257,265
Claims priority, application Germany, Feb. 16, 1962, G 34,282
7 Claims. (Cl. 235—61.11)

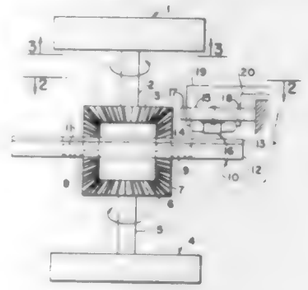


1. A record identification system employing a record medium having a plurality of mutually equal perforations therein in a visually comprehensible symbol, the record identification sorting system including an array of radiation sensitive devices, said radiation sensitive devices having differing electrical responses whereby record mediums having different symbols with the perforations disposed in different patterns therein produce different electrical responses when radiant energy is passed therethrough onto the array of radiation sensitive devices.

3,375,349
REVERSIBLE COUNTING DEVICES

Norman Yudewitz, Westport, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Sept. 3, 1964, Ser. No. 394,277
6 Claims. (Cl. 235—92)

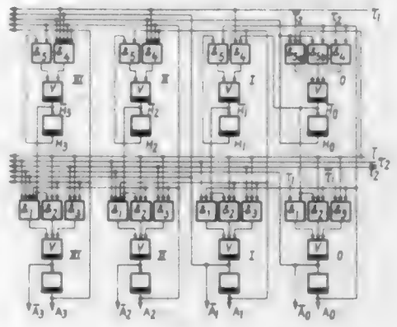


This invention relates to a simple and effective drive means for accomplishing bi-directional relative movement between a magnetizable disc and a read head to accomplish add-subtract functions.

3,375,350
STATIC COUNTER HAVING MAIN AND AUXILIARY STORES

Dieter Petzold, Berlin-Neukolln, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Mar. 16, 1965, Ser. No. 440,157
Claims priority, application Germany, Mar. 20, 1964, L 47,348
16 Claims. (Cl. 235—92)

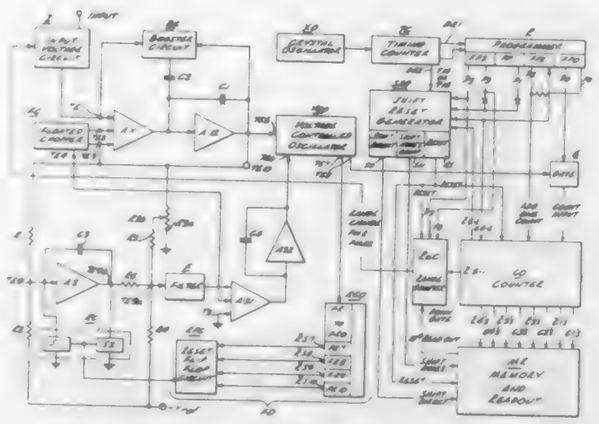


A static counter for counting forward or backward and controlled by timely staggered counting signals and auxiliary counting signals. The counter has a plurality of counter stages each incorporating a main store and an auxiliary store, the instants at which each main store is set and erased being fixed by the associated auxiliary store, with each auxiliary store being in one binary condition for setting the associated main store and in the opposite binary condition for erasing the associated store. The input of each main store is connected directly to its respective associated store and to all of the preceding main stores, and the input of each auxiliary store is connected to the respective associated main store, to all of the preceding main stores, except, in certain cases, the lowest-order store, and to the lowest-order auxiliary store.

3,375,351
DIGITAL VOLT METER

Joe E. Deavenport and Don W. Sexton, San Diego, Calif., assignors, by mesne assignments, to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware

Original application Apr. 3, 1963, Ser. No. 270,336, now Patent No. 3,327,228, dated June 20, 1967. Divided and this application Jan. 3, 1967, Ser. No. 619,107
3 Claims. (Cl. 235—92)



1. A digital system comprising:

voltage to frequency converter means having input circuit means and having output circuit means, and having a predetermined output frequency for zero input voltage, said converter means increasing in frequency for input voltage of one polarity and decreasing in frequency for input voltage of the opposite polarity;

a counter coupled to said output circuit means of said voltage to frequency converter means and having a maximum count setting in response to said predetermined output frequency;

a pair of switches coupled to and controlled by said counter;

storage circuit means;

transfer circuit means coupling said storage circuit means to said counter and having control circuits; and

control means coupled to and controlled by said switches and having output circuit means coupled to said control circuits.

3,375,352
BOWLING SCORER UTILIZING SEMICONDUCTOR ELEMENTS

Robert W. House, Rolland D. King, and Robert F. Roller, Columbus, Ohio, and David A. Williams, Largo, Fla., assignors, by mesne assignments, to Brunswick Corporation, Muskegon, Mich., a corporation of Delaware

Filed Apr. 9, 1963, Ser. No. 271,644
51 Claims. (Cl. 235—151)

35. An apparatus for scoring a bowling game having a multiplicity of scoring frames in which pinfall occurs from the rolling of at least one bowling ball, comprising: electronic means for receiving pinfall information, a computation means connectable to said electronic pinfall receiving means, an electronic storage means for storing scores earned by a player as a bowling game progresses connectable to said computation means, and electronic control means connected to said computation means for directing the computation of bowling scores.

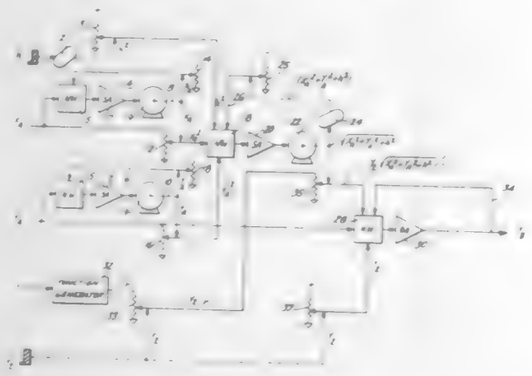
3,375,353
STEREOGRAPHIC RADAR SYSTEM

Arthur L. Rossoff, Huntington Station, and Howard E. Lustig, Flushing, N.Y., assignors to General Instrument Corporation, Newark, N.J., a corporation of New Jersey

Continuation of application Ser. No. 175,701, Feb. 26, 1962. This application July 24, 1967, Ser. No. 655,674
8 Claims. (Cl. 235—151)

1. In apparatus for producing a three-dimensional target representation from a single radiation detector which comprises means for deriving, from the real radiation signal emanating from said target and indicating the location of said target relative to said detector, a synthetic signal corresponding to the location of said target relative to a point spaced from said detector in a predetermined manner, the imaginary line of sight from said spaced point through said target intersecting a reference plane at the XY coordinates x_B and y_B respectively, said detector being at an $x=0$, $y=0$ position and an altitude of h above said reference plane, said spaced point being at an $x=0=x_A=x_B$, $y=y_2$ position and an altitude of h above said reference plane, r being the range of the target from said detector, and x_A and y_A being the coordinates of the intersection with said reference plane of the

line of sight from said detector to said target, and stereoscopically combining said real and synthetic signals; the improvement which comprises said means for deriving said synthetic signal comprising inputs for h, y_A, r and y_3, and further comprising means for generating a first electrical signal corresponding to h^2, a second electrical signal corresponding to y_A, a third electrical signal corresponding to y_A^2, a fourth electrical signal corresponding to y_2, and a fifth electrical signal corresponding to $-y_2/r$,



means for adding said first and third signals to produce a sixth signal, means for feeding said sixth signal to a feedback servosystem the output of which, defining a seventh signal, is squared before it is fed back, means for multiplying said fifth and seventh signals to produce an eighth signal, means for adding said second, fourth and eighth signals, and means for driving a feedback servo system from the output of said last mentioned means to produce an output corresponding to y_B, where y_B equals $y_2+y_A-(y_2/r)(y_A^2+h^2)^{1/2}$.

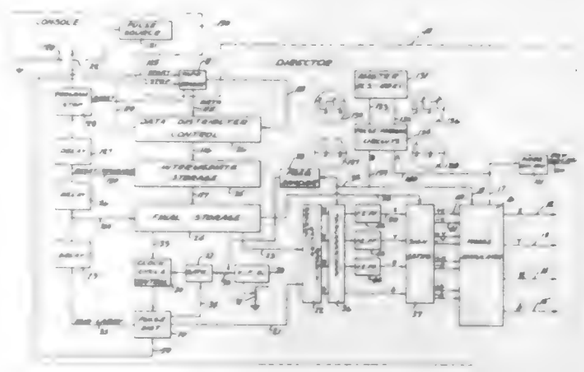
3,375,354
SIGNAL GENERATING CIRCUITS FOR MACHINE TOOL CONTROL SYSTEMS

Paul Harry McGarrell, South Euclid, Ohio, assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Original application Mar. 31, 1958, Ser. No. 725,414. Divided and this application Feb. 15, 1961, Ser. No. 89,567

22 Claims. (Cl. 235—151.11)

1. In a circuit for generating a phase modulated signal, a frequency divider having an input and an output, a high frequency pulse source, gate means for feeding pulses from said high frequency source to said input of said frequency divider, means for generating two series of control pulses with each pulse of each series occurring at a time between pulses from said high frequency source, means for adding the pulses of one of said series to the pulses from said pulse source to create a phase lead in the output of said frequency divider, and means responsive to each control pulse of the other series for closing said gate means for a time interval sufficient to prevent application of a fixed number of pulses from said pulse source to said frequency divider to create a certain phase lag in the output of said frequency divider.



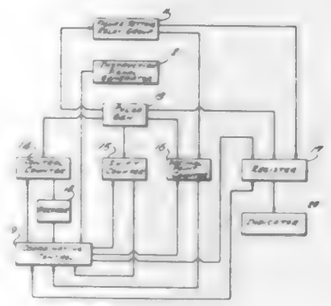
3,375,355
REGISTER FOR A CALCULATOR THAT UTILIZES "EXCESS 3" CODE

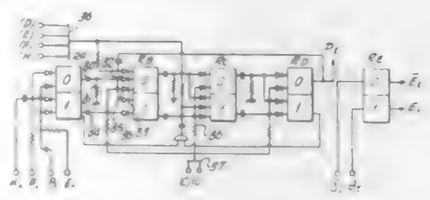
Atsushi Asada, Osaka, and Yoshihisa Uchida, Kobe, Japan, assignors to Hayakawa Denki Kogyo Kabushiki Kaisha, Osaka, Japan, a company of Japan

Filed Oct. 27, 1964, Ser. No. 406,863

Claims priority, application Japan, Nov. 1, 1963, 38/58,484, 38/58,485; Nov. 6, 1963, 38/59,358, 38/59,359, 38/59,360, 38/59,361; Nov. 16, 1963, 38/61,529

8 Claims. (Cl. 235—156)





1. A register for a computer comprising at least four flip-flops each having two sections interconnected one with the other so that when one section representing 0 in the binary code is conducting the other section representing 1 in said code is nonconducting and vice versa, first connections between said one section of each flip-flop and both sections of the next succeeding flip-flop, second connections each including control means between the other section of each flip-flop and both sections of the next flip-flop, means simultaneously controlling each of said control means to interrupt and complete the associated connections and means for applying input pulses simultaneously to both sections of the first of said series of flip-flops whereby each input pulse applied to the first of said flip-flops when said control means are operated to interrupt the associated circuits will cause said flip-flops to register the next successive decimal digit in terms of a four bit binary code with the first said flip-flop representing the least significant bit and wherein the application of a pulse to the first said flip-flop when said control means are operated to complete the associated circuits will cause said flip-flops to register the complement of the number registered by said flip-flops prior to the application of the last said pulse.

3,375,356
CALCULATOR DECIMAL POINT ALIGNMENT APPARATUS

Thomas J. Scuitto, Malibu, and Matthew A. Alexander, Santa Monica, Calif., assignors to Wyle Laboratories, El Segundo, Calif., a corporation of California

Filed June 12, 1964, Ser. No. 374,574

10 Claims. (Cl. 235—160)

1. In a calculator apparatus including a memory comprised of at least one register which includes a plurality of stages and a decimal point identifying means identifying one of said stages, the improvement comprising:

means for successively generating manifestations respectively representing different digits of the whole portion of a multidigit number to be stored in said one register and for temporarily storing said manifestations in arbitrarily chosen ones of said plurality of stages;

means for initiating an align operation; and

means responsive to said align operation being initiated for shifting all of said manifestations stored in said arbitrarily chosen stages until the manifestation representing the least significant digit in said whole portion of said number to be stored is stored in said stage identified by said decimal point identifying means.

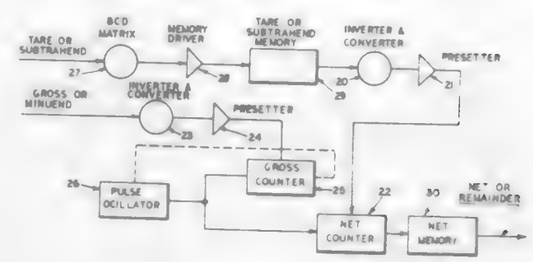
3,375,357
AUTOMATIC SUBTRACTING DEVICE

Launcelot Dekker, La Porte, Ind., and LeRoy J. Ryan, Jr., Chicago, Ill., assignors to Maatschappij van Berkel's Patent N.V., Leidschendam, Netherlands, a limited-liability company of the Netherlands

Filed Oct. 22, 1965, Ser. No. 500,728

20 Claims. (Cl. 235—174)

An electronic automatic subtracting device receiving subtrahend and minuend decimal figures and delivering at the output side the remainder in decimal figures including means for converting the figures to the BCD code and inverting same to the 9-complement, forcing net and gross counters to the count of the inverted figures, pulsing the counters once to convert the figures to the 10-complement,



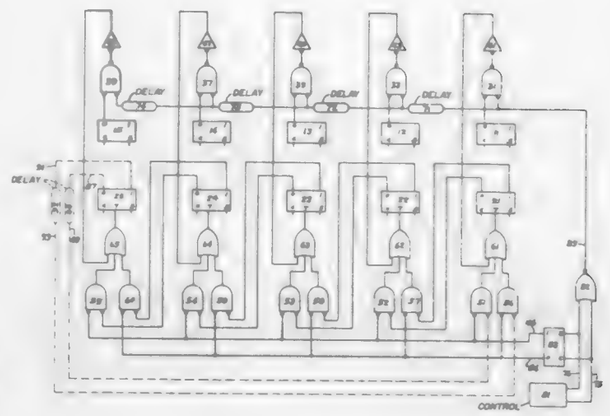
and pulsing the counters until the gross counter resets to zero, thereby leaving the difference in the net counter.

3,375,358
BINARY ARITHMETIC NETWORK

Abraham Franck, Minneapolis, Minn., assignor to Fabri-Tek Incorporated, Minneapolis, Minn., a corporation of Wisconsin

Filed Aug. 30, 1965, Ser. No. 483,765

7 Claims. (Cl. 235—175)



A binary adder-subtractor network having a first register comprising a plurality of bistable storage elements and adapted to hold the addend-subtrahend, and a second register also comprising a plurality of bistable elements and adapted to hold the augend-minuend. The bistable elements of the second register are logically connected to form an up-down counter, the direction of count being selective dependent upon whether addition or subtraction is desired. The second register also acts as the accumulator, thus holding the final results. Accumulation is achieved by adding or subtracting the appropriate addend or subtrahend bit at the corresponding bit significance of the accumulator-counter. Because of the counting action of the accumulator, the sum or difference is formed.

3,375,359
ANALOG MULTIPLIER

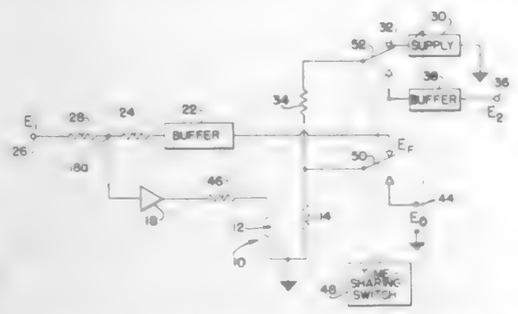
John L. Mason, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Aug. 24, 1964, Ser. No. 391,651

3 Claims. (Cl. 235—194)

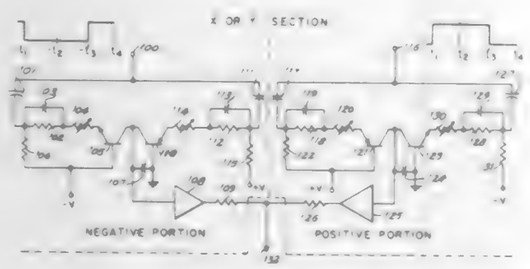
The present invention is directed to an electrical analog multiplier for producing an output signal equal to the product of two input signals; one of said signals being applied to a non-mechanical transducer whose output is applied to both a linearizing circuit and to a second signal path, whereby the second signal is applied to the second

signal path and the output of the transducer affects the second signal path in accordance with magnitude of the



first input signal, to thereby provide an output at the second signal path which is equal to the product of said first and second signals.

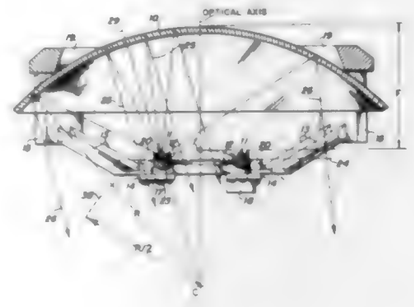
3,375,360
HIGH-SPEED WAVEFORM SYNTHESIZER
John Marez, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 29, 1964, Ser. No. 363,655
3 Claims. (Cl. 235—197)



A high-speed waveform synthesizer is disclosed which may be typically employed to accept a digital type of input signal and develop therefrom appropriate deflection signals for a cathode ray tube to cause it to stroke the electron beam in order to depict symbols or alpha-numeric characters on the face of a cathode ray tube. Accordingly, the synthesizer may typically comprise X and Y axis sections and each of the X and Y axis sections contain positive and negative waveform generating means. The circuit within each of the X and Y axis sections comprises a first switching means connected to receive a first digital input signal in square wave form and is connected to a fixed amplitude positive potential source. A fixed bias means is connected to also receive the same first digital input signal and is adapted to impress a bias upon the first switching means for permitting conduction only upon a positive excursion of the first digital input signal.

A comparable second switching means is connected to receive a second digital input signal in the form of a square wave representative of digital data and is connected to a fixed amplitude of negative potential. A second bias means is connected to receive the same second digital input signal and to impress a bias upon the second switching means for permitting its conduction only upon a negative excursion of the second digital input signal. First and second integrating means are connected to the outputs to the first and second switching means to develop respective ramp signals having maximum amplitudes commensurate with the fixed amplitude positive and negative potential sources which are connected to the first and second switching means respectively. A common output circuit is connected to receive the ramp signals developed by the respective integrating means and thereby develops a composite output signal appropriate for deflection of a typical cathode ray tube employ to depict symbolic or alpha numeric characters.

3,375,361
OPTICAL ILLUMINATION SYSTEM
Thomas L. Thompson, Ingleside, and Theodore J. Schulze, Hinsdale, Ill., assignors to Chicago Aerial Industries, Inc., Barrington, Ill., a corporation of Delaware
Filed Nov. 10, 1965, Ser. No. 507,179
6 Claims. (Cl. 240—1.3)



1. An optical illumination system for use with a source of electrical energy and a camera of focal length F_1, comprising

a concave principal reflector of focal length F,

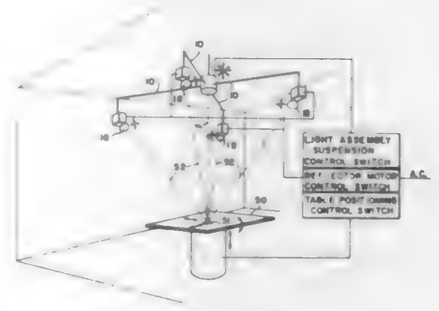
forward reflector means comprising

at least one cylindrical reflector element of length L positioned facing the principal reflector at a distance F from it, said reflector element being further located at a distance L/2 from the optical axis of said principal reflector and oriented to be perpendicular to the plane defined by said axis and the midpoint of said element,

support means for securing said forward reflector means to said principal reflector, and

a straight tubu'ar light source positioned within each cylindrical reflector element.

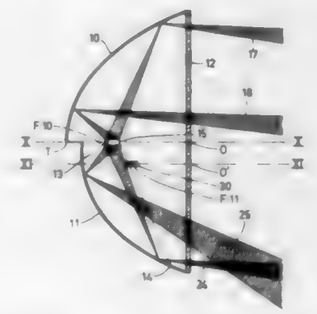
3,375,362
MEANS TO CONTROLLABLY DIRECT A PLURALITY OF SPOTLIGHTS
Hans U. Klippert, Hanau (Main), Germany, assignor to Quarzlampengesellschaft mbH, Hanau (Main), Germany
Filed Mar. 21, 1966, Ser. No. 536,079
Claims priority, application Germany, Mar. 24, 1965, Q 824
7 Claims. (Cl. 240—1.4)



A lighting system provided with a plurality of individual spotlights, each comprising a reflector: a light source; said light source situated within said reflector to

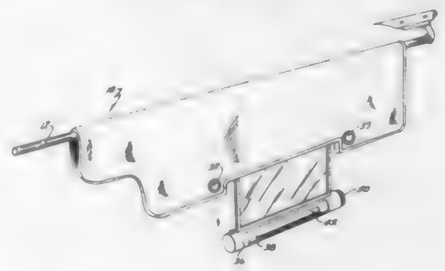
produce a beam of light; a first and second rotational means to cause rotations of said reflector about a reference axis thereof and about an intersecting axis, intersecting said reference axis, said first rotational means to rotate said reflector about said intersecting axis, said second rotational means to rotate said reflector about said reference axis.

3,375,363
VEHICLE HEADLIGHTS WITH PROFILED COVER GLASSES
Johannes Rijnders and Willem Elenbaas, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,417
Claims priority, application Netherlands, Oct. 14, 1964, 64—11,903
4 Claims. (Cl. 240—41.25)



A vehicle headlight with a reflector constituted of two concave mirrors connected together and two filaments coacting therewith. The cover glass is profiled to effect a different measure of transverse spreading of the light at the bottom thereof.

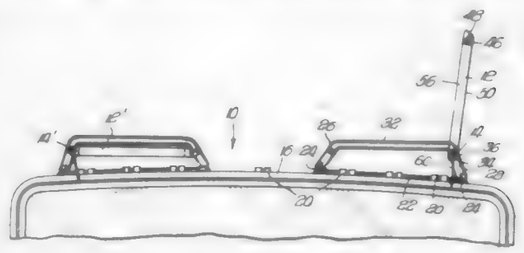
3,375,364
VISOR-MIRROR ASSEMBLY
Konrad H. Marcus, Holland, Mich., assignor to Donnelly Mirrors, Inc., Holland, Mich., a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 499,404
4 Claims. (Cl. 240—4.2)



A vehicle visor assembly with an interior compartment from which a mirror is controllably extensible, the mirror preferably being semi-transparent to serve as a glare filter, and preferably a combined handle and light on the lower mirror edge for shifting the mirror and illuminating the object, with a switch to operate the light, preferably automatically with mirror extension and retraction.

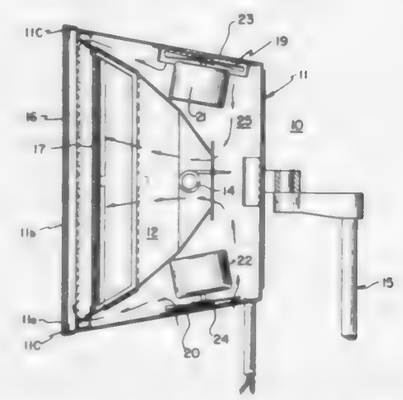
3,375,365
AUTOMOBILE LIGHT
Louis E. Gross, Chicago, Ill., assignor to Unity Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 12, 1965, Ser. No. 495,277
3 Claims. (Cl. 240—7.1)

An automobile light which is mounted to a luggage carrier rack unit adapted to mount to the roof of an automobile. The light includes an elongate bar normally



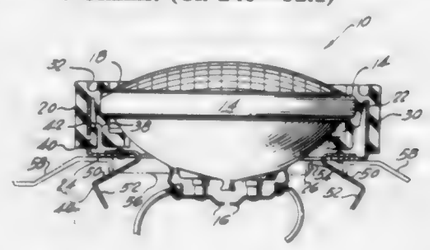
extending substantially horizontally and pivotable into a vertical position.

3,375,366
HIGH INTENSITY PRINTING LAMP
William N. Scheppe, Chicago, Ill., assignor to The Nuarc Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 28, 1965, Ser. No. 516,904
2 Claims. (Cl. 240—47)



An improved cooling arrangement is provided for a high intensity lamp such as used for printing, photocopying and the like. The cooling arrangement includes means for directing cooling air against the high intensity light source and further directing the cooling air against the translucent cover of the lamp. Additionally the translucent cover includes spaced plates and cooling air is directed between the spaced plates.

3,375,367
SNAP-IN HEADLIGHT ASSEMBLY
Charles A. Woodcock, Springfield, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Viriginia
Filed May 31, 1966, Ser. No. 554,019
4 Claims. (Cl. 240—52.1)

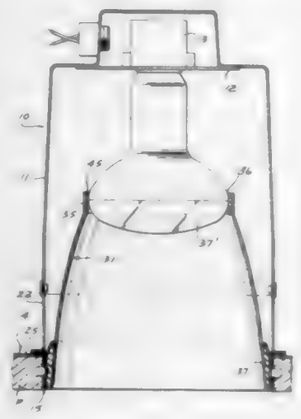


The following specification describes a snap-in headlamp assembly comprising a resilient mount which detachably receives both a headlamp and a frame member with the frame member carrying a pair of rearwardly and radially outwardly extending cantilever L-shaped arms for snap-in engagement with the tractor housing to retain both the mount and lamp on the tractor.

3,375,368
LIGHTING FIXTURE AND REFLECTOR THEREFOR

Stanley Dorsky, Somerset, Mass., assignor to Aluminum Processing Corp., Fall River, Mass., a corporation of Massachusetts

Filed Aug. 8, 1966, Ser. No. 570,965
7 Claims. (Cl. 240—78)

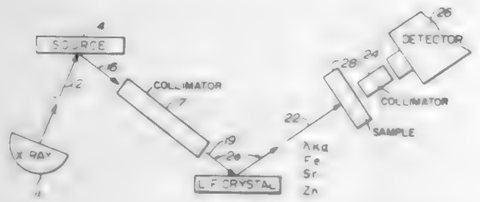


This invention relates to the art of lighting fixtures and more particularly to a bowl shaped reflector and method of forming the same, said reflector comprising a bowl-shaped structure having a mouth with a reversely bent rim extending outwardly therefrom, a band of deformable resilient material positioned between said rim and the body of said reflector, said rim having an indentation on the outer surface thereof.

3,375,369
MATRIX CORRECTED X-RAY FLUOROMETRIC ANALYSIS METHOD

Marvin Goldman and Ruth P. Anderson, Davis, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed July 13, 1965, Ser. No. 471,777
10 Claims. (Cl. 250—51.5)

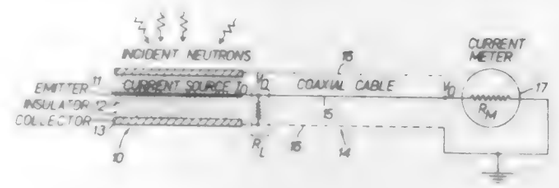


X-ray fluorometric analysis of elemental materials present in a matrix of unknown composition as incorporated with low Z binders into a specimen form of predetermined size and weight. Monochromatic X-rays characteristic of the element to be determined and of known intensity I_0, are passed through the specimen form and the intensity, I, of the emergent X-rays is determined, wherefrom the ratio of $I/I_0=T$, the transmittance factor of the specimen is determined. Subsequent irradiation with polychromatic X-rays is then employed to ascertain the net characteristic monochromatic fluorescent X-ray output, S, of the unknown amount of said element in the specimen. The amount of said element is then determined using the newly discovered linear relationship between transmittance and sensitivity factors, e.g., by using calibration plots of said factors obtained from known composition specimens or by the use of corresponding simple linear equations.

3,375,370
SELF-POWERED NEUTRON DETECTOR

John W. Hilborn, Chalk River, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada

Continuation-in-part of application Ser. No. 298,284, July 29, 1963. This application Dec. 28, 1965, Ser. No. 528,674
7 Claims. (Cl. 250—83.1)

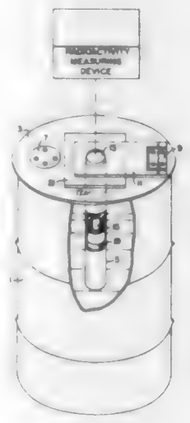


A self-powered neutron detector particularly suitable for flux measurements within the core of nuclear reactors and consisting of a non-fissionable emitter separated from a conducting collector by a solid dielectric insulator which can retain its high electrical resistivity when continuously exposed to intense radiation, the emitter and collector being connected to a load resistance for measurement of the current through the load resistance, the current being indicative of the intensity of the neutron flux.

3,375,371
METHOD OF AND APPARATUS FOR DETERMINATION OF NUCLEAR POISON

Karl H. Puechl, Pitcairn, Pa., assignor to Nuclear Materials and Equipment Corporation, Apollo, Pa., a corporation of Pennsylvania

Filed May 18, 1964, Ser. No. 368,315
4 Claims. (Cl. 250—83.3)

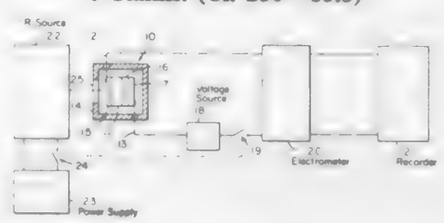


1. The method of non-destructive determination of the quantity of nuclear poison in a specimen, the poison in said specimen reacting with neutron fluxes in accordance with their energies, absorbing substantially completely neutron fluxes within a first energy range, passing substantially freely neutron fluxes within a second energy range, and partly abosrbing neutron fluxes in a third energy range, the said method comprising the steps of disposing said specimen between a source of neutrons including flux of said third energy range and a detector material which becomes radioactive when activated by neutrons and measuring the magnitude of radioactivity induced in said material by the resulting neutron flux in said third energy range emitted by said specimen.

3,375,372
PHOTO-STIMULATED RADIATION DOSIMETRY

Kazuo Miyashita, State College, Pa., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 28, 1966, Ser. No. 538,917
4 Claims. (Cl. 250—83.3)

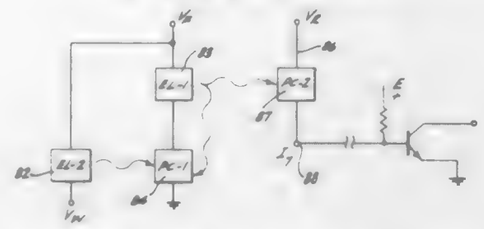


1. A method for measuring ionizing radiation dosage, comprising:
(a) applying an electric field and infrared light to a radiation sensitive crystal having a wide band gap, deep carrier traps and high charge carrier mobility;
(b) exposing said crystal to ionizing radiation in the absence of said electric field and said infrared light;
(c) applying an electric field and infrared light to said crystal; and
(d) measuring the amplitude of the resulting current transient.

3,375,373
SOLID STATE BISTABLE CIRCUIT

Donald H. A. Hageman, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Aug. 25, 1964, Ser. No. 391,957
6 Claims. (Cl. 250—209)



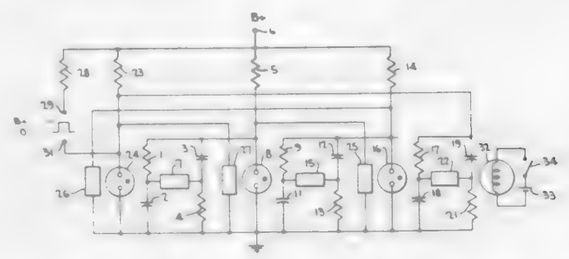
3. A bistable switch comprising: a bistable branch having an electroluminescent portion and a photoconductive portion each electrically and optically coupled to one another, said bistable branch having an input terminal and being adapted to have a first electrical signal of a predetermined magnitude applied thereacross from said input terminal; a write branch including an electroluminescent portion which is optically coupled to said photoconductive portion of said bistable branch, said write branch having an input terminal and being adapted to receive a second electrical signal applied thereto from an input terminal end, the other terminal end thereof being connected to the input terminal of said bistable branch whereby said electroluminescent portions of said write branch and said bistable branch are turned on by the application of the second electrical signal and said electroluminescent portion of said bistable branch is held on by the subsequent application of the first electrical signal; and means coupled to interrogate the state of said bistable branch.

3,375,374
PHOTO-ELECTRIC RING OSCILLATOR CIRCUIT WITH VOLTAGE DOUBLER

Wesley O. Niccolls, 7015 Centreville Road, Manassas, Va. 22110

Filed Sept. 24, 1965, Ser. No. 490,141
3 Claims. (Cl. 250—209)

A photo-electric oscillator comprising a number of identical stages connected in a ring, the output of each stage being connected to the input of the next stage. Each stage includes a resistance-capacitance-charging circuit, a light source and a photo-electric switch. The photo-electric switch is connected in the charging circuit in such a manner that, when the switch is caused to assume its low resistance state by light radiation from the light source in the preceding stage, the charging circuit becomes a voltage doubler. When this occurs, the voltage across the charging circuit exceeds the firing voltage of the light

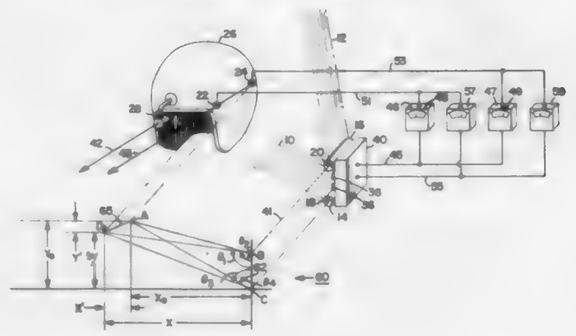


source connected to the charging circuit. The light radiated by the light source triggers the next succeeding stage in the oscillator, and the charging circuit discharges to the extinguishing voltage of the light source. An alternate embodiment includes another photo-electric switch placed across each light source and responsive to the light source in the next succeeding stage. When this photo-electric switch is actuated, it hastens the discharge of the light source to which it is connected making possible higher frequency operation.

3,375,375
ORIENTATION SENSING MEANS COMPRISING PHOTODETECTORS AND PROJECTED FANS OF LIGHT

Robert Abbey and David S. Lane, Minneapolis, Minn., assignors to Honeywell Inc., a corporation of Delaware

Filed Jan. 8, 1965, Ser. No. 424,252
7 Claims. (Cl. 250—216)



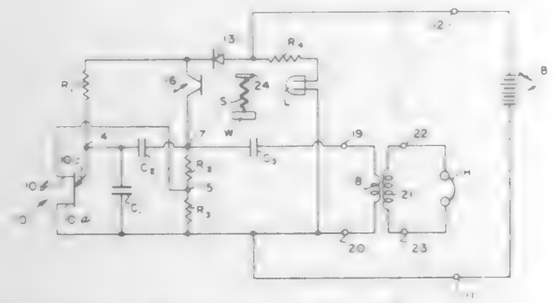
6. Apparatus to determine the direction of a man's line of sight relative to a vehicle in which he is moving comprising in combination:
first light detecting means;
second light detecting means;
means mounting said first and second detecting means on a man's head so that they move therewith;
means rotating a first planar fan of light about a first axis which is fixed to the vehicle;
means rotating a second planar fan of light about a second axis fixed to the vehicle, said second axis being substantially parallel to said first axis;
reference means;
means mounting said reference means to said vehicle;
means measuring the time of incidence of said first and second fans of light on said detecting means relative to the time when said first and second fans of light

are in a predetermined position relative to the vehicle as indicated by said reference means, said measuring means indicating the position of said first and second detecting means relative to the vehicle.

3,375,376
ANTI-INTRUDER DEVICE USING VIBRATION RESPONSIVE MEMBER BETWEEN LIGHT AND PHOTOCELL

David W. Kermode, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 20, 1964, Ser. No. 346,357
3 Claims. (Cl. 250—231)

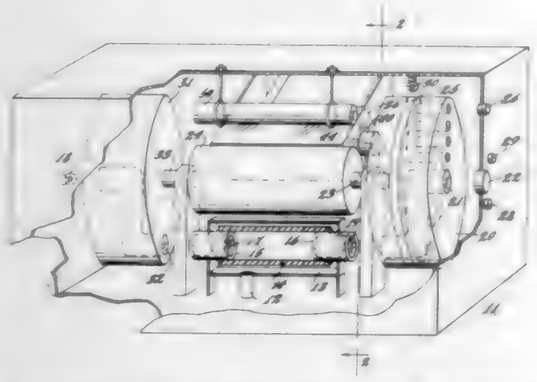


2. In a motion detection system, means including:
a unijunction transistor oscillator circuit for supplying an oscillating electrical output signal;
a continuous light emitting light source for producing a beam of light;
a light responsive device including an electrical current conducting variable resistance means disposed within the path of said beam so that the light beam may be caused to impinge thereon;
means adapted to vary the quantity of light of said beam impinging on said device in response to externally induced system vibrations; and
an electrical circuit including a voltage divider network and capacitance coupling means connecting said light responsive device with the oscillator circuit at the emitter electrode and one base electrode of the unijunction transistor for varying both amplitude and frequency of the oscillator output signal in response to induced system vibration.

3,375,377
RADIATION SENSITIVE MULTICHANNEL PRESSURE TRANSDUCER

Martin Ralph Barrows, N. Wales Road, North Wales, Pa. 19454

Filed Sept. 21, 1964, Ser. No. 397,874
2 Claims. (Cl. 250—231)

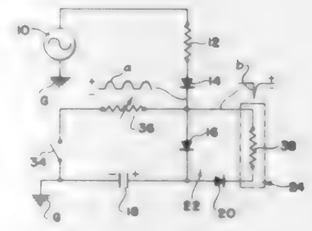


The pressure in a pressure chamber serves to expand or contract an elastomeric tube, which acts as a shutter regulating the amount of light passing from a uniform light source toward the photoelectric cell. A plurality of such elastomeric tube type of valves are parallel longitudinally around a cylindrical frame. A pair of scanning heads rotate to obtain a series of signals from the photocell responsive to the pressures in the respective pressure chambers of the valves. Optical rods of polymethacrylate control the direction of light from its source, through the elastomeric tube, and to the photocell.

3,375,378
PULSE FORMING CIRCUIT

James J. Vandemore, Geneseo, and Marvin E. Hines, East Moline, Ill., assignors, by mesne assignments, to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed June 1, 1964, Ser. No. 371,263
14 Claims. (Cl. 307—107)

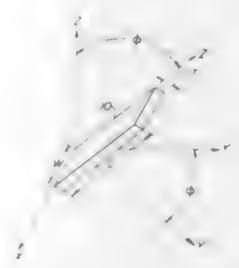


A circuit for developing a single output pulse from an energy source, such as a battery, or an alternating current voltage source for application to an output circuit, such as a resistor or a pulse transformer, and including energy storage means, such as a capacitor. This circuit means further includes passive element steering circuit means, such as two electrode, unidirectional current passing diodes, for steering energy from the source to the capacitor, with the diodes being so arranged to bypass the output circuit. A capacitor discharge circuit is provided which includes at least a portion of the output circuit. A switching means is provided in a discharge circuit for purposes of closing the discharge circuit so that a single voltage pulse is obtained across the output circuit.

3,375,379
ROTATED Y-CUT RECTANGULAR PIEZOELECTRIC QUARTZ CRYSTAL PLATES

James J. Royer, Allentown, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 402,488, Oct. 8, 1964. This application Apr. 16, 1965, Ser. No. 448,601
18 Claims. (Cl. 310—9.5)

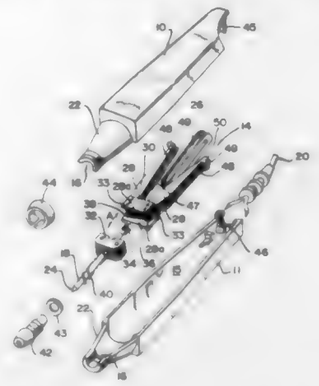


The specification describes rectangular DT-cut quartz crystals which are designed with optimum width-to-length and width-to-thickness ratios to minimize unwanted resonances.

3,375,380
RECIPROCATING MOTOR CORE STRUCTURE

Dhu Aine J. Davis, Wheaton, Ill., assignor to Hermetic Coil Co., Inc., a corporation of Connecticut

Filed Feb. 10, 1967, Ser. No. 615,102
3 Claims. (Cl. 310—29)

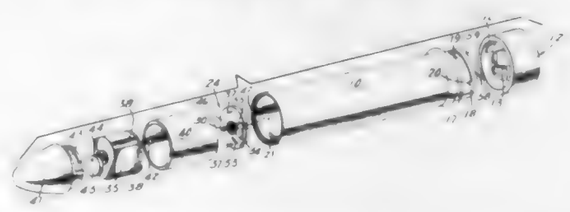


This invention relates generally to an electric vibratory tool and particularly to improvements in electrically operated etching tools.

3,375,381
CORDLESS ELECTRIC VIBRATOR FOR USE ON THE HUMAN BODY

Jon H. Tavel, Encino, Calif., assignor to Vibrex Corporation, Woodland Hills, Calif., a corporation of California

Filed June 30, 1966, Ser. No. 561,867
5 Claims. (Cl. 310—81)

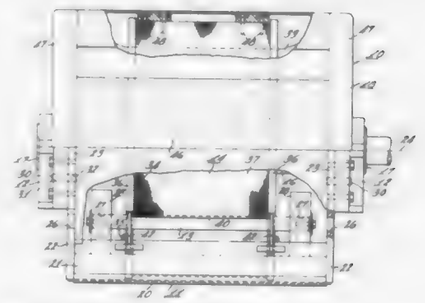


1. In a cordless electric vibrator for use on the human body having an elongated substantially cylindrical battery housing, at least one dry cell battery mounted within said housing and vibratory means operatively connected to said battery, an end cap removably and rotatably mounted on one end of said housing, said end cap acting to hold said battery within said housing and also acting as a switch to control the operation of said vibrator, said cap having a base and a circular side wall, at least one inwardly directed projection carried by the inside of said side wall, at least one L-shaped slot having an open vertical portion connected to a closed horizontal portion, said slot extending along the outer periphery of the end of said housing on which said end cap is mounted, said projection being slidably movable into the open vertical portion of said slot and along the horizontal portion thereof to removably mount said end cap on said housing, an elongated contact strip extending along the inside of said housing, said contact strip having one end thereof disposed adjacent to the end of said housing on which said end cap is mounted, a contact arm fixedly secured on the inside of the base of said end cap and rotatable therewith, said contact arm having at least one free end disposed adjacent to the circular side wall of said cap, said end of said contact strip and said contact arm being completely separate and independent from said projection and L-shaped slot, said contact arm being electrically connected to one of the contacts of said battery, said end cap being rotatable with respect to said housing to move said projection reciprocally along the horizontal portion of said slot and to simultaneously move said contact arm into and out of electrical contact with said end of said contact strip, the positioning of said projection with respect to the closed end of the horizontal portion of said L-shaped slot being so related to and coordinated with the positioning of said contact arm with respect to the end of said contact strip that when said projection engages the closed end of the horizontal portion of said L-shaped slot, said contact arm simultaneously engages the end of said contact strip, so that said end cap is in "on" position and cannot be rotated past said "on" position.

3,375,382
DYNAMOELECTRIC MACHINE

Richard H. Barber, Greendale, and Joseph T. McKean, New Berlin, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Jan. 13, 1965, Ser. No. 425,261
6 Claims. (Cl. 310—90)

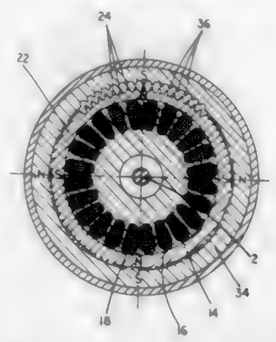


1. A motor comprising a base,
a pair of support members on said base,
a bearing bracket mounted on each end of said base, said bearing bracket being aligned and accurately positioned relative to said support members,
bearings in said bearing brackets,
a shaft rotatably mounted in said bearings and a motor rotor mounted on said shaft,
a motor stator having an annular core with windings positioned therein, the outer surface of said core having a pair of spaced apart grooves formed therein for fitting said support members to mount said stator on said base and automatically align said stator relative to said rotor to form a uniform air gap therebetween.

3,375,383
MAGNETIC DRIVE DEVICE

Kenneth W. Philbrick, Dayton, Ohio, assignor, by mesne assignments, to TRW Inc., Cleveland, Ohio, a corporation of Ohio

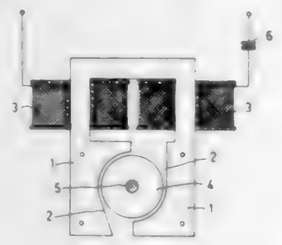
Filed Feb. 2, 1965, Ser. No. 429,872
6 Claims. (Cl. 310—103)



A magnetic drive device including a central core member of magnetic material which has slots in its outer surface and windings disposed therein. A magnetic yoke ring

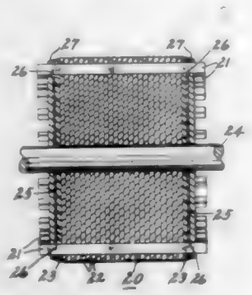
is placed on the outside of the core member and has a series of serrations on its exterior surface. The core is placed within a housing member which has a serrated ring of magnetic material on its inner surface, with the serrations of the ring and housing opposed to one another. The number of serrations on the yoke ring and housing are disimilar, so that when a rotating electromagnetic field is created in the yoke ring, the resulting flux will cause relative motion between the ring and the housing.

3,375,384
SYNCHRONOUS MOTOR HAVING PERMANENT MAGNETIC ROTORS
Richard Thees, Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 9, 1963, Ser. No. 315,009
Claims priority, application Germany, Oct. 18, 1962, N 22,229
13 Claims. (Cl. 310—156)



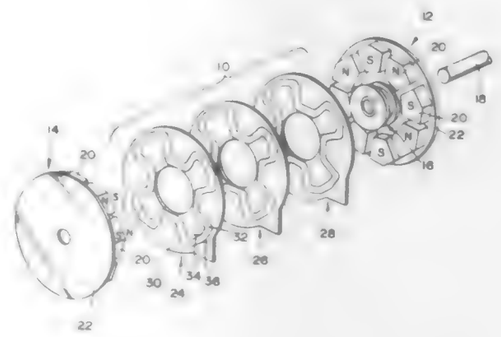
1. A synchronous motor comprising a stator composed of magnetic material, at least one stator winding mounted thereon, a permanent magnet rotor having at least one pair of poles and moutned to rotate within said stator, a pair of input terminals for supplying alternating current energy to said stator winding, said stator winding having an effective ratio of reactance X to resistance R between the values zero and five and greater than the value 4 minus $6.5\ E/U$, wherein X is the effective reactance and R is the effective resistance looking into the stator winding from said input terminals, E is the electromotive force induced in said stator winding and U is the A.C. terminal voltage at said input terminals, and wherein the ratio E/U lies between the values zero and 1.2.

3,375,385
ROTOR MEANS CONNECTION
Elmer L. Young, Englewood, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,368
7 Claims. (Cl. 310—261)



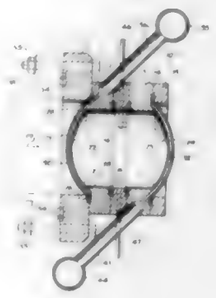
1. A dynamoelectric machine rotor means, comprising, an axially extending shaft portion, plural rotor laminations of magnetic material carried on said shaft portion and having substantially longitudinally extending passages located radially inwardly from outer periphery of said laminations, rotor conductor means carried in said passages of said laminations, and regions of solder that effectively join at least pairs of said laminations at both ends in locations axially separated by remaining laminations, said regions of solder also having short circuit contact for at least said pairs of laminations collectively at each end directly to said rotor conductor means.

3,375,386
PRINTED CIRCUIT MOTOR
Paul F. Hayner, Lexington, Mass., and Gerald L. Bernier, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,843
10 Claims. (Cl. 310—268)



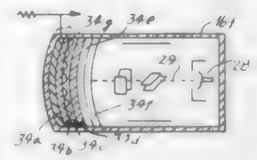
This invention pertains to a brushless alternating-current motor with a rotating field and having printed circuit disks for a stationary armature. The apparatus disclosed is a motor that is driven by a variable frequency source to control the speed thereof. The magnetic field is developed axially by permanent magnets of opposite polarity that are mounted for rotation together on an axis and spaced apart in the direction of the axis to provide a gap of substantially constant magnetic flux. The printed circuit armature is axially disposed within the gap.

3,375,387
FLUID COOLED MULTI-FOIL RADIATION BEAM WINDOW FOR HIGH POWER BEAM TUBES
James E. Leiss, Gaithersburg, Samuel Penner, Potomac, and John L. Pararas, Rockville, Md., assignors to the United States of America as represented by the Secretary of Commerce
Filed Jan. 24, 1967, Ser. No. 611,478
5 Claims. (Cl. 313—44)



A four metal foil window with water forced between the first and second and between the third and fourth foils, and helium maintained under pressure between the second and third foils.

3,375,388
VACUUM TUBES PROVIDED WITH LIGHT CONDUCTING MEMBERS AND WITH A SCREEN OF A HIGH PHOTOELECTRIC SENSITIVITY
Edward Emanuel Sheldon, 30 E. 40th St., New York, N.Y. 10016
Continuation-in-part of application Ser. No. 158,638, Dec. 4, 1961, now Patent No. 3,279,460, dated Oct. 18, 1966. This application Aug. 6, 1964, Ser. No. 387,961
17 Claims. (Cl. 313—65)



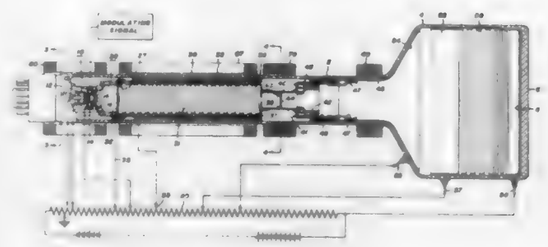
This invention relates to novel vacuum tubes provided with members conducting light by internal reflection in said members and provided also with a novel photoemissive screen, comprising a plurality of alkali metals different from each other.

In addition in some vacuum tubes the light conducting members have the construction in which the external surface of their sidewalls is made very smooth in order to prevent the escape of light from one of said members to another member. These vacuum tubes exhibit a much greater sensitivity than devices of the prior art and are capable of a higher resolution of images.

3,375,389
ADJUSTABLE CONVERGENCE MAGNETS
Richard H. Hughes, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 15, 1965, Ser. No. 439,599
8 Claims. (Cl. 313—77)

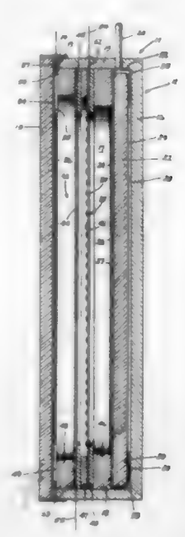
2. In combination,
a cathode ray tube having a neck enclosing the paths of a trio of individual cathode ray beams, said trio of beam paths being symmetrically disposed about the longitudinal axis of said tube neck;
and means for producing a plurality of magnetic fields intersecting said paths, the orientation of the magnetic field intersecting at least one of said paths differing from the orientation of the magnetic fields intersecting the remainder of said paths so as to shift the position of one of said beams in a direction different from the direction of beam shift of the remainder of said beams, said plurality of fields being conjointly adjustable in magnitude and in sense;
said field producing means including a magnet ring having a magnetization pattern comprising a trio of north poles equally spaced about the ring periphery and a corresponding trio of south poles in respective equally spaced positions about said periphery symmetrically intervening between adjacent ones of said north poles, said ring being mounted on said cathode ray tube neck so as to encircle said beam paths.

3,375,390
ELECTRON OPTICAL SYSTEM HAVING SPIRAL COLLIMATING ELECTRODE ADJACENT THE TARGET
Kurt Schlesinger, Fayetteville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,160
8 Claims. (Cl. 313—83)



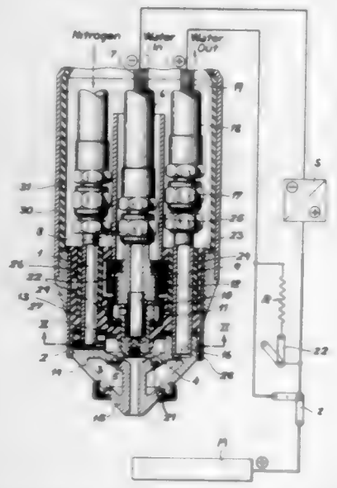
An electron optical system arranged in coaxial relation along a reference axis comprising an electron beam source, a target spaced from said source, and a nonlinear spiral collimating electrode of increasing electrical resistance per unit axial length adjacent said target.

3,375,391
THIN IMAGE TUBE ASSEMBLY
Cyril L. Day, Huntington, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed July 22, 1965, Ser. No. 474,066
3 Claims. (Cl. 313—95)



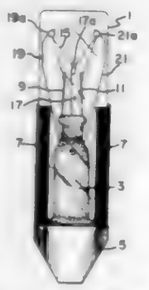
A thin image tube assembly and mounting includes a display screen at one end of a cylindrical envelope and a faceplate having a photoconductive screen at the other end. Annular insulating spacers positioned along the inner surface of the tube abut and support two intermediate mesh screens. The spacer adjacent the photoconductive screen is flush with the edge of the envelope and a metal ring forms a seal between the faceplate, envelope and spacer to retain the elements in position. Close spacing between the two ends permits proximity focusing of an image onto the display screen.

3,375,392
PLASMA GENERATOR UTILIZING A RIBBON-SHAPED STREAM OF GAS
Wojciech Brzozowski, ul. Kniers 23/31 m. 72, and Janusz Reda, pl. Henkla 6 m. 19, both of Warsaw, Poland
Continuation of application Ser. No. 437,745, Mar. 8, 1965. This application Apr. 26, 1967, Ser. No. 634,005
Claims priority, application Poland, Mar. 7, 1964, P 103,947
4 Claims. (Cl. 313—231)



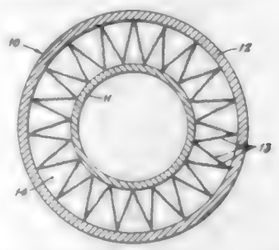
A plasma torch having a central electrode surrounded by an annular gas chamber with an axial outlet in line with the central electrode and a nozzle tangentially entering the chamber for admitting a gas tangentially into the latter. The nozzle has a narrow slot in a radial plane of the annular electrode so that the gas is discharged in a flat ribbon into the chamber.

3,375,393
INCANDESCENT LAMP
Robert G. Morgan, Ipswich, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 22, 1963, Ser. No. 317,921
2 Claims. (Cl. 313—269)



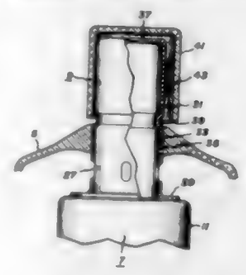
2. An incandescent electric lamp comprising: a substantially tubular glass envelope; a lamp stem disposed within and hermetically sealed in said envelope at one end thereof; a pair of lead-in wires sealed in said stem and extending therethrough; a lamp filament, the ends of which are secured to the inner ends of said lead-in wires, a plurality of filament support wires, one end of each of which being anchored in said stem, the other end of each of which being looped about said lamp filament intermediate the ends thereof, and each of said filament support wires frictionally engaging the inner wall of said envelope intermediate the ends thereof; and a base-contact assembly secured to said envelope at the stem end thereof said assembly comprising a wedge-like member of insulating material and a pair of metal clips supported in said wedge-like member of insulating material, the outer ends of said lead-in wires being connected to said metal clips.

3,375,394
MULTIFILAMENT LIGHT
Philip C. Demarest, Pine Brook, and Karl Karlson, Wallington, N.J., assignors to Ohmega Laboratories, Pine Brook, N.J., a corporation of New Jersey.
Filed May 6, 1966, Ser. No. 548,192
4 Claims. (Cl. 313—316)



1. A light having first and second spaced conductive walls; two end walls joining the spaced walls, one of said end walls at each end of said spaced walls, respectively; and a plurality of groups of filaments, stretching from one of said walls to the other and being joined at each of said walls.

3,375,395
ELECTRON DISCHARGE DEVICE
Cletus E. Maier, Cannelton, Ind., assignor to General Electric Company, a corporation of New York
Filed Apr. 12, 1965, Ser. No. 447,422
10 Claims. (Cl. 313—318)



This invention proposes an electric discharge device which comprises an envelope, a cathode assembly supported in one end of the envelope, and an anode assembly supported in the other end of the envelope. The anode assembly includes a tubular top cap of relatively thin conductive material which extends through and is sealed in one end wall of the envelope. The top cap has an external contact portion with a distortion blocking circumferential groove located adjacent the envelope wall. Preferably the groove is of semicircular cross-sectional shape, with a depth to material thickness ratio of approximately 2 to 1 and a width to depth ratio of approximately 3 to 1.

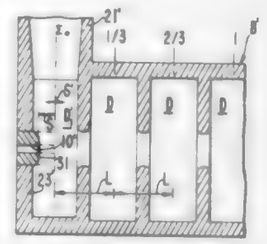
3,375,396
ACCELERATION METHOD AND APPARATUS
Jacob Haimson, Palo Alto, and Craig S. Nunan, Los Altos Hills, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Oct. 29, 1965, Ser. No. 505,630
4 Claims. (Cl. 315—3.5)

1. A traveling wave linear accelerator comprising, in combination: a disc loaded waveguide including a plurality of cavity resonators arranged for passage of a particle beam from an input end of said waveguide therethrough to an output end for interaction with and acceleration by a traveling radio frequency electromagnetic wave propagating therethrough, each of said cavity resonators defined by a hollow cylindrical wall and apertured input and output discs closing the opposite ends of said wall, the apertures in said discs centered substantially axially of said waveguide for passing the particle beam

through each of said cavity resonators in said waveguide and coupling electromagnetic energy between cavity resonators for propagating said traveling radio frequency electromagnetic wave along said waveguide, substantially every cavity beyond the first cavity resonator at the input end of said waveguide proportioned so that the distance L from the cavity transverse mid-plane to the transverse mid-plane of an adjacent cavity resonator is determined by the formula:

$$L=\frac{\beta_w\lambda}{N}$$

where β_w is v_p/c, λ is the free space wavelength of the traveling electromagnetic wave, N is the number of said discs axially of said waveguide per wave length λ, v_p is the phase velocity of the traveling electromagnetic wave along such waveguide and c is the velocity of light; means



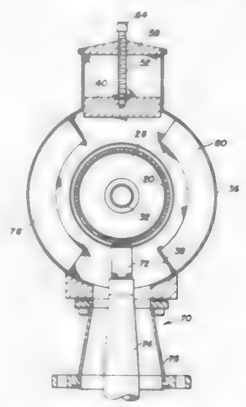
for coupling a radio frequency electromagnetic wave into said first cavity resonator for setting up substantial electromagnetic fields in said first cavity resonator and establishing a traveling radio frequency electromagnetic wave propagating along said waveguide; and means for directing the particle beam into said first cavity resonator for passage along said waveguide, said first cavity resonator constructed such that the distance s from the location at which the particles of said particle beam are first subjected to said fields within said first cavity resonator to the nearest plane which is spaced the distance L from the transverse mid-plane of the second cavity resonator of said waveguide is determined by the formula:

$$0\leq s<\frac{\beta_w\lambda}{2N}$$

3,375,397
EXTENDED INTERACTION KLYSTRON HAVING INDUCTIVE COUPLING MEANS COMMUNICATING BETWEEN ADJACENT CAVITY RESONATORS
William Jared Leidigh, Belmont, and Donald H. Preist, Mill Valley, Calif., assignors, by mesne assignments, to Varian Associates, a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,900
10 Claims. (Cl. 315—5.46)

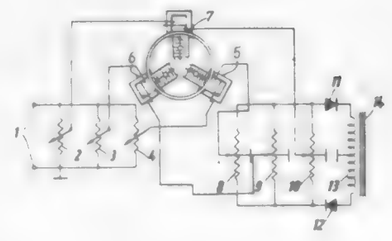
A high power microwave linear beam amplifier tube is disclosed. The tube includes an input circuit coupled to the electron beam and excited with a microwave signal to be amplified. The microwave signal velocity modulates the beam and the modulated beam passes into an extended interaction output circuit which is excited by the bunched beam to produce an amplified output signal. A depressed collector structure collects and dissipates the energy of the beam after passage through the output circuit.

The extended interaction output circuit comprises a plurality of cavity resonators successively arranged along the beam. Each cavity resonator includes an interaction gap for interaction with the electron beam passable therethrough. Inductive coupling means communicate between adjacent cavity resonators to form a composite inductively coupled output cavity resonator structure. In a preferred embodiment, the inductive coupling means, communicating between adjacent cavity resonators, comprises elongated coupling slots communicating through a common wall structure between adjacent resonators with the coupling slots being disposed near the periphery of the coupled cavities. In one embodiment of the present in-



vention, an extended interaction composite cavity resonator is disposed between the input circuit and the output circuit to serve as a buncher cavity for amplifying signal energy on the beam. The spacing between the successive interaction gaps of the composite buncher cavity is preferably greater than the spacing between successive interaction gaps of the output circuit.

3,375,398
MULTI-BEAM CONVERGENCE SYSTEM
Rolf Ohlhorst, Hildesheim, Germany, assignor to Blaupunkt-Werke, GmbH, Hildesheim, Germany
Filed Sept. 9, 1964, Ser. No. 395,232
Claims priority, application Germany, Sept. 18, 1963, B 73,551
20 Claims. (Cl. 315—13)

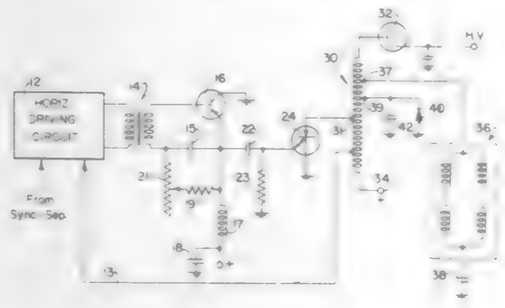


An apparatus for allowing separate, independent convergence adjustments for each edge of the picture frame of a color television receiver. A second correction current derived from the respective deflection circuits is superimposed on the first parabolic correction current in each of the correction magnet coils, such that the second current affects the first current only during one-half of the frame or line deflection, and is zero during the other half of the frame or line deflection.

3,375,399
TELEVISION SWEEP CIRCUIT USING GATE CONTROLLED SWITCHES
Lowell S. Kongable, Prospect Heights, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 19, 1964, Ser. No. 368,479
6 Claims. (Cl. 315—27)

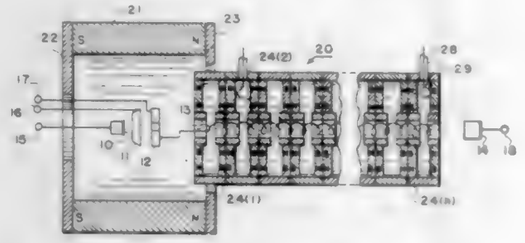
A sweep signal generator for a cathode ray beam includes a bistable switch device for conducting current

into a deflection yoke so a sawtooth deflection signal is developed therein. The switching device is triggered into



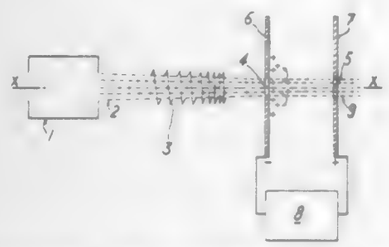
conduction and triggered out of conduction by signals synchronized with the television synchronizing signals.

3,375,400
RADIAL MAGNET BEAM FOCUSING SYSTEM
Dale A. Schrumpf, Mountain View, Calif., assignor to General Electric Company, a corporation of New York
Filed Nov. 2, 1964, Ser. No. 408,085
5 Claims. (Cl. 315—3.5)



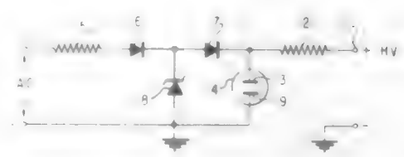
A magnetic system for a traveling wave tube comprising a series of abutting cells of alternating magnetic polarity wherein each cell includes a pair of annular magnets of opposite magnetic polarity.

3,375,401
SOURCE OF NEGATIVELY CHARGED PARTICLES HAVING POSITIVELY CHARGED PARTICLE RETAINING MEANS
Terenzio Consoli, La Celle-Saint-Cloud, and Richard Geller, Antony, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Sept. 30, 1965, Ser. No. 491,700
Claims priority, application France, Oct. 14, 1964, 991,422
2 Claims. (Cl. 315—111)



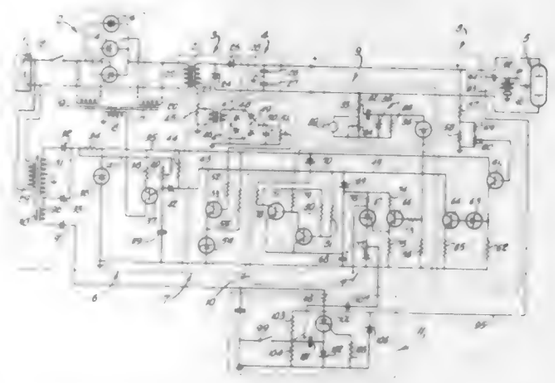
An accelerated jet of positively and negatively charged particles is passed through a coil generating a magnetic field parallel to the long axis of the jet and having its intensity increasing in the direction of flow to diverge positively charged particles. The jet then passes through spaced parallel plates having openings in the cross-section of the jet with the upstream plate negatively charged and the downstream plate positively charged so that the upstream plate captures positively charged particles.

3,375,402
NEON LAMP WARNING CIRCUIT
Alan F. Houghton, Dunedin, Fla., assignor to General Electric Company, a corporation of New York
Filed Apr. 16, 1965, Ser. No. 448,798
4 Claims. (Cl. 315—176)



A neon lamp indicates energization of a high D.C. voltage source. A separate power supply, including an alternating current source and a zener diode, supplies a pulsating voltage to the neon lamp of a value above that needed to sustain ionization but slightly below that needed to initiate ionization so that when the high D.C. voltage is energized, the addition of a small pre-ionizing voltage developed from the high D.C. voltage source ionizes the lamp. In alternate embodiments, either positive or negative senses of the high D.C. voltage source can be indicated.

3,375,403
ELECTRICAL SYSTEM FOR DISCHARGE DEVICE
Robert A. Flieder, Fords, N.J., assignor to Berkey Photo, Inc., New York, N.Y.
Filed Oct. 4, 1965, Ser. No. 492,628
10 Claims. (Cl. 315—240)

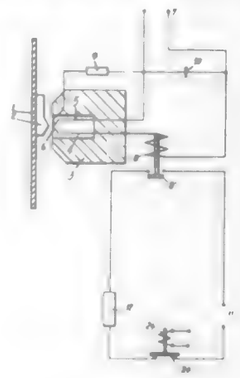


An electrical system including a gas discharge tube and a capacitor supplying the tube. Circuitry is included for charging the main capacitor at a linear rate. A control bus is provided mantained at a predetermined potential, means monitoring the charging current and voltage of the capacitor, control voltage dropping means for the main bus as does a holdover circuit preventing charging of the capacitor above a predetermined rate until time has passed for the deionization of the discharge tube.

3,375,404
CONTROL CIRCUIT FOR MACHINE TOOL HAVING CAM OPERATED ELECTRONIC SWITCH MEANS
Ivo Martinides, Neuhausen am Rheinfall, Switzerland, assignor to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland
Filed Jan. 12, 1965, Ser. No. 425,007
Claims priority, application Switzerland, Jan. 22, 1964, 694/64
3 Claims. (Cl. 315—360)

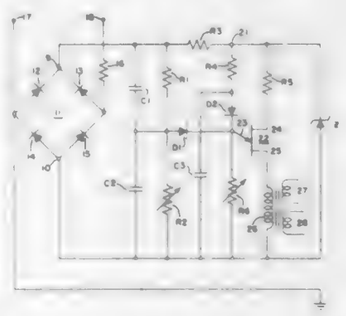
Control circuit for machine tool in which an electronic switch adapted for operation by the proximity thereto of a cam is provided with the cam adjustably mounted on

one element of a machine tool and the switch mounted on another element of the machine tool with the elements



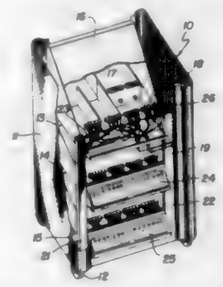
of the machine tool being relatively movable so that the cam passes close by the electronic switch.

3,375,405
CIRCUIT FOR REMOVING VOLTAGE SURGES FROM POWER LINES
Christopher Chiffee Fallon and Richard C. Weischedel, Oklahoma City, Okla., assignors to General Electric Company, a corporation of New York
Filed July 20, 1965, Ser. No. 473,379
4 Claims. (Cl. 317—16)



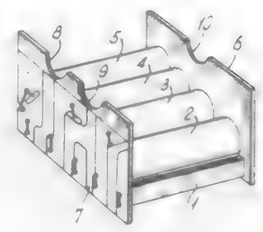
A circuit is disclosed for removing voltage surges by momentarily shunting them from the line. The shunt path for the voltage surges includes a resistor having a negative characteristic of current versus resistance, this resistor being connected in series with a pair of gate controlled rectifiers connected reversely in parallel. A firing circuit for the gate controlled rectifiers includes a uni-junction transistor through which triggering energy is connected to the gate controlled rectifiers.

3,375,406
ELECTRICAL HARNESS
Milton Alden, Needham, Mass., assignor to Alden Research Foundation, Westboro, Mass., a corporation of Massachusetts
Filed Jan. 7, 1966, Ser. No. 519,221
9 Claims. (Cl. 317—99)



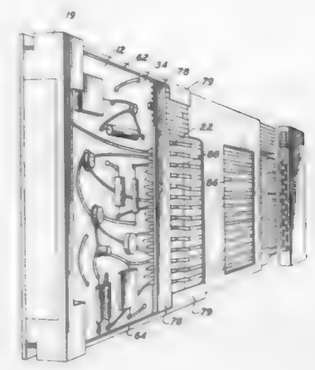
This invention relates to an electrical harness and, more particularly, to apparatus for carrying, segregating, and identifying wiring in a multi-level electrical cabinet.

3,375,407
ELECTRONIC MOUNTING UNIT HAVING SPACED PLATE ELEMENTS SUPPORTED IN POSITION
Gerd Rosenstand, Copenhagen, Denmark, assignor to Danavox International A/S, Copenhagen, Denmark
Filed July 22, 1965, Ser. No. 474,046
Claims priority, application Denmark, Mar. 26, 1965, 1,577/65
7 Claims. (Cl. 317—101)



An electronic mounting unit comprises a pair of spaced parallel plate elements each having holes formed therethrough. A plurality of electronic components is positioned between the plate elements and each has electrical terminals extending therefrom through corresponding ones of the holes formed through the plate elements and affixed in electrical contact with the plate elements. A support and spacing component comprises a rigid housing of box-like configuration with electronic circuitry enclosed within the housing. The housing is positioned between the plate elements with a pair of spaced parallel planar sides thereof abutting the plate elements.

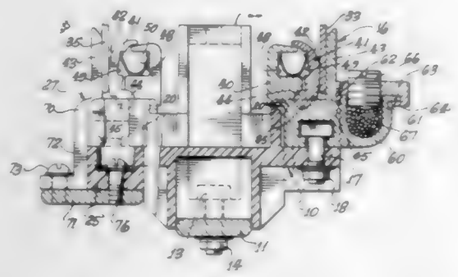
3,375,408
TEST FIXTURE FOR KEYED PRINTED CIRCUIT BOARD
Frederick G. Buhrendorf, Colts Neck, and Oskar Loosme, Lincroft, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 15, 1965, Ser. No. 507,784
5 Claims. (Cl. 317—101)



A rigid universal extender hold a printed-circuit card longitudinally outward from a mounting panel to expose the card's circuit for test. The cards have edges keyed with notches to receive protuberances extending only from their respective jacks on the panel. Printed-circuit wiring on the extender connects the jack to the card. Longitudinally-movable fingers separate from the wiring and pro-

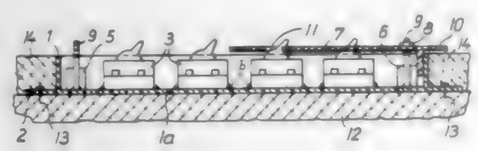
jecting beyond the printed wiring adjust themselves to the position of the notches on the card tested and thereby allow the extender to fit only into the panel jack belonging to that card.

3,375,409
MOUNTING TERMINAL WITH FIXED AND MOVING RIGID JAW MEMBERS
Rex E. Sturdivan, Whittier, Calif., assignor to Zinsco Electrical Products, Los Angeles, Calif., a corporation of California
Filed Aug. 9, 1965, Ser. No. 478,300
3 Claims. (Cl. 317—104)



A meter mounting terminal with extruded fixed and moving rigid jaw members and a spring for applying clamping pressure. An open top lug design permitting laying in of cable. A unitary construction omitting contact surfaces except at the meter stab and the cable.

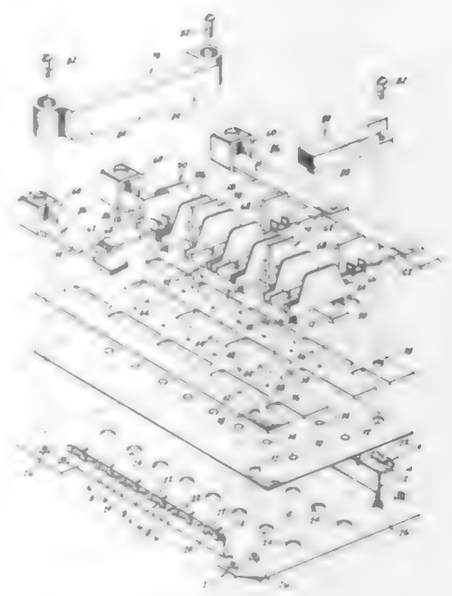
3,375,410
DISTRIBUTION PANEL FOR RELATIVELY THIN ELECTRICAL COMPONENTS
Erwin Schimmeister, Fischbeck uber Hameln, Germany, assignor to Allgemeine Elektricitats-Gesellschaft, Berlin, Germany
Filed Feb. 15, 1967, Ser. No. 616,218
5 Claims. (Cl. 317—119)



A distribution panel which is as thin as a layer of plaster is provided for mounting circuit breakers, bell transformers, and the like on a wall without the necessity of recessing the distribution panel into the wall. The cover plate for the distribution panel has removal portions which serve as apertures for the handles of switches contained therewithin.

3,375,411
ELECTRICAL CIRCUIT CONTROL DEVICE PANEL BOARD WITH NOVEL INSULATING MEANS
Joseph J. Mrowka, Plainville, Conn., assignor to General Electric Company, a corporation of New York
Filed July 3, 1967, Ser. No. 650,671
11 Claims. (Cl. 317—119)

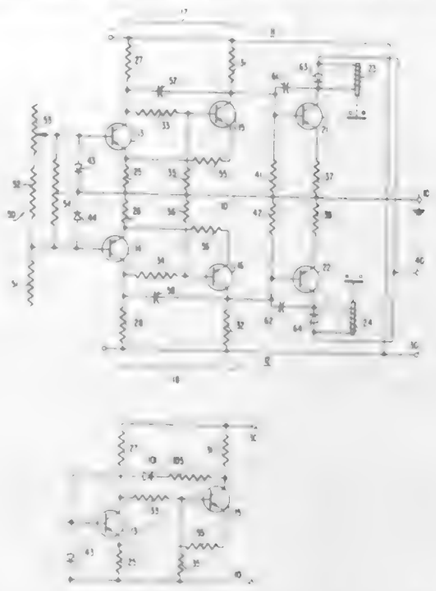
There is disclosed an electrical circuit control device panel board wherein the base or saddle has a generally planar portion upon which are disposed a first layer of insulating material, a second layer of insulating material and a plurality of conductors extending in substantially parallel spaced relationship. The second layer of insulating material has a plurality of apertures therein underlying each of the conductors and spaced along the length thereof with the apertures being dimensioned and disposed with respect to the conductors so that they extend beyond the side margins of a conductor toward the adjacent conductor. The webs between apertures underlying one of the conductors are offset along the length of the conductors from the webs between apertures underlying the adjacent conductors whereby the distance for travel along the upper surface of the second layer between adjacent conductors is increased substantially.



In the preferred embodiment, the layers of insulating material are provided by sheets which are punched or otherwise formed with the desired apertures or cutouts therein. An insulating member bridges one of the conductors and a contact arm having an end attached to another conductor extends normally to that conductor with its other end disposed on the insulating member. To provide sufficient insulated surface between the contact arm and the conductor underlying the insulating member, side wall portions are provided upon the insulating member. The insulating member desirably has upstanding ribs on the upper surface thereof providing a channel seating the contact arm and may be of sufficient width to provide a pair of channels seating a pair of contact arms with an upstanding center wall portion being disposed between the channels to provide an insulated barrier therebetween. To position the insulating member, desirably the second layer of insulating material has apertures formed therein to opposite sides of the conductor and the insulating member has cooperatively located feet thereon which seat in the apertures.

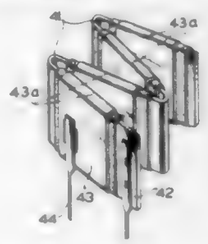
3,375,412
SWITCHING CIRCUITS
Richard J. Bridges, Baltimore, Md., assignor to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 417,923
16 Claims. (Cl. 317—148.5)

A bidirectional switching circuit comprising three cascaded transistors and including means for preventing relay chatter, the means including capacitors connected between the collector electrodes of successive transistors to reduce the A.C. gain of the system and to introduce a time constant which will prevent operation of the circuit at the ripple frequency of a rectified, unfiltered voltage input. In lieu of the capacitor connected between the collector electrodes, a resistor and a diode may be connected



in series between the collector electrode of the second transistor and the base electrode of the first transistor.

3,375,413
ELECTROLYTIC CAPACITOR COMPRISING FILM-FORMING METAL SHEET CARRYING A DIELECTRIC OXIDE FILM AND A METAL DIOXIDE ELECTROLYTE LAYER
Klaus Brill, Stuttgart, Germany, assignor to Robert Bosch GmbH., Stuttgart, Germany
Filed June 8, 1965, Ser. No. 462,248
Claims priority, application Germany, June 12, 1964, B 77,221
17 Claims. (Cl. 317—230)

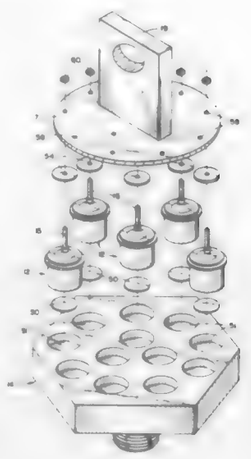


A dry electrolytic capacitor having an anode of film-forming metal including a dielectric oxide film thereon and a pyrolytically reducible oxide layer on the film is produced by heating said anode and dielectric film to a temperature within the range of 100–450° C., and spray depositing, on the thus heated dielectric film, a finely divided liquid solution of a metal salt pyrolytically decomposable, at the temperature of said heating, to a pyrolytically reducible oxide for in situ producing a homogeneous electrolyte-reducible oxide layer on said dielectric film.

3,375,414
CAPACITOR WITH SODIUM FORMATE ELECTROLYTE
Charles E. Welch, Jr., Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
No Drawing. Filed Oct. 8, 1965, Ser. No. 494,256
3 Claims. (Cl. 317—230)

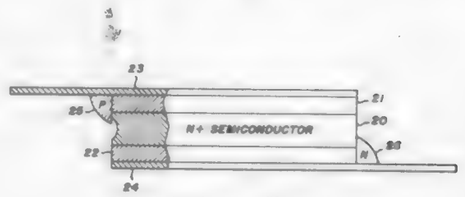
An electrolytic capacitor wherein the electrolyte is sodium formate dissolved in 5–70% by weight ethylene glycol monomethyl ester and 30–95% by weight a comparible electrolyte solvent.

3,375,415
HIGH CURRENT RECTIFIER
George B. Finn, Jr., Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 17, 1964, Ser. No. 383,429
5 Claims. (Cl. 317—234)



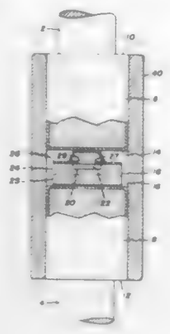
1. A semiconductor rectifier comprising a plurality of matched unit cells, said unit cells each having for electrical connections a cap and an extending wire terminal, a metal base with a plurality of recesses into which are soldered said caps of said unit cells, said metal base equipped with a mounting means to facilitate making electrical and thermal connection to said base, a metal connector with apertures respectively aligned with said recesses and into which are soldered said wire terminals, and a terminal means other than the said wire terminals of said unit cells attached to said connector for making electrical connection to said connector.

3,375,416
SEMICONDUCTOR TUNNEL DIODE DEVICE
Norbert Adams, Syracuse, Tapan Mukerjee, North Syracuse, and James M. Smith, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Original application Mar. 16, 1962, Ser. No. 180,164, now Patent No. 3,297,920, dated Jan. 10, 1967. Divided and this application Mar. 14, 1966, Ser. No. 555,659
3 Claims. (Cl. 317—234)



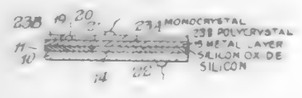
Semiconductor tunnel diode consisting of a pellet of first conductivity type semiconductor material sandwiched between two insulating members, with a body of opposite conductivity type inducing activator material supported by one insulating member and fused thereto and to a surface of the semiconductor pellet exposed between the insulating members to form a small area PN junction. Another body of first conductivity type inducing activator material is fused to the second insulating member and to the semiconductor pellet, and respective contacts are connected to the respective bodies of activator material.

3,375,417
SEMICONDUCTOR CONTACT DIODE
Clifford O. Hull, Jr., Baldwinsville, and Alexander M. Intrator, De Witt, N.Y., assignors to General Electric Company, a corporation of New York
Continuation of abandoned application Ser. No. 394,456, Sept. 4, 1964. This application Dec. 7, 1966, Ser. No. 599,985
7 Claims. (Cl. 317—234)



A semiconductor contact diode comprises a pair of spaced, opposed, metallic electrodes enclosed within a hermetically sealed, glass, cylindrical casing and separated by a silicon semiconductor pellet containing both P and N regions so as to form a P-N junction. The P region of the pellet abuts an epitaxially formed, monocrystalline contact button through an aperture in a passivating layer which overlies a first major face of the pallet at the P region. The contact button is in turn connected to one of the metallic electrodes through a solder coating. The N region is connected to the other of the metallic electrodes through a soldered coating overlying the second major face of the semiconductor pellet.

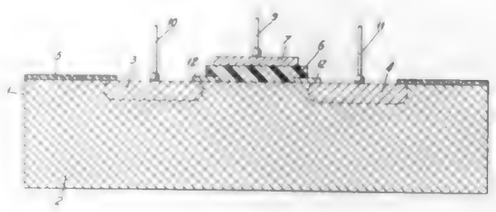
3,375,418
S-M-S DEVICE WITH PARTIAL SEMICONDUCTING LAYERS
Richard R. Garnache, Clarksburg, and Ferdinand Lincoln Vogel, Jr., Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Sept. 15, 1964, Ser. No. 396,694
6 Claims. (Cl. 317—235)



A device having a thin metallic layer between composite layers, each of which contains a non-crystalline semiconductive material and a non-conductive material or polycrystalline material.

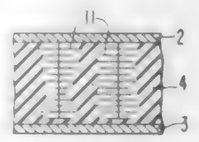
3,375,419
FIELD EFFECT TRANSISTOR WITH POLY-p-XYLYLENE INSULATED GATE STRUCTURE AND METHOD
Johann S. Wagener, Lakewood, Robert L. Shepard, Cleveland Heights, and Russell D. Westbrook, Fairview Park, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Feb. 25, 1965, Ser. No. 435,124
15 Claims. (Cl. 317—235)

1. A semiconductor device comprising a body of semiconductive material of one conductivity type and including a first source region and a second spaced-apart drain region thereon, said first and second regions being of a conductivity type opposite to that of the body of semiconductive material, a film of para-xylylene polymer disposed over at least a portion of the area between the spaced-



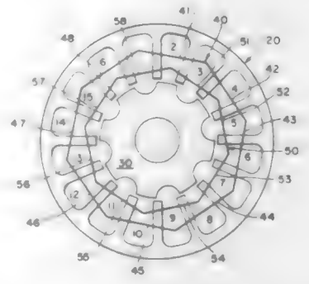
apart first and second regions, and a gate electrode overlying at least a portion of the para-xylylene polymer film and insulated from the semiconductor body.

3,375,420
RARE EARTH FLUORIDE CAPACITORS
Arden Sher and Raymond Solomon, Sunnyvale, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 8, 1966, Ser. No. 571,097
4 Claims. (Cl. 317—258)



An electric capacitor is disclosed employing a lanthanum series rare earth fluoride dielectric material. The dielectric material is preferably a trifluoride substance including a multitude of metallic dendrites extending in a direction from one of the electrodes of the capacitor toward the other one of the electrodes for increasing the capacitance of the capacitor. In a preferred embodiment, the dielectric is preferably made of a single crystal of hexagonal configuration oriented with its C-axis extending in a direction which is not perpendicular to both electrodes. A method for growing the dendrites in the single crystal dielectric material is disclosed wherein a static voltage in excess of 10 volts is applied across the electrodes of the capacitor for a time in excess of a few hours.

3,375,421
COMBINED TORQUER AND PICKOFF MEANS
Dan L. Ve Nard, Grand Rapids, Mich., assignor to Lear Siegler, Inc.
Filed Apr. 21, 1964, Ser. No. 361,506
13 Claims. (Cl. 318—18)



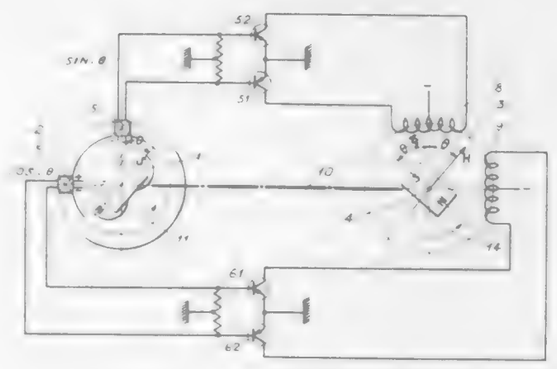
Basically, the subject invention provides a variable reluctance device for the simultaneous performance of both torquer and pickoff functions from the same set of wind-

ings. A rotor and a stator are provided upon each of which is formed a peripheral series of alternating teeth and slots, or spaces, between the teeth. A series of turns of a primary winding are wound, e.g., upon the stator within the slots and about the teeth thereupon to effect a series of magnetic poles. A series of turns of a secondary winding are also wound, e.g., upon the stator to effect a similar result.

An AC signal is supplied to the primary winding and, in turn, induces a signal in the secondary winding dependent upon the shape and intensity of the flux in the fields associated with the magnetic poles. The shape and intensity of this flux is, in turn, altered by movement of the rotor relative to the stator and hence such relative movement of the stator and rotor is reflected in the induced signal in the secondary winding.

The winding insertion scheme for winding the primary and the secondary within the slots includes a unique arrangement whereby center taps appear in the windings. These center taps are connected to either AC or DC sources for providing the torquing function. Further, the two portions of each of the center tap windings form adjacent arms within bridge networks, which may, if desired, be balanced to thereby isolate the sources of torquing voltage from the pickoff signals.

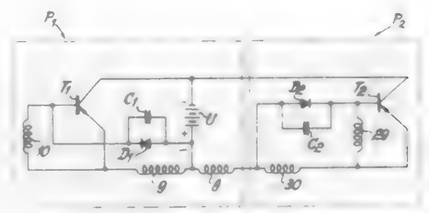
3,375,422
HALL EFFECT D.C. MOTOR
Alexandre Boudigues, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Dec. 22, 1964, Ser. No. 420,420
Claims priority, application France, Dec. 23, 1963, 958,145
5 Claims. (Cl. 318—138)



A D.C. motor with a constant torque comprising a first rotor and a first stator provided with two Hall probes perpendicular to each other for providing output voltages respectively proportional to the sine and the cosine of the angular position of the first rotor and a second rotor and a second stator provided with two windings perpendicular to each other. A constant angular shift is maintained between the first and the second rotor and the windings of the second stator are respectively fed with the voltages supplied by the Hall probes.

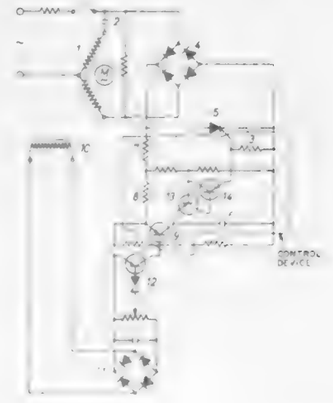
3,375,423
SYNCHRONOUS MOTOR, ESPECIALLY FOR ELECTRIC CLOCKS
Franz Mayer and Alfred Meisner, Nurnberg, Germany, assignors to Diehl, Nurnberg, Germany
Filed June 1, 1965, Ser. No. 460,022
Claims priority, application Germany, June 5, 1964, D 44,607
12 Claims. (Cl. 318—138)

Synchronous motor having a first driving coil to which the supply of driving pulses is under the control of the said motor and a second driving coil to which the supply



of driving pulses is under the control of an oscillatory member independent of said motor.

3,375,424
CONTROL CIRCUIT FOR INDUCTION MOTORS
Wolfgang Gerhard Ulrich Aye, Nurnberg, Max Joachim Balkow, Feucht, near Nurnberg, Hans Karl Hermann Hasse, Nurnberg, and Gunter Josef Rauter, Ruhstorf (Rott), Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 14, 1965, Ser. No. 471,925
Claims priority, application Germany, July 17, 1964, St 22,423
8 Claims. (Cl. 318—227)

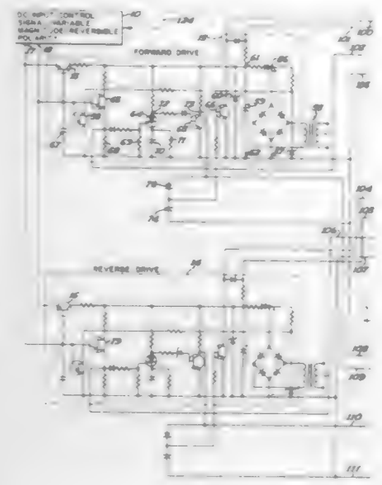


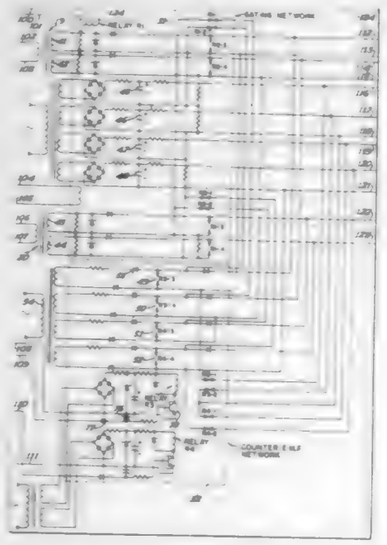
Control circuit for enabling selective rotational speed and direction variations in induction motors. The control circuit uses controlled rectifier switching to alter the frequency of applied voltage to change the speed. A feedback circuit is used to regulate the adjusted speed to compensate for differences in speed regulations caused by the resistance in the rotor circuitry.

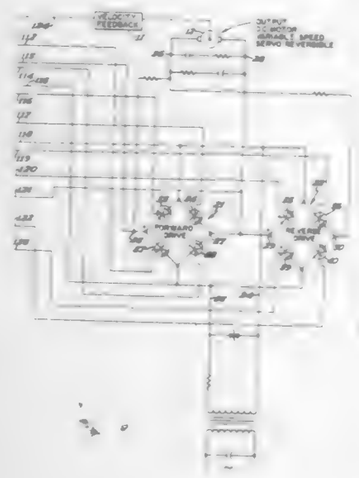
3,375,425
SERVO REVERSIBLE CONTROL APPARATUS FOR D.C. MOTOR
Lawrence K. Bell, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 29, 1965, Ser. No. 443,571
7 Claims. (Cl. 318—302)

A servo reversible control apparatus to control the speed and direction of movement of a DC motor by means of a reversible polarity command signal and a motor produced velocity feedback signal, the motor being energized from two bridge rectifier networks, each bridge network having four SCR's, and with a forward drive electronic network connected to control one of the bridge networks and a reverse drive electronic network connected to control the other bridge network in a manner

to turn-on two of the SCR's and to modulate-on the other two SCR's, including a cross coupling to render one bridge inoperative when the other is operative, and including a

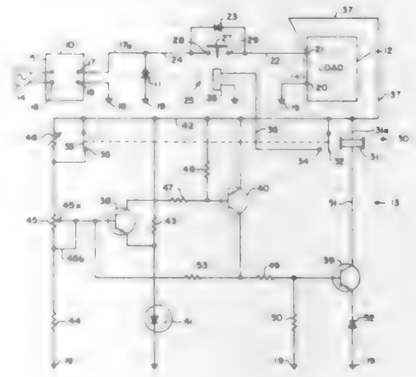






relay structure to reverse energize the motor on a command for speed slowdown of the motor and then utilize the motor counter EMF to commutate-off that rectifier network which reverse energized the motor and to energize the other rectifier network to maintain forward energization at the new lower speed.

3,375,426
BATTERY SYSTEM CONTROL CIRCUIT
Charles D. Dolamore, Lorain, Ohio, assignor to Lorain Products Corporation, a corporation of Ohio
Filed Feb. 17, 1965, Ser. No. 433,425
7 Claims. (Cl. 320—15)



1. In a battery system having a load and a battery charger connected across the battery, in combination, a counter cell connected between the battery and the load, a bypass contactor having fixed contacts connected to opposite ends of said counter cell, a movable contact and a winding, a relay having first and second fixed contacts and first and second contact arms and a winding, a voltage divider and a first resistor connected across the load terminals, a second resistor and a zener diode connected across the load terminals, third and fourth resistors, a first transistor having a base electrode connected to said voltage divider, an emitter electrode connected to a point between said second resistor and said zener diode, and a collector electrode connected to one side of the load through said third and fourth resistors, coupling means, a second transistor having a collector electrode connected to said one side of the load through said winding of said relay, an emitter electrode connected to the other side of the load and a base electrode connected to said fourth resistor through said coupling means, means for connecting one end of said bypass contactor winding to said other side of the load, means for connecting said other end of said bypass contactor winding to said first fixed contact of said relay, means for connecting said first contact arm of said relay to said one side of said load, a feedback resistor connected between the base electrode of said first transistor and the base electrode of said second transistor, means for connecting said second fixed contact of the relay to a point between said voltage divider and said first resistor, means for connecting said second contact arm of the relay to said one side of the load whereby said first resistor is inserted in the current path between said voltage divider and said one side of said load when the relay is de-energized.

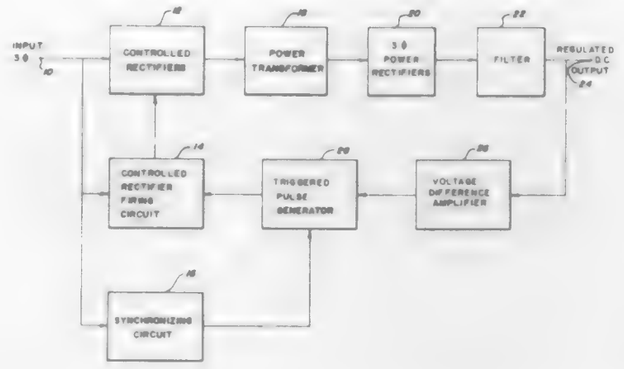
3,375,427
POLYPHASE RECTIFIER
Richard George Magner, Lorain, and Robert J. Plow, Avon Lake, Ohio, assignors to Lorain Products Corporation, a corporation of Ohio
Filed Mar. 12, 1964, Ser. No. 351,505
10 Claims. (Cl. 321—5)

8. In a three-phase rectifier system, the combination comprising:

power transformer means having a plurality of input windings interconnected in a three-phase network and a plurality of output windings interconnected in a three-phase network;

a plurality of controlled impedance devices, each connected in series with one of said input windings and each including a control electrode;

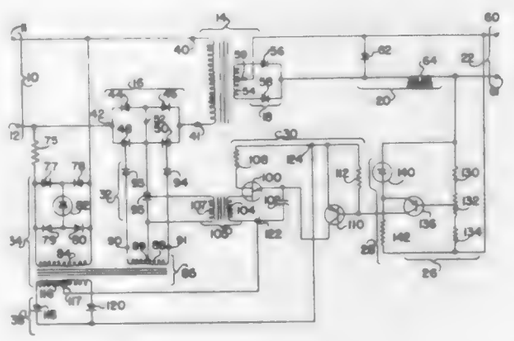
three-phase power input means connected to each of said controlled impedance devices;



firing means coupled to said three-phase power input means and coupled to the control electrode of each of said controlled impedance devices for selectively controlling the periods of conduction of said controlled impedance devices, said firing means including a semiconductor pulse gate and a semiconductor impedance device for each of said controlled impedance devices, each of said semiconductor impedance devices being connected between one of said pulse gates and one of said controlled impedance devices; and

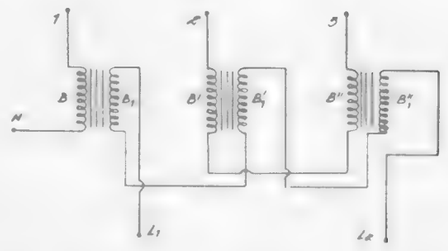
means coupled to said output windings for controlling the firing of said semiconductor impedance devices in accordance with a potential derived from said output windings.

3,375,428
REGULATED RECTIFIER CIRCUIT
Jefferson T. Mitchell, Bay Village, Ohio, assignor to Lorain Products Corporation, a corporation of Ohio
Filed Feb. 4, 1964, Ser. No. 342,496
12 Claims. (Cl. 321—18)



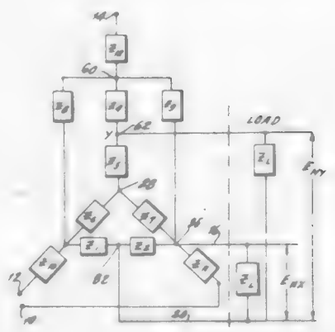
This invention relates to a regulated power supply having a pair of controlled rectifiers each actuated by the same gate circuit controlled rectifier. The gate circuit controlled rectifier receives square wave synchronizing signals derived from an AC source and signals from a phase control oscillator responsive to the output of a difference amplifier connected to the power supply output. In response to this combination of signals, the gate circuit controlled rectifier controls the periods of conductivity of the pair of rectifiers to closely regulate the power supply output voltage.

3,375,429
PHASE CONVERTING POWER TRANSFORMERS
Fernando Pagano, 2210 M.T. de Alvear, Ciudadela, Buenos Aires, Argentina
Continuation-in-part of application Ser. No. 303,479, Aug. 21, 1963. This application Nov. 1, 1966, Ser. No. 591,312
5 Claims. (Cl. 321—57)



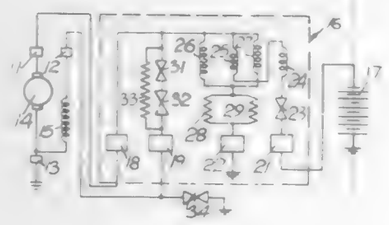
A phase converting power transformer for connecting a single phase load to a three-phase four conductor power supply, comprising a simple primary winding to be connected between one phase of the three-phase power supply and the neutral conductor of said power supply; a compound primary winding to be connected to the two remaining phases of said power supply; a secondary winding to be connected to said single phase load, said secondary winding comprising two windings, a first one corresponding to the secondary winding of said simple primary winding and the second one corresponding to the secondary winding of said compound primary winding.

3,375,430
RESISTIVE NETWORK FOR SYNCHRO TO RESOLVER VOLTAGE CONVERSION
John P. Jagy, Syosset, and John M. Scutt, Great Neck, N.Y., assignors to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,985
17 Claims. (Cl. 321—58)



A signal transformation network is provided with a passive impedance network for the reception of synchro signals and the accurate conversion of these signals to equivalent resolver signals. The passive network is resistive and has a plurality of resistors connected in a predetermined array to provide a high impedance balanced input for the reception of synchro signals and the conversion to equivalent resolver signals at the output terminals of the network.

3,375,431
BATTERY CHARGING SYSTEMS FOR ROAD VEHICLES
Morris Jackson Cook, Redditch, and John William Herbert Freeman, Coventry, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Feb. 16, 1965, Ser. No. 433,022
Claims priority, application Great Britain, Feb. 28, 1964, 8,339/64
11 Claims. (Cl. 322—25)

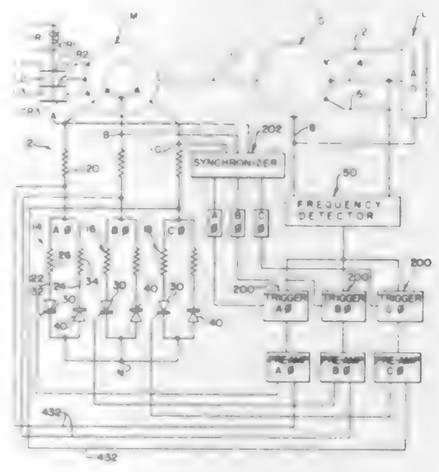


In a battery charging system a generator charges the battery and a voltage regulator limits the output voltage of the generator by opening a pair of contacts in series with the generator field winding whenever the output voltage of the generator exceeds a predetermined value. In order to increase contact life, a Zener diode or clipper diode is connected across the field winding or the contacts to limit the voltage developed across the contacts.

3,375,432
CONTROL CIRCUIT FOR REGULATING THE VOLTAGE OF AN A.C. GENERATOR
Harry D. Kauffman, Cincinnati, Ohio, assignor, by mesne assignments, to Park-Ohio Industries, Inc., a corporation of Ohio
Filed June 14, 1965, Ser. No. 463,737
3 Claims. (Cl. 322—28)

Therm is provided a control circuit for regulating the energization of the field winding of a motor-generator set from a source of pulsating direct current having a series of repetitive pulsations. This control circuit includes a silicon controlled rectifier connected in series with the field winding; a gate pulse generator having an output signal train and pulses with leading portions; means for applying the pulses to the rectifier for controlling the conduction thereof and the current flow through the winding; means for producing a selected command signal proportional to a desired voltage output from the motor driven generator; means for producing a feed back signal from the generator proportional to the voltage output therefrom; means for comparing the command and feed back signals for controlling the gate pulse generator to adjust the position of the leading portions of the pulses generated thereby in direct response to the difference between the command and feed back signals; a source of reference alternating current connected to the pulse generator for timing the occurrence of the pulses; and, means for adjusting the phase of the reference alternating current to align the pulse occurrence with the pulsations of the direct current power source.

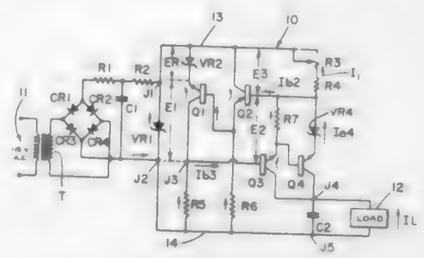
3,375,433
DEVICE FOR CONTROLLING THE OUTPUT FREQUENCY OF A GENERATOR DRIVEN BY A WOUND ROTOR INDUCTION MOTOR
John K. Haggerty, Chagrin Falls, Leonard A. Lowe, Mentor, Peter C. McHale, South Euclid, James J. Unger, Cleveland Heights, and Robert E. White, Euclid, Ohio, assignors to The Electric Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 5, 1964, Ser. No. 401,531
26 Claims. (Cl. 322—32)



There is provided a device for maintaining within a preselected range the output frequency of a generator driven by a wound rotor induction motor having a secondary torque controlling circuit. This device comprises means for generating a signal corresponding to the output frequency of the generator, and the secondary circuit includes a plurality of separate impedance control circuits with the impedance of these control circuits determining the torque the motor exerts on the generator. In each of the control circuits there is provided a silicon controlled rectifier with a gate and an anode-cathode path in series in the circuit. A trigger circuit connected to each of the gates supplies a turn-on signal to the gate in each of the control circuits during a portion of the positive half cycle of the control circuits. There is also provided a means for shifting the position of this signal with respect to the positive half cycle in response to the frequency corresponding signal to compensate for variations in the frequency of the generator output.

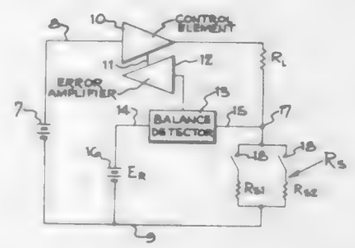
3,375,434
CONSTANT CURRENT GENERATOR
Jerome R. Shapiro, Palos Verdes Peninsula, Calif., assignor to Winsco Instruments & Controls Company, Inc., a corporation of California
Filed May 6, 1965, Ser. No. 453,658
1 Claim. (Cl. 323—4)

A constant current generator is provided wherein a pre-regulated D-C power supply provides current for a load connected between suitable output terminals. A current regulating transistor and variable resistance are connected in series between the output terminals and further transistor means are provided responsive to a change in



voltage across the variable resistance means, this further transistor means connecting to the current regulating transistor to render current passing through the load constant.

3,375,435
CONSTANT CURRENT REGULATOR AND VOLTAGE SENSING CIRCUIT
John D. Baugher, Little Silver, N.J., assignor to The Rowan Controller Company, Westminster, Md., a corporation of Maryland
Filed Mar. 8, 1966, Ser. No. 532,633
5 Claims. (Cl. 323—4)



5. In a constant current power supply having a source of current, output lines connected to said source of current, current control means connected in series in one of said lines, a load and a sensing resistance connected in series and across said output lines, said sensing resistance including plural resistors connected through series switch means in parallel relation, a reference voltage source connected to said other line, a balance detector having input leads connected to said reference voltage and between said load and sensing resistance and an output lead connected to said control means, the improvement in the connection of the balance detector to said sensing resistance comprising,

plural summation resistances, each connected on one side respectively to a sensing resistor between the resistor and its switch means,

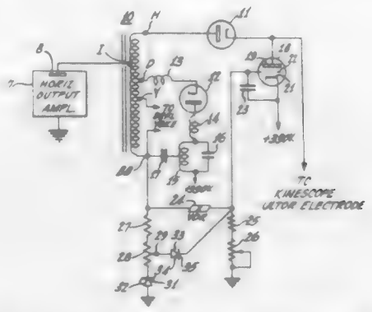
means connecting the other side of said summation resistances to each other and to said balance detector,

the ratios of the ohmic values of said summation resistances to their sensing resistors being the same.

3,375,436
REGULATED HIGH VOLTAGE D.C. POWER SUPPLY
Bethel E. Denton, Robards, Ky., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 17, 1964, Ser. No. 411,839
6 Claims. (Cl. 323—22)

1. In a color television receiver energized by a power source and including a color image reproducing device having an ultor electrode, a high voltage rectifier having an output electrode connected to said ultor electrode for supplying an energizing potential thereto, a source of a first control voltage and a source of a second control voltage, said first and second control voltages being responsive to and reflective of variations in the voltage amplitude of said power source, one of said control voltages having a larger amplitude and exhibiting greater amplitude variations with variations in the voltage amplitude of said power source than the other of said control voltages, and a regulator device having a pair of control electrodes for altering the conductivity of a current path in said device, said current path being connected between said rectifier output electrode and said source of first control voltage, one of said control electrodes being coupled to said source of first control voltage, the combination comprising:

a first voltage divider network having a resistance-exhibiting portion connected between said second control voltage source and a point of substantially unvarying potential;

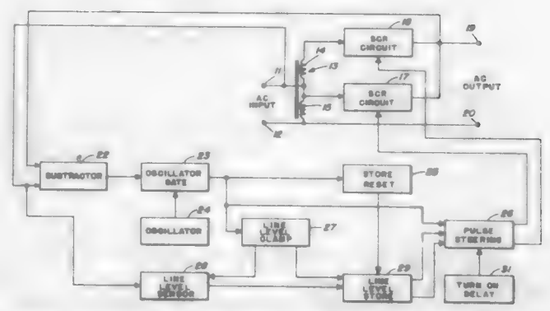


means for connecting the other control electrode of said regulator device to a point on the resistance-exhibiting portion of said first voltage divider network;

a second voltage divider network comprising a resistance-exhibiting portion and a substantially constant voltage portion connected in series in the order named between said source of second control voltage and said point of substantially unvarying potential; and

a diode connected from a point on said second voltage dividing network to said other control electrode of said regulator device in such a manner and polarity that said diode is maintained substantially non-conducting for a preselected voltage amplitude of said power source and is rendered conducting for voltage amplitudes of said power source lower than said preselected voltage amplitude.

3,375,437
MAINTENANCE OF POWER SUPPLY REGULATION DURING LOW-LINE TRANSIENTS
Robert N. Mellott, Palos Verdes Estates, and John J. Phelan, Woodland Hills, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 15, 1965, Ser. No. 440,038
4 Claims. (Cl. 323—22)



A voltage regulator to regulate the output of a power supply during low-line transients. Under normal line con-

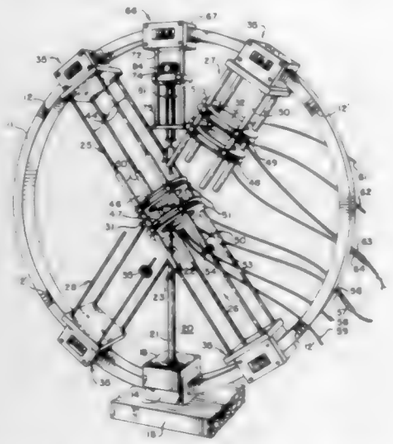
ditions, the line voltage is fed unamplified through the regulator to the power supply by means of an autotransformer. When the line voltage drops, the regulator functions to fire parallel connected rectifiers, connected in each side of the line, to activate additional windings on the autotransformer thereby stepping up the output. This action prevents the power supply from losing regulation during low-line transients.

3,375,438

METHOD AND MEANS FOR ORIENTING CRYSTALS BY ALTERNATE APPLICATION OF ANGULARLY SPACED MAGNETIC FIELDS

Martin F. Auer, Munich, Germany, assignor to the United States of America as represented by the Secretary of The Army

Filed Aug. 8, 1966, Ser. No. 571,146
8 Claims. (Cl. 324—14)



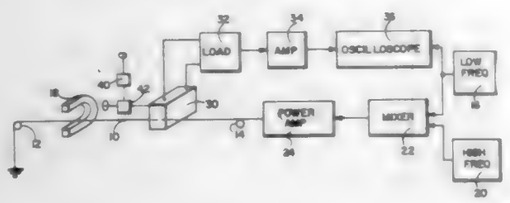
1. A method for locating crystallographic axes in a single spherical crystal ferromagnetic body having first and second axes angularly displaced by an angle α and having a related axis angularly displaced from said first and second axes by a known angle comprising the steps of mounting said body to rotate freely and universally about its center, and alternately subjecting said body to one of a pair of uniform magnetic fields the directions of which are adjustable and mutually displaced by said angle α, said body rotating until each of said first and second axes is in alignment with a corresponding one of said magnetic fields.

3,375,439

METHOD AND APPARATUS FOR TESTING MAGNETIC HEADS UTILIZING A VIBRATING WIRE CARRYING CURRENT

Yujiro Yamamoto, Santa Ana, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Dec. 7, 1964, Ser. No. 416,484
12 Claims. (Cl. 324—34)



1. Apparatus for testing the dynamic response of a magnetic head comprising

a taut wire suspended between two fixed points,

means for causing said wire to vibrate between said two points,

means connected to said vibrating wire for conducting a current therethrough,

means for adjusting the position of a magnetic head under test relative to said wire, and

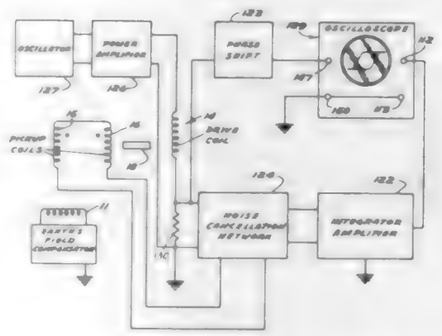
means adapted to be connected to said magnetic head for displaying the response of said head to the magnetic field provided by said current signal through said vibrating wire.

3,375,440

HYSTERESIS LOOP CHECKER FOR MAGNETIC MEMORY ARRAY ELEMENTS

Peter L. Morawetz, Richard J. Petschauer, and Eugene A. Kruschke, Minneapolis, Minn., assignors to Fabri-Tek Incorporated, Minneapolis, Minn., a corporation of Wisconsin

Filed Apr. 16, 1965, Ser. No. 448,763
3 Claims. (Cl. 324—34)



1. Test apparatus for an array of film magnetic elements comprising:

a source of energy in the form of a bidirectional current;

a drive coil electrically connected to said source of energy for producing a magnetic drive field;

first and second pickup coils mounted within said magnetic drive field;

means for mounting the array of magnetic elements within said first pickup coil so that the magnetic signal from all the film magnetic elements of the array will be sensed only by said first pickup coil;

said second pickup coil mounted in spaced relation to said first pickup coil and remote from the array of magnetic elements to prevent sensing by said second pickup means of the magnetic signal from the array;

signal sensing means including in-phase balance control means connected across said first and second pickup coils, and being variable for balancing out any difference in amplitude of induced voltage between said first and second coils due to said magnetic drive field; difference amplifying means having first and second input terminals; means including said in-phase balance control means connecting said first and second pickup coils, respectively, to said first and second input terminals; sample signal input terminals adapted to receive a sample of the bidirectional energy applied to said drive coil; out-of-phase balance control means connected across said first and second input terminals, and connected to said sample signal input terminals, for balancing out errors in phase between the magnetic drive field signal induced in said first and second pickup coils; and means connected to an output terminal on said difference amplifier to provide a signal for display and measurement;

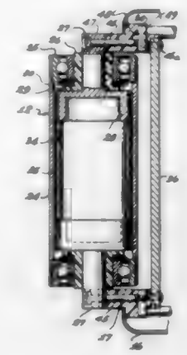
and means connecting said first and second pickup coils in series opposition across said signal sensing means, for providing a signal from the array of magnetic elements substantially unaffected by said magnetic drive field.

3,375,441

ROLLER ELECTRODE PROBE FOR ELECTRICAL MOISTURE-TESTING INSTRUMENT HAVING A ROTATABLE OUTER CYLINDER CONCENTRIC WITH FIRED INNER CYLINDER ELECTRODE

Marvin L. McBrayer, Alhambra, Calif., assignor to Moisture Register Company, Alhambra, Calif., a corporation of California

Filed June 1, 1965, Ser. No. 460,191
6 Claims. (Cl. 324—61)



A system of roller electrodes adapted for application to a rotating roll of paper and the like in an electric moisture determining system. The periphery of the roll of paper is contacted by two parallel, spaced rotatable electrode cylinders, spaced by a narrow annular air gap from a stationary internal electrode cylinder. An electric oscillator circuit is connected at its two sides to the two inside stationarily mounted cylinders. Each pair of outer and inner cylinders forms a coupling condenser, of which the outer cylinder is rotatable. An electric field extends from each outer electrode cylinder through a portion of the roll of paper on test and to a grounded portion of the equipment. The arrangement eliminates the need of a sliding brush type connection from the outer rotatable electrode system to the electrode circuitry, and hence avoids errors and instability owing to variations in resistance occurring at such brushes.

3,375,442

PARAMAGNETIC MICROWAVE POWER DETECTOR WHEREIN INTERACTING ELECTRIC AND MAGNETIC FIELDS EXIST IN A SINGLE PLANE

Hellmut J. Juretschke, Brooklyn, and Walter G. Egan, Richmond Hill, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

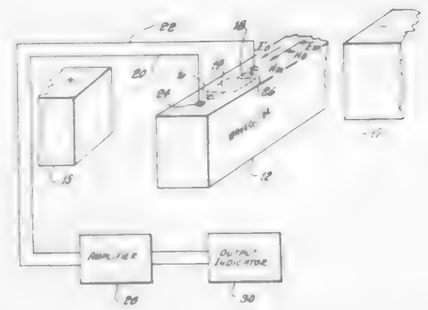
Continuation-in-part of application Ser. No. 41,710, July 8, 1960. This application Dec. 13, 1962, Ser. No. 244,534
11 Claims. (Cl. 324—95)

1. A device for the detection of microwave electromagnetic energy comprising, in combination:

a thin film of electrically conductive, strongly paramagnetic material located within the electromagnetic field of said microwave energy at a point where the magnetic component of the microwave field is strong and lies in the plane of said film, the electric component of the microwave field also lying in the plane of said film;

means for establishing a time-invariant magnetic field in the plane of said film at right angles to the microwave magnetic field, the strength of said time-invariant magnetic field being sufficient to produce a condition of magnetic spin resonance in said film; and

a pair of spaced electrodes in electrical contact with said film, the direction of the spacing being the same as the direction of the D.C. electric field produced



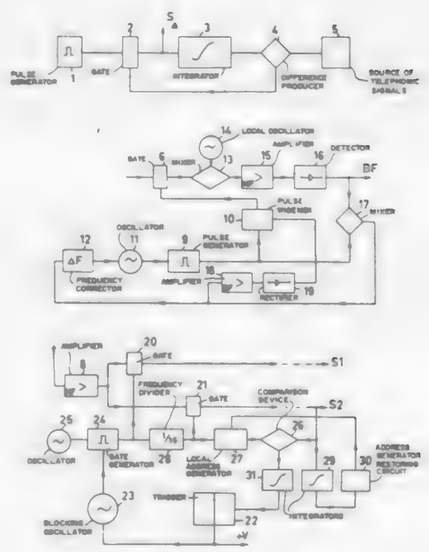
in said film by the interaction of the microwave energy with the time-invariant magnetic field.

3,375,443

RADIO-TRANSMISSION SYSTEM FOR SELECTIVE PULSE COMMUNICATION BETWEEN STATIONS WHICH SHARE A FREQUENCY BAND WITH OTHER STATIONS

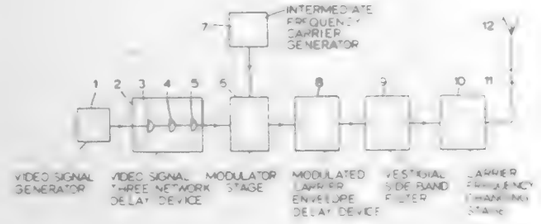
Gaston Salmet, St. Maur, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 15, 1964, Ser. No. 359,858
Claims priority, application France, Apr. 26, 1963, 932,761
8 Claims. (Cl. 325—64)



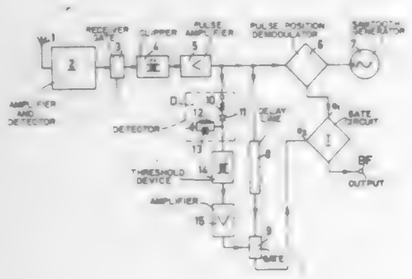
1. In a radio transmission system of the type having a transmitter for transmitting information in the form of modulated pulses having a pulse recurrence frequency characteristic of a given receiver, and said given receiver comprises means for receiving only pulsatory signals having said characteristic pulse recurrence frequency; the improvement wherein said transmitter comprises means for periodically varying the position of said pulses at a variation frequency, and said receiver comprises receiving gate means, means for periodically releasing said gate means at said characteristic frequency for passing incoming signals, and automatic frequency control means responsive to said periodic variation of the position of said pulses for periodically varying the release times of said gate means at said variation frequency, whereby said gate means is released in synchronism with the reception of said modulated pulses.

3,375,444
VESTIGIAL SIDEBAND MODULATOR CIRCUIT
Geoffrey John Lomer, Ickenham, Uxbridge, England, assignor to Electric & Musical Industries Limited, Hayes, England, a British company
Filed Nov. 21, 1963, Ser. No. 325,353
Claims priority, application Great Britain, Nov. 30, 1962, 45,341/62
3 Claims. (Cl. 325—136)


INTERMEDIATE FREQUENCY CARRIER GENERATOR
VIDEO SIGNAL GENERATOR
VIDEO SIGNAL THREE NETWORK DELAY DEVICE
MODULATOR STAGE
MODULATED CARRIER ENVELOPE DELAY DEVICE
VESTIGIAL SIDE BAND FILTER
CARRIER FREQUENCY TRANSMITTING STAGE

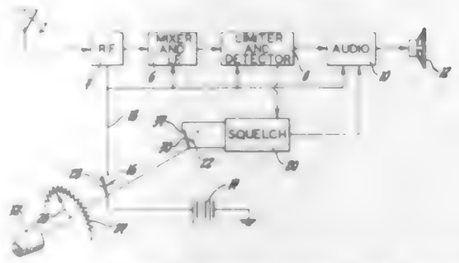
1. Apparatus for generating an amplitude modulated carrier wave having a vestigial sideband, comprising a source of modulating signal, means for delaying frequency components of the modulating signal which are transmitted single sideband relative to components of the modulating signal which are transmitted double sideband a source of carrier wave, means for modulating the amplitude of the carrier wave with the modulating signal after said delay has been effected, means for delaying selected frequency components of the modulated carrier wave, said selected components at least including components which have a counterpart in the vestigial sideband and means for partially removing one sideband of the modulated carrier wave to form the vestigial sideband, the delays of said frequency components of the modulating signal and of the carrier wave being arranged to substantially reduce the relative delay which would otherwise be produced by the partial removal of said one sideband.

3,375,445
DEVICE FOR DISTORTION REDUCTION IN A PPM RECEIVER
Gaston Salmet, St. Maur, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 10, 1964, Ser. No. 410,145
9 Claims. (Cl. 325—324)



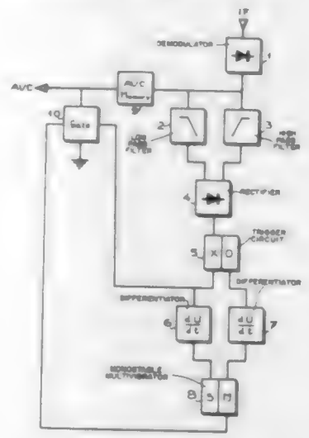
The effect of interference is reduced in a pulse code modulation receiver by providing means for gating the output of a pulse demodulator to an output circuit only when the input does not include pulses that are spaced too closely. In a pulse position modulation system in which the input pulses pass through a gate opened only at intervals during which a pulse is expected, a detector circuit is provided for detecting the occurrence of multiple pulses during the interval, and the detector circuit produces a control signal for inhibiting gating of the demodulator output in the event of multiple pulses.

3,375,446
COMBINATION RADIO RECEIVER VOLUME AND SQUELCH CONTROL
James H. Guyton, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 10, 1964, Ser. No. 395,449
2 Claims. (Cl. 325—399)



The construction and interconnection of a switch for radio receivers having a squelch circuit. Switch shaft carries volume control knob and two cam actuators for On-Off switch and squelch circuit switch so squelch is deactivated at maximum volume position.

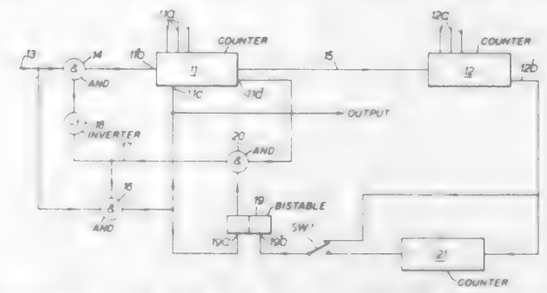
3,375,447
AUTOMATIC GAIN CONTROL CIRCUIT WITH DELAYED DECAY OF THE GAIN CONTROL SIGNAL
Theodorus van der Beek, Leiden, Netherlands, assignor, by mesne assignments, to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 14, 1964, Ser. No. 403,748
Claims priority, application Netherlands, Nov. 29, 1963, 301,150
6 Claims. (Cl. 325—410)



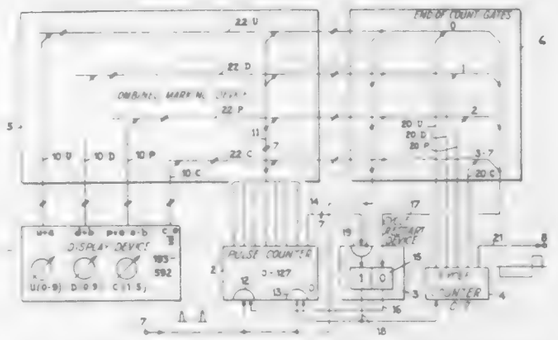
An automatic gain control circuit comprising a memory circuit for storing a gain control voltage. A gate circuit is provided to discharge the memory circuit in response to the simultaneous occurrence of an output of a trigger circuit indicating the absence of an input signal, and the output of a monostable multivibrator connected to indicate the lapse of a predetermined period of time following the last occurrence of an input signal.

3,375,448
VARIABLE DIVIDERS
John David Newman, Hayling Island, and Robert A. Elliot, Petersfield, England, assignors to The Plessey Company Limited, Ilford, England a British company
Filed Aug. 30, 1965, Ser. No. 483,457
Claims priority, application Great Britain, Sept. 4, 1964, 36,432/64
7 Claims. (Cl. 328—42)

A variable divider apparatus having counter means settable to a desired division ratio into which is applied input signal pulses, bistable means operable when said counter means attains its recognition state, gating means responsive to said bistable means and effective for causing said counter means to be reset by the rerouting of said input signal pulses, and side-step means effective for causing the overall division ratio of said variable divider to be changed from the division ratio set into said counter means.



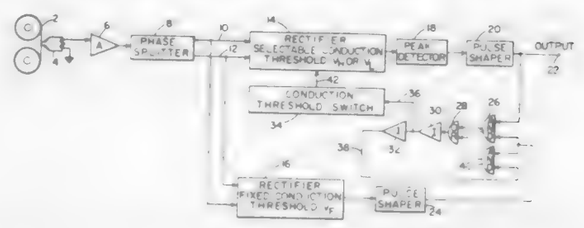
3,375,449
FREQUENCY DIVIDER WITH VARIABLE DIGITAL RATIO
Jean Louis Ribour, Boulogne-Billancourt, and Henry Fernand Garin, Paris, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 12, 1965, Ser. No. 455,099
5 Claims. (Cl. 328—48)



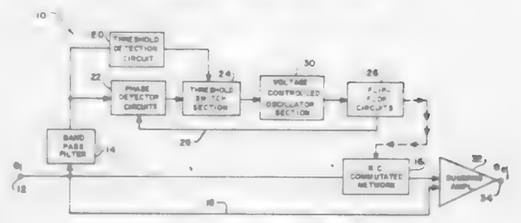
1. A variable pulse frequency divider for counting incoming pulses and producing an output pulse for each group of input pulses equal in quantity to the number by which the frequency is being divided, said number having a plurality of digital positions, comprising
a pulse counter;
means for applying the input pulses to said pulse counter;
means for setting up physical conditions for each digital position related to the complement of the corresponding digit of said number;
means responsive to the combination of said physical conditions for each digital position and the state of said pulse counter each time it has counted up to a predetermined number assigned to said digital position, to produce a signal; and
cyclic programming means responsive to successively selected ones of said signals for controlling said pulse counter and producing an output pulse.

3,375,450
PEAK DETECTOR WITH AUTOMATIC NOISE LEVEL ADJUSTING MEANS
Douglas B. Ayres, Cochituate, and David R. Sutton, Framingham, Mass., assignors to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Delaware
Filed Apr. 29, 1964, Ser. No. 363,392
9 Claims. (Cl. 328—150)

A circuit for detecting the peak amplitude occurrence of each of a plurality of sequentially applied signal pulses and having a signal detection stage whose noise discrimination level is set to and sustained at a high or a low value in accordance with the peak amplitude of the immediate preceding signal pulse.

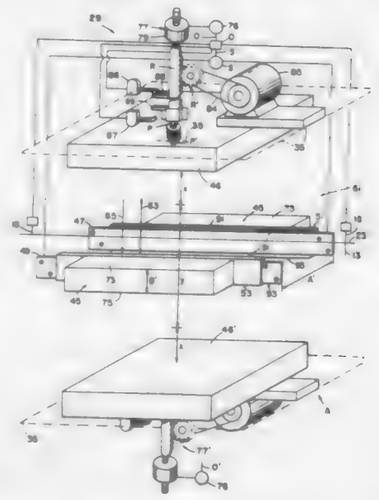


3,375,451
ADAPTIVE TRACKING NOTCH FILTER SYSTEM
Michael T. Borelli, Harry J. Daniels, and Hans H. Hosenthien, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed June 17, 1965, Ser. No. 464,878
19 Claims. (Cl. 328—167)



An adaptive notch filter which constructs a reversed phase noise signal utilizing modulation techniques, and then sums the constructed signal with the composite input signal so that the noise signal is cancelled.

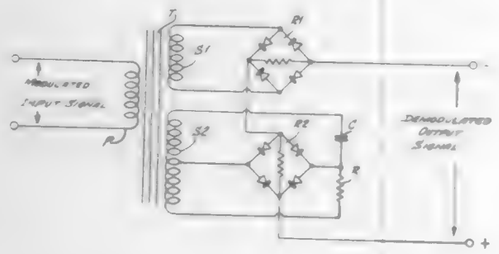
3,375,452
FERRITE ADJUSTABLE KICKER MAGNET FOR EXTRACTING BEAMS OF CHARGED PARTICLES
Eric B. Forsyth, Brookhaven, N.Y., assignor to The United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 13, 1967, Ser. No. 609,730
7 Claims. (Cl. 328—235)



A method and apparatus for magnetically, sequentially, extracting beams of charged particles from an endless high energy accelerator ring by selectively separating non-con-

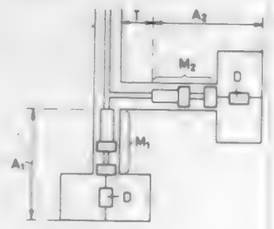
ducting, magnetically susceptible ferrite blocks to form a large cross-section aperture for receiving large diameter low momenta beams, and selectively moving said blocks together to form a small cross-section aperture with stationary, spaced apart, ferrite blocks having stationary conductors thereon that receive small diameter, high momenta, beams and to eject these small diameter beams from the accelerator.

3,375,453
SUPPRESSED CARRIER DEMODULATION CIRCUIT
William Adler, Westbury, N.Y., assignor to Servo Corporation of America, Hicksville, N.Y., a corporation of New York
Filed Jan. 21, 1965, Ser. No. 426,719
4 Claims. (Cl. 329—145)



A circuit for demodulating amplitude modulated signals in which a first rectifier rectifies the full wave of the incoming signal, and a second rectifier rectifies this signal after a phase shifter has shifted the phase of the incoming signal by 90 degrees. The outputs of the first and second rectifiers are then added to produce the demodulated output signal.

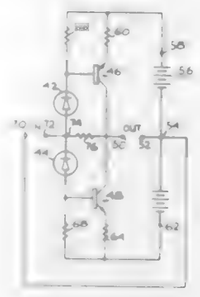
3,375,454
PARAMETRIC AMPLIFIERS WITH QUARTER-WAVE SPACING
Colin Stuart Aitchison, Horley, England, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 31, 1967, Ser. No. 664,672
Claims priority, application Great Britain, Sept. 1, 1966, 38,999/66
3 Claims. (Cl. 330—4.9)



The gain-bandwidth factor of a diode parametric amplifier system is increased by providing two diode parametric amplifiers having their signal input ports interconnected by a transmission line section that is one quarter wavelength long at the signal frequency.

3,375,455
SYMMETRICAL AMPLIFIER WITHOUT DC SHIFT BETWEEN INPUT AND OUTPUT
Nathaniel Motta, Pasadena, Calif., assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California
Filed Oct. 20, 1964, Ser. No. 405,040
7 Claims. (Cl. 330—13)

A transistor amplifier is provided which is suitable for multi-stage utilization and includes two opposite impurity type transistors, with their collectors connected together and their emitters coupled to opposite sides of a center tap power supply. Output is taken from the collectors and the center tap of the power supply. The



bases are biased by either diodes for low level inputs or zener diodes for high level inputs. Input is applied between the center point of the diodes and the center tap of the power supply.

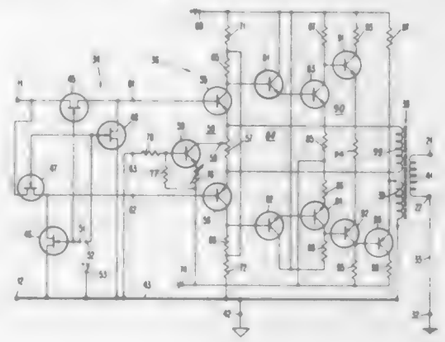
3,375,456
VARIABLE BANDWIDTH CRYSTAL FILTER CIRCUIT
Arnold M. Frisch, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Dec. 7, 1964, Ser. No. 416,355
7 Claims. (Cl. 330—21)

A variable bandwidth crystal filter circuit is described whose gain remains substantially constant. The bandwidth is varied automatically by a voltage sensitive impedance, such as a diode, which changes the effective emitter load resistance of an output transistor whose input impedance is employed as part of a resonant circuit connected to the output of the crystal filter. The transistor is connected as a phase splitter amplifier with two outputs of opposite phase and such outputs are coupled together through a gain compensation network to a common output terminal so that such two outputs are only approximately 90 degrees out of phase when they are combined together to provide an output signal whose amplitude remains substantially constant in spite of the changes in frequency bandwidth.

3,375,457
DATA ACQUISITION AMPLIFIERS
Carl Paul Hollstein, Jr., Campbell, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 22, 1965, Ser. No. 427,246
8 Claims. (Cl. 330—30)

Common mode voltage rejection and signal source isolation of a data acquisition differential amplifier are

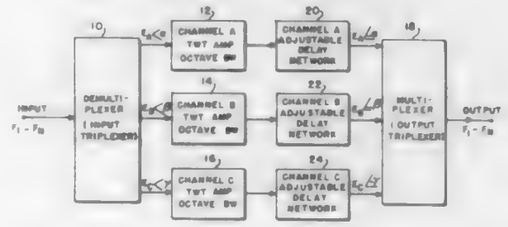
enhanced by a 4-transistor switch arrangement connecting the signal input terminals cyclically and alternately to the signal terminals of the amplifier. Two transistors are switched to connect the input terminals to the signal terminals in one phase of each cycle. The other two transistors are then switched to invert the connections between the signal terminals and the input terminals in the second phase of each cycle.



This arrangement permits one input terminal to be connected to ground or other point of reference potential. A continuous galvanic connection is afforded for reference potential leads.

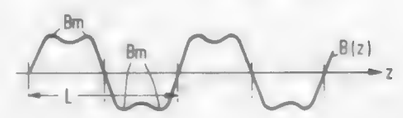
The output stage of the amplifier comprises a pair of complementary connected transistors followed by a single emitter follower transistor coupled to the primary winding of an isolation transformer.

3,375,458
WIDE-BAND AMPLIFIER
Richard D. Kelch, Santa Clara, Calif., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 30, 1964, Ser. No. 355,983
4 Claims. (Cl. 330—43)


INPUT
DEMULTI-PLEXER (INPUT TRIPLEXER)
CHANNEL A TWT AMP OCTAVE BW
CHANNEL B TWT AMP OCTAVE BW
CHANNEL C TWT AMP OCTAVE BW
CHANNEL A ADJUSTABLE DELAY NETWORK
CHANNEL B ADJUSTABLE DELAY NETWORK
CHANNEL C ADJUSTABLE DELAY NETWORK
MULTI-PLEXER (OUTPUT TRIPLEXER)
OUTPUT

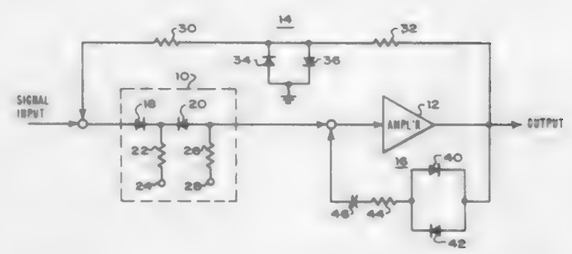
A multiplex-type amplifier system which is characterized by little or no degradation in performance at the cross-over points of the individual amplifiers within the amplifier system is provided. A wideband signal containing a plurality of octave signals is demultiplexed or separated into octave signals. Each of the octave signals is applied to a separate traveling wave tube octave amplifier. Each octave amplifier input signal, of course, has a particular phase angle. The output from each TWT amplifier is applied to a separate adjustable delay network. The time delay introduced by each delay circuit is of such an amount that the phase angle of the delay circuit output signal is the exact invert of the phase angle of the input signal to the TWT amplifier associated with that delay network. That is the phase angle of the output signal of a given delay circuit is exactly 360° minus the phase angle of the input signal to the TWT amplifier associated with that delay circuit. The outputs from the plurality of delay circuits are combined by a multiplexer. By maintaining the phase angle relationships as noted above there is little or no degradation of signals at the cross-over points of the TWT amplifiers.

3,375,459
ELECTRON BEAM TUBE WITH TRANSVERSE WAVE MODULATION FOR THE AMPLIFICATION OF HIGH-FREQUENCY SIGNALS
Horst Seunik and Werner Veith, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Aug. 6, 1965, Ser. No. 477,803
Claims priority, application Germany, Aug. 12, 1964, S 92,603
9 Claims. (Cl. 330—4.7)



An electron beam tube with transverse wave modulation, in which transverse waves in the electron beam are amplified by a magnetostatic pump field, the pump field being a magnetic field alternating periodically in direction with a field strength course which presents a dip in the middle of each half period of the magnetic field, and in which system the maxima of the field course on both sides of the dip are separated on the respective sides of the dip by at least a quarter of the period length, with the electron beam being focused in the second or higher pass range.

3,375,460
FEEDBACK AMPLIFIER HAVING AN INPUT CURRENT LIMITING CIRCUIT
Donald K. Miller, San Jose, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Aug. 4, 1965, Ser. No. 477,165
4 Claims. (Cl. 330—51)

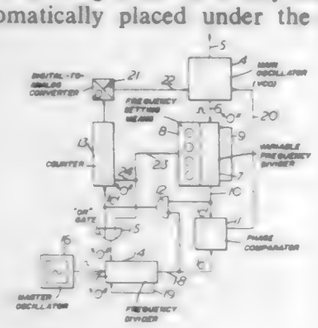


A feedback circuit is responsive to input signals below a first level of magnitude for reducing the input impedance of an amplifying circuit. This feedback circuit is inactivated and a feedback circuit for reducing the gain of an amplifier of the amplifying circuit is activated in response to input signals above the first level of magnitude. A current limiting circuit for preventing the amplifier from being saturated or biased to cutoff is responsive to input signals above a second and higher level of magnitude for decoupling the amplifier from those input signals.

3,375,461
AUTOMATIC FREQUENCY CONTROL LOOP WITH FREQUENCY SCANNING
Jean Louis Ribour, Boulogne-Billancourt, Seine, and Lucien Jacques Hardouin, Sceaux, Seine, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 6, 1966, Ser. No. 555,547
Claims priority, application France, June 30, 1965, 22,949
9 Claims. (Cl. 331—4)

A stabilized, variable frequency source which automatically scans in the frequency spectrum until a selected

output frequency is reached. When the output frequency is reached, the scanning is automatically stopped and the source is automatically placed under the control of a



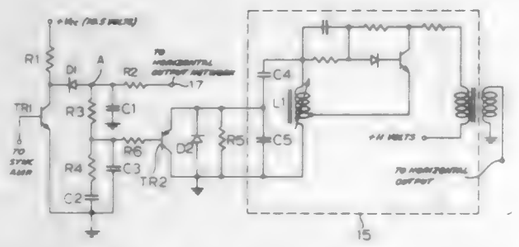
phase comparator to maintain the output frequency substantially constant. Primarily digital controls are utilized in the scanning and switching apparatus.

3,375,462

FREQUENCY CONTROL TRANSISTOR CONNECTED ACROSS CAPACITOR OF OSCILLATOR

James E. McTaggart, Waterloo, Ontario, Canada, assignor to Dominion Electrohome Industries Limited, Kitchener, Ontario, Canada

Filed Oct. 10, 1966, Ser. No. 585,558
8 Claims. (Cl. 331—8)



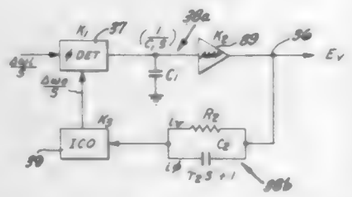
The frequency of an oscillator having a tank circuit comprising a coil, a first capacitor and a frequency determining capacitor, the latter two components being connected in a series circuit shunting the coil, is controlled by a control signal supplied to the base electrode of a transistor in a reactance network connected to the tank circuit. The transistor is connected in common collector configuration and operates under class C conditions. The transistor shunts the frequency determining capacitor.

3,375,463

LOOP FILTER FOR PHASE LOCKED LOOP FREQUENCY DETECTOR

R. Glen Madsen, Newport Beach, Calif., assignor to Astrodata, Inc., Anaheim, Calif., a corporation of California

Filed Dec. 17, 1965, Ser. No. 514,480
9 Claims. (Cl. 331—17)



The invention concerns an improved loop filter for use in a phase locked loop frequency to voltage converter that also includes a phase sensitive detector and a tracking oscillator connected in a loop. The filter comprises current integrating means and loop damping means connected in series sequence between the output from the detector and the input to the oscillator, and the output of the loop is taken at a point between the integrator means and the loop damping means.

3,375,464

SINGLE-PHASE, SOLID SOLUTION LUMINESCENT COMPOSITIONS, PREPARATION THEREOF AND LASERS CONTAINING SAME

Lothar H. Brixner, Brandywine Hills, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 14, 1964, Ser. No. 367,533
13 Claims. (Cl. 331—94.5)

11. A laser apparatus having as an essential component thereof a single crystal of a single-phase, solid-solution luminescent composition of the formula

$$Ln_xNa_xCa_{3-2x}(VO_4)_2$$

where Ln is a rare earth element of atomic number 58 through 71 and x has a value of from 0.01 to 0.4.

3,375,465

ALKALI COMPENSATED RARE EARTH DOPED ZINC OR CADMIUM BORATE PHOSPHORS

Lothar H. Brixner, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 25, 1964, Ser. No. 413,827
11 Claims. (Cl. 331—94.5)

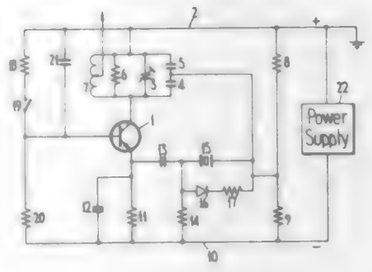
Novel single-phase solid-solution compounds of the formula $Ln_x^{+3}Na_x^{+1}A_{1-2x}^{+2}B_2O_4$ where Ln is a rare earth element of atomic number 60, 62, 63, 65, 66, or 69; A is cadmium or zinc; and x has a value of from 0.01 to 0.3, have been prapared and found to emit radiation over a very narrow range of spectral wavelength, making them useful as phosphors in general and more specifically as laser crystals.

3,375,466

QUICK STARTING CRYSTAL-CONTROLLED OSCILLATOR

Geoffrey Pratt, Bulkington, near Nuneaton, England, assignor to The General Electric Company Limited, London, England, a British company

Filed Nov. 22, 1966, Ser. No. 596,293
Claims priority, application Great Britain, Nov. 26, 1965, 50,349/65
4 Claims. (Cl. 331—116)



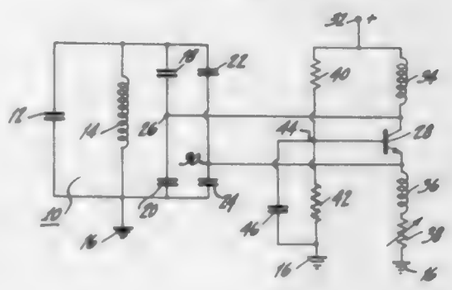
In an electric oscillator circuit the frequency of which is determined normally by a piezoelectric crystal connected in a positive feedback path, a rectifier element is connected in parallel with the crystal. This rectifier element is arranged to be forward biased for a short period following switch-on of the oscillator so as to short out the crystal and allow the amplitude of oscillation to build up rapidly at approximately the right frequency, as determined by a relatively low Q tuned circuit.

3,375,467

LOW NOISE VHF TRANSISTOR OSCILLATOR

Albert W. Weinrich, Collingswood, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 27, 1966, Ser. No. 553,499
10 Claims. (Cl. 331—117)



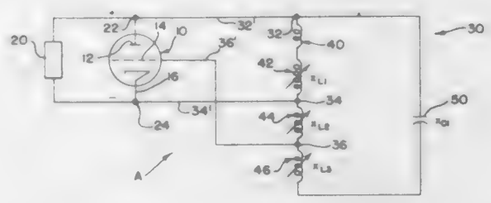
A low noise oscillator includes a tank circuit with the emitter and collector of a transistor coupled in feedback relation to the tank circuit. A large capacitor is effectively connected between the collector and base of the transistor to swamp out variations in the output capacity of the transistor. The coupling of the emitter of the transistor to the tank circuit is also chosen to maximize the Q of the oscillator, the value of a resistor connected between the emitter and a point of reference potential being chosen to reduce the phase modulation waves produced by the oscillator. The large capacitor, the coupling of the emitter to the tank circuit and the emitter resistor each contribute to the purity of, and thus reduce the noise present in the output wave of the oscillator.

3,375,468

CONTROL DEVICE FOR AN INDUSTRIAL HEATING OSCILLATOR

Cecil P. Porterfield and George A. Kappenhagen, Cleveland, Ohio, assignors to Park-Ohio Industries, Inc., a corporation of Ohio

Filed Aug. 12, 1964, Ser. No. 389,077
3 Claims. (Cl. 331—169)



3. A method for maintaining a substantially constant antiresonant resistance having a value R*ar* in a tank circuit of an oscillator for an industrial heating installation when the Q of the tank circuit is changed by variations in the electrical characteristics of the heating load, said tank circuit having a first portion which is predominantly inductive reactance and a second portion which is predominantly capacitive reactance, said method comprising the following steps:

(a) adjusting the inductive reactance of the predominantly inductive portion of the tank circuit inversely proportional to the change of Q so that the antiresonant resistance determined by the predominantly inductive portion is substantially R*ar*; and,

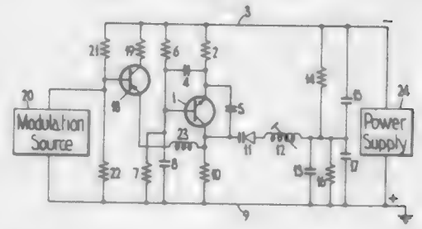
(b) adjusting the capacitive reactance of the predominantly capacitive reactance portion of the tank circuit proportionally to the change of inductance so that the antiresonant resistance determined by the predominantly capacitive portion is substantially R*ar*.

3,375,469

FREQUENCY MODULATED ELECTRIC OSCILLATORS UTILIZING VARIABLE CAPACITANCE SEMICONDUCTOR DIODES

David Dawson, Coventry, England, assignor to The General Electric Company Limited, London, England, a British company

Filed Nov. 8, 1966, Ser. No. 592,842
Claims priority, application Great Britain, Nov. 9, 1965, 47,464/65
2 Claims. (Cl. 332—30)



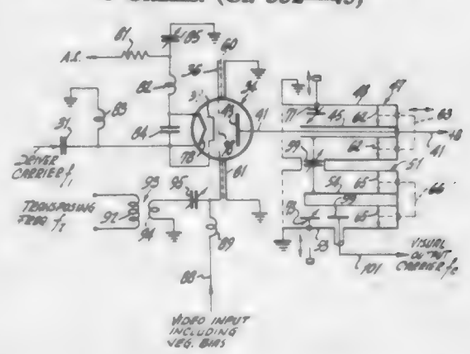
In a frequency modulated transistor oscillator the oscillation frequency of which is determined by a tuned circuit including a variable capacitance diode, the tuned circuit is arranged as a series tuned circuit between the collector electrode of the oscillator transistor and one pole of the supply, with one terminal of the diode connected to the collector electrode, and a frequency controlling signal is applied to the junction between the said collector electrode and the terminal of the diode. In this way the frequency controlling signal is not partly shunted by components of the tuned circuit.

3,375,470

MODULATION TECHNIQUE EXHIBITING IMPROVED STABILIZATION AT HIGH CARRIER FREQUENCIES

Adolf H. Bott, McMurray, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,171
6 Claims. (Cl. 332—45)



The improved stability modulation scheme at high carrier frequencies comprises effectively operating a triode mixer stage in the grounded grid mode for a driver frequency, which driver frequency differs from the modulated output carrier frequency by a relatively low transposing frequency, while at the same time operating the triode mixer as a grid modulator at the relatively low transposing frequency.

3,375,471

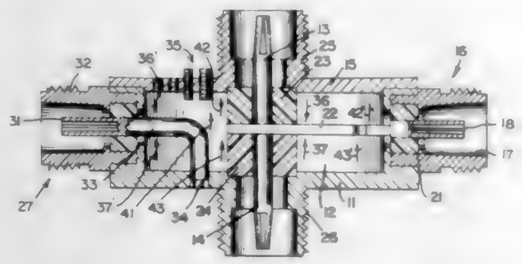
HIGH FREQUENCY COMPONENT EXHIBITING MAGIC T PROPERTIES

Theodore S. Saad, Westwood, Mass., assignor to Sage Laboratories, Inc., East Natick, Mass., a corporation of Massachusetts

Filed Nov. 6, 1964, Ser. No. 409,421
11 Claims. (Cl. 333—11)

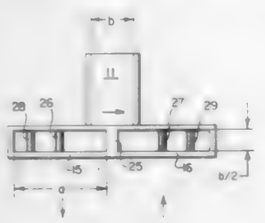
A cavity has opposed generally parallel conducting end walls for establishing an electric field generally per-

pendicular to the end walls. A conducting strip midway between and generally parallel to the end walls defines with respective ones of the end walls parallel plate transmission lines for coupling energy from a TEM input branch to intermediate branches in respective ones of the end walls that are coupled to the conducting strip. An odd mode branch is for establishing an odd TE mode in the cavity having electric field components perpendicular to the end walls so that when the branches are terminated in their respective characteristic impedances, energy applied to one of the TEM or odd mode branches divides substantially equally between the intermediate



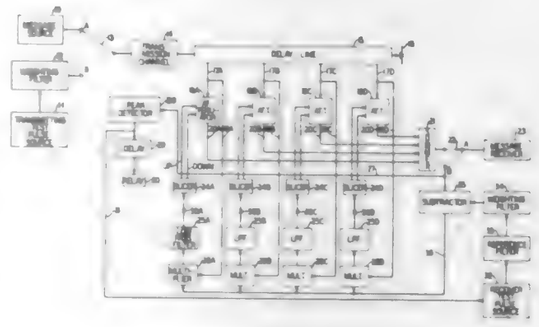
branches without reaching the other of the odd or TEM mode branches. With crystals terminating the respective intermediate branches a fifth terminal may be provided with a lead to the conducting strip for withdrawing energy at I–F frequency. In one embodiment of the invention the cavity is circularly cylindrical with circular end walls and a link coupling from the odd mode branch to the cavity. In another embodiment of the invention the cavity is essentially a portion of rectangular waveguide with the end walls comprising the broad walls of such a waveguide, and the odd mode branch comprises a rectangular opening for receiving energy from a rectangular waveguide of corresponding cross section.

3,375,472
BROADBAND STRUCTURES FOR WAVEGUIDE HYBRID TEE'S
Richard M. Walker, Chestnut Hill, Mass., assignor to Microwave Associates, Incorporated, Burlington, Mass., a corporation of Massachusetts
Filed June 6, 1966, Ser. No. 555,529
13 Claims. (Cl. 333—11)



12. An H-plane folded hybrid tee rectangular-waveguide junction comprising an E-plane arm, an H-plane arm, and two common arms folded in an H-plane bounded by their top wide walls in a first common plane and their bottom wide walls in a second common plane, so as to share a common junction region for each said arm bounded by said top and bottom wide walls, and means for matching each said arm at said region so that power fed into the E-plane arm divides into two equal components 180° out of phase in the common arms, power fed into the H-plane arm divides into two equal components in phase in the common arms and power fed into either common arm divides into two equal components in the E-plane arm and the H-plane arm, wherein the improvement comprises a plurality of electrically inductive means extending between the top and bottom wide walls across said common region symmetrically on either side of the E-plane arm in said region for reactively matching said E-plane arm to said common region, the geometry of an end wall of said region is adjusted for reactively matching said H-plane arm to said common region, said common arms are folded parallel and share a common narrow wall, and the remaining narrow walls of said common arms extend to said end wall to provide an enclosure for said common region which is substantially of uniform electrical width from said common arms to said end wall.

3,375,473
AUTOMATIC EQUALIZER FOR ANALOG CHANNELS HAVING MEANS FOR COMPARING TWO TEST PULSES, ONE PULSE TRAVERSING THE TRANSMISSION CHANNEL AND EQUALIZER
Robert W. Lucky, Red Bank, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 15, 1965, Ser. No. 472,146
9 Claims. (Cl. 333—18)



1. Apparatus for establishing optimum settings for the attenuators in a transversal equalizer intended for the correction of the frequency response characteristic of a band-limited transmission medium comprising

means at one end of said transmission medium transmitting a first series of test pulses through said medium and said equalizer,

means at the other end of said transmission medium generating a second series of test pulses in synchronism with said first series,

a reference filter having the frequency response characteristic desired for said transmission medium in tandem with said generating means,

means deriving an error signal from a comparison of said first and second series of test pulses,

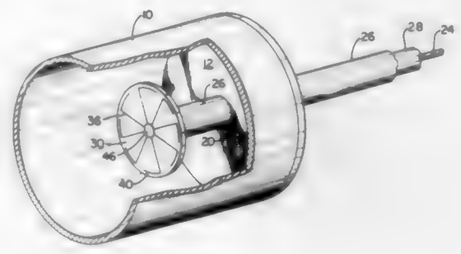
means correlating said error signal with the inputs to the individual attenuators of said equalizer over the interpulse period,

means determining the polarity of the outputs of said correlating means, and

means responsive to said determining means adusting the settings of said attenuators incrementally in a direction opposite to said polarity.

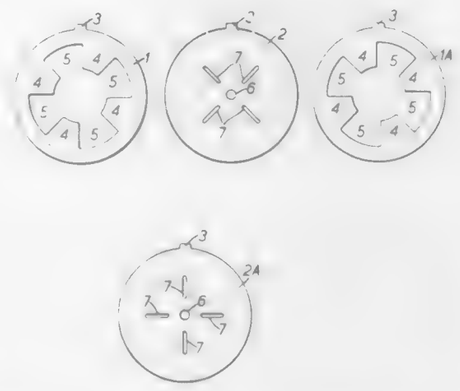
3,375,474
MICROWAVE WAVEGUIDE TO COAX COUPLING SYSTEM
Leonard W. Thompson, Golden, and Billie W. Preston, Littleton, Colo., assignors to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Oct. 8, 1965, Ser. No. 494,189
15 Claims. (Cl. 333—21)

1. In a microwave transmission system, a hollow circular waveguide having an end wall closing one end thereof, a coaxial transmission line having an inner conductor and an outer conductor surrounding said inner conductor, said transmission line terminates within said waveguide with the end portion of said inner conductor extending along the central longitudinal axis of said waveguide, and means for coupling said transmission line and said waveguide and operable to propagate TE_{01} mode wave along said waveguide including feeder means comprising a plurality of feeder elements electrically con-



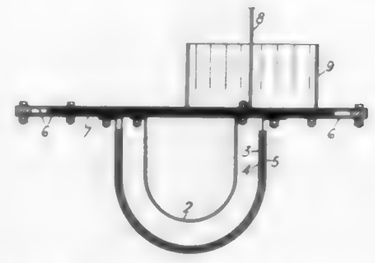
nected to said end portion of said inner conductor and extending radially therefrom in a plane normal to said longitudinal axis of said waveguide and antenna means electrically connected to the outer ends of said feeder elements and arranged in said plane such that the longitudinal axis thereof lies on the circumference of a circle in which said feeder elements are radii.

3,375,475
TRAVELLING WAVE TUBES AND WAVE TRANSMISSION LINES SUITABLE FOR USE THEREIN
Neville Wreford Harris, Great Baddow, Essex, England, assignor to English Electric Valve Company Limited, London, England, a British company
Filed Mar. 18, 1964, Ser. No. 352,914
Claims priority, application Great Britain, Mar. 25, 1963, 11,667/63
6 Claims. (Cl. 333—31)



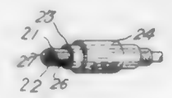
A wave retarding structure for a travelling wave tube having slot-coupled resonant wave guide sections constituted by relatively thick members and thin partition walls alternating in a stack. The thick members have equally circumferentially spaced inwardly projecting fingers and the partition walls have equally circumferentially spaced radial slots. Successive thick members are staggered circumferentially so that the inwardly projecting fingers of a thick member are opposite the space between two adjacent fingers in the next thick member, and successive partition walls are so staggered circumferentially that each slot in a partition wall is opposite the unslotted material between two adjacent slots in the next partition wall.

3,375,476
RADIOFREQUENCY HEATING APPARATUS
Christopher E. M. Tibbs, Wokingham, England, assignor to Radyne Limited, Wokingham, England, a British company
Filed Oct. 14, 1963, Ser. No. 315,913
12 Claims. (Cl. 333—76)



In order to reduce the harmonic content of radiofrequency energy in the load circuit of industrial high frequency heating equipment, the oscillator is inductively coupled to the output circuit and the inductive coupling is screened by at least two successive shields of continuous conductive sheet material which form a tunnel around the inductive coupling member. These shields together with the inductive coupling member form an electrical capacitance and function as both an electrostatic and an electromagnetic screen. The relationship between the resonant frequency of the screen and the fundametal frequency of the equipment is such that magnetically induced voltages at harmonics of the fundamental are substantially reduced in amplitude over magnetically induced voltages at the fundamental frequency.

3,375,477
OVERHEAT DETECTOR FOR ELECTRIC BLANKETS AND THE LIKE
Toshinobu Kawazoe, 14 Hongo-cho, Meguro-ku, Tokyo, Japan
Filed July 10, 1964, Ser. No. 381,749
Claims priority, application Japan, July 22, 1963, 38/37,034
7 Claims. (Cl. 338—26)

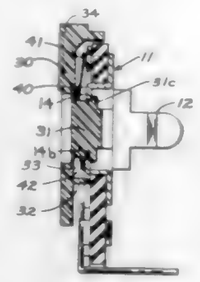


An overheat detection and signalling system for electric blankets, heating pads, and the like, in which thermosensitive material is disposed between and in contact with a pair of wires, for instance, a heater wire and an overheat control signal wire. The thermosensitive material used consists of metallic oxides, sulfides, or carbides suspended in an insulating matrix.

3,375,478
ELECTRICAL CONTROL AND METHOD OF MAKING THE SAME
John Van Benthuysen and Wayne A. Barden, Elkhart, Ind., assignors to CTS Corporation, Elkhart, Ind., a corporation of Indiana
Filed May 11, 1964, Ser. No. 366,542
10 Claims. (Cl. 338—174)

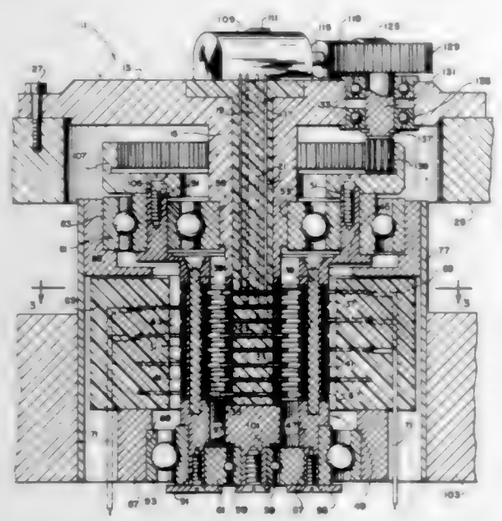
A variable resistance control having a resistance element supported on an electrically conductive bracket integral with a collector ring. A rotatable member is rotatably secured to the bracket with an electrically nonconductive heat-deformable shaft. The portion of the shaft journaled in an aperture provided in the bracket is

swaged to increase the diameter and improve the bearing fit between the shaft and the bracket. An annular ring integral with the rotatable member slideably engages the resistance element for stabilizing the rotatable



member relative to the resistance element and an equalizing contactor pivotally supported by a pair of arms is nestedly disposed in the space between the shaft and the annular ring.

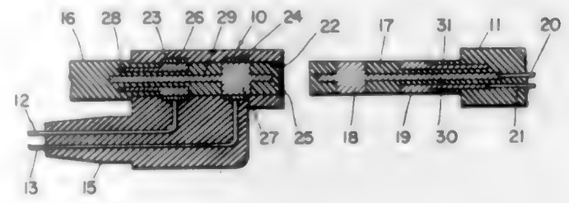
3,375,479
CONTINUOUS TURNING SLIP RING ASSEMBLY
Estel G. Lowe, 7803 Milton St., Huntsville, Ala. 35802
Filed Nov. 2, 1965, Ser. No. 506,137
8 Claims. (Cl. 339—5)



The invention relates to a slip ring assembly having inner and outer peripheral surfaces which serve as electrical contacts for brushes. One set of brushes is located between a central normally stationary part and the slip rings so that the brushes engage the inner surface of the slip rings. The other set of brushes is located between an oscillating part and the slip rings so that the brushes engage the outer surface of the latter.

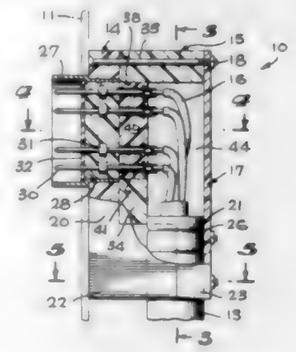
3,375,480
BLIND PLUG FOR USE WITH A FLUID PROOF CONNECTOR
Arthur L. Nelson, San Diego, Calif., assignor to Winsco Instruments & Controls Company, Inc., a corporation of California
Filed Dec. 15, 1965, Ser. No. 513,974
3 Claims. (Cl. 339—38)

This disclosure relates to a blind plug for underwater use with fluid proof connectors such as shown in United States Patent 3,277,424. This connector comprises a cylindrical socket body open at both ends and arranged to receive a power plug in one end in the form of a cylindrical plug body. The plug body and interior cylindrical wall of the socket include contact means which will engage when the cylindrical plug is received within one end of the cylindrical socket. The fit is snug so as to provide a fluid proof connection. The blind plug on the other hand is receivable in the other end of the socket when the power plug is not being used and the blind plug includes contact means for engaging the socket contact



but the contact means in the blind plug terminates wholly within the plug so that no electrical energy can pass from the blind plug. With the blind plug inserted in the socket, the power plug may be inserted in the one end and engage the blind plug to urge it out the other end as the power plug is positioned in the socket such that a complete fluid proof connection can be effected without ever exposing the socket contact to the fluid environment.

3,375,481
CABLE CONNECTOR
Roger M. Parnell, Huachuca City, Ariz., assignor to The Bunker-Ramo Corporation, Stamford, Conn.
Filed Apr. 1, 1966, Ser. No. 539,411
6 Claims. (Cl. 339—94)

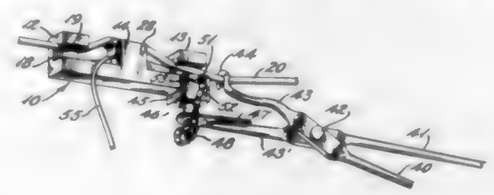


A connector useful for connecting the lead ends of a multilead cable to a socket receptacle. The connector is comprised of a pin member having a wall supporting a plurality of contact elements extending therethrough. The first ends of the contact elements are intended to be received in the socket receptacle. The second ends of the contact elements extend into open first ends of tubular contacts in a socket member. The second ends of the tubular contacts are connected to the cable lead ends, as by soldering. A cover member is fastened to the pin member with the socket member and cable being clamped therebetween.

3,375,482
TELEPHONE LINE CONNECTOR
Charles A. Cole, Rte. 4, Box N–156, Hattiesburg, Miss. 39401
Filed Mar. 31, 1966, Ser. No. 539,125
7 Claims. (Cl. 339—109)

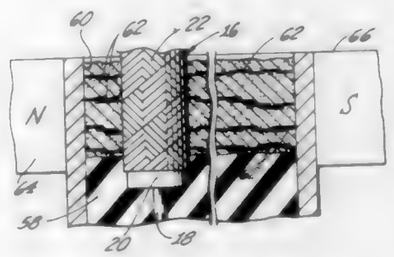
1. A telephone line clamp comprising a body member, said body member having central and end portions, said end portions each forming a generally hook shaped

recess, said recesses being substantially parallel and substantially in alignment with each other, whereby their bights lie generally along a common axis and face in the same direction, a clamping member mounted on said central portion and having a recess which faces generally in the direction opposite to that of said bights, said clamping member recess being positioned outwardly of said body member with respect to said bights, whereby a conductor line which passes through said bights may have its intermediate portion offset for reception in the



recess of the clamping member, and whereby tension in the conductor line which is so positioned causes the intermediate portion of the conductor line to transmit force against said clamping member, said clamping member being mounted for movement outwardly of said body member to permit insertion of a conductor lead between said clamping member and said central portion, said conductor lead retained in such position when a conductor line under tension is engaged by said bights and said clamping member recess.

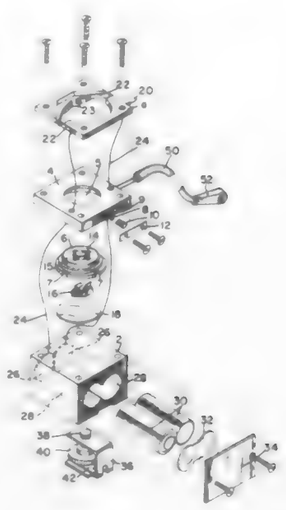
3,375,483
ELECTRICAL CONNECTOR
John J. Phillips, Rolling Hills, Calif., assignor to Gray & Huleguard, Santa Monica, Calif., a corporation of California
Filed Aug. 3, 1966, Ser. No. 569,938
3 Claims. (Cl. 339—143)



The present invention relates to electrical connectors for use with a cable having electrically conductive shielding that must be grounded. In the embodimnet of the invention disclosed the space where the cable or bundle of wires enters the connector is filled with a sealing mixture containing a large number of magnetically conductve particles. A magnetic field is maintained across the sealing mixture while it hardens whereby the magnetic particles are attracted together to form a large number of electrically conductive paths which extend between the shielding and the connector. After the sealing mixture has hardened all of the particles are maintained bonded into the conducting relationship.

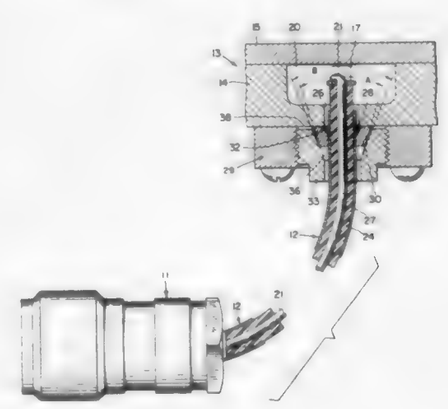
3,375,484
PHOTOFLASH ADAPTER
Ronald G. Petts, Williamsport, and George W. Parsons, Hughesville, and William T. Colville, Williamsport, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,402
2 Claims. (Cl. 339—147)

An adapter for a flashcube in which a flashcube socket is rotatably disposed within a socket retainer mounted on the top face of a base member and a face plate carrying electrical contacts is mounted on the socket retainer



with the electrical contacts overlying the socket retainer and being disposed adjacent to the socket.

3,375,485
COAXIAL CABLE CONNECTOR
John C. Donohue, Hanover, and Richard A. Ashburn, Glen Burnie, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 16, 1965, Ser. No. 440,336
2 Claims. (Cl. 339—177)



This is an apparatus for electrically connecting a coaxial cable to a strip transmission line located within a hollow casing composed of electrically conductive material. The cable is secured to the casing by a split conical clamping ring forced against the outer conductor of the cable by a nut having a threaded exterior and a conical interior recess.

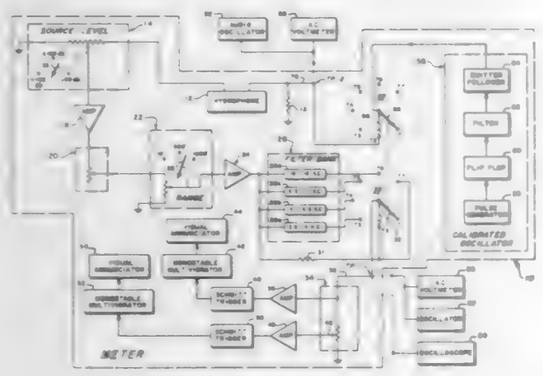
3,375,486
ELECTRICAL MALE CONNECTOR
John C. Clayton, Morristown, N.J., assignor to Aircraft Radio Corporation, Boonton, N.J., a corporation of New Jersey
Filed Dec. 7, 1965, Ser. No. 512,070
3 Claims. (Cl. 339—252)

This invention relates to a male electrical connector connector is fabricated of a single piece of resilient elec-

trically conductive metal. Use of a non-conductive center for use in conjunction with printed circuit boards. The

pin provides structural rigidity and allows easy insertion and withdrawal of the connector from a circuit board.

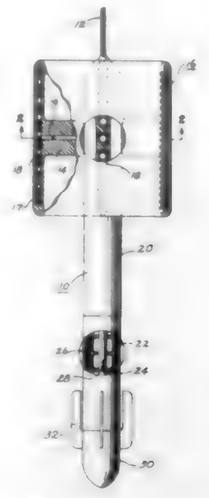
3,375,487
RADIATED POWER LEVEL METER
Oliver H. McDaniel and James H. Prout, State College, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 24, 1966, Ser. No. 560,931
17 Claims. (Cl. 340—5)



A meter for measuring the radiated power level at the source of energy radiated by a remotely located sonar transducer including a hydrophone, a pair of threshold circuits having respective precalibrated threshold levels for driving respective indicators in response to an input signal, a range potentiometer for attenuating the hydrophone output signal in accordance with the spacing of the hydrophone from the transducer, and a source level potentiometer having an associated dial calibrated in units of radiated power level which is adjusted until the hydrophone output signal level is additionally attenuated a sufficient degree so that the level of the input signal applied to the threshold circuits lies intermediate the precalibrated threshold levels.

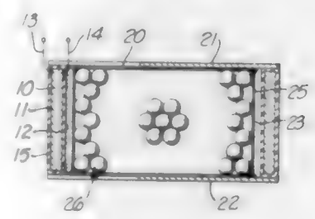
3,375,488
UNDERWATER TRANSDUCER CONFIGURATION
Robert M. Bridges, Northridge, and Wilbur Nerenstein, North Hollywood, Calif., assignors to The Bendix Corporation, a corporation of Delaware
Filed Nov. 3, 1966, Ser. No. 591,830
8 Claims. (Cl. 340—8)

An underwater transducer configured for high speed descent into the water and ascent out of the water having an elongated cylindrical body with fins at its lower end, a transmitter section near the fins containing a number of axially arranged transducer elements, a large diameter cylindrical receiver section fastened to the body



near its upper end by means of hollow struts, the receiver section containing a plurality of receiving transducer elements arranged and connected electrically in axially-aligned groups, and electronic signal processing means in said body.

3,375,489
PRESSURE COMPENSATED TRANSDUCER
Harry W. Kompanek, 153 Rametto Road, Santa Barbara, Calif. 93103
Filed Mar. 14, 1966, Ser. No. 534,022
12 Claims. (Cl. 340—11)

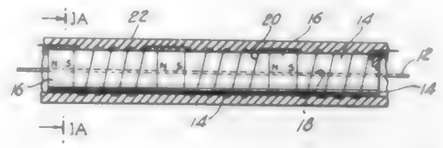


A transducer particularly suited for operation in deep water. A ring of piezoelectric or magnetostrictive material with a core disposed within and spaced from the ring permitting exposure of both faces of the ring to the water, with the core having a sound velocity lower than that of the water. An alternative structure utilizing a disc with both faces exposed to the water and with a core spaced from one face. Another alternative structure utilizing a piece of foam rubber as the core, with the foam rubber attached to one face of the ring or disc and with the other surfaces of the rubber exposed to the water.

3,375,490
FLEXIBLE CABLELIKE TRANSDUCER
Steven A. Stubblefield and Robert L. Douglas, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 17, 1965, Ser. No. 508,296
10 Claims. (Cl. 340—17)

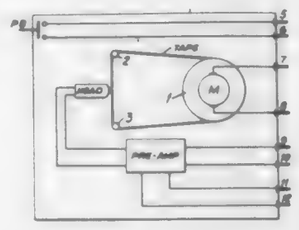
1. A flexible elongated cablelike transducer of substantially uniform outer circumference along its length for responding to seismic signals comprising, a flexible central stress member, permanent bi-polar magnetic elements and

resilient spacers strung alternately on said central stress member, a continuous electrical conducting means passing through the magnetic field of each of said permanent magnets at substantially right angles thereto and forming a coil about said magnetic elements and spacers, seismic signal responsive means for providing relative motion between said magnetic field and said electrical conducting



means passing therethrough in response to a seismic signal thereby inducing a voltage in said winding indicative of said seismic signal, and a resilient outer sheath surrounding said central stress member, magnetic elements, resilient spacers, and electrical conducting means, said outer sheath extending along the entire length of said cablelike transducer.

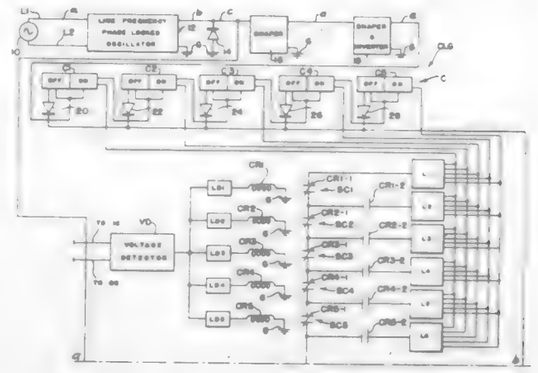
3,375,491
ELEVATOR CAR ANNOUNCING SYSTEM
Stephen A. Hornung, Louisville, Ky., Lloyd L. Riggs, New Albany, N.Y., and James H. Stichweh, Louisville, Ky., assignors to K. M. White Company, Inc., Louisville, Ky., a corporation of Kentucky
Filed June 7, 1965, Ser. No. 461,951
10 Claims. (Cl. 340—19)



An elevator car announcing system including an array of message storage modules each including an endless storage media initiated by an elevator command to extract the stored message. The module controls its own output and resets the initiating circuit by virtue of a superposed 40 cycle tone on the message. A unique ladder network of relays insures that remaining circuits are disenabled during the functioning of each elevator command.

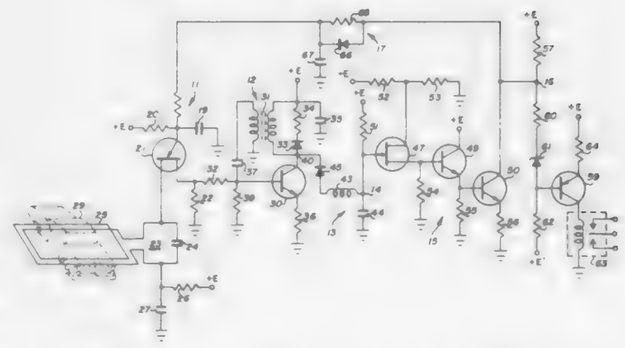
3,375,492
FREQUENCY GENERATOR
Lawrence E. Calsyn, East Moline, Ill., and Robert W. Lewis, St. Louis, Mo., assignors to E. W. Bliss Company, Canton, Ohio
Filed Sept. 1, 1964, Ser. No. 393,657
9 Claims. (Cl. 340—35)

A frequency generator which is particularly applicable for use as a portion of a master traffic controller for providing cycle length determining signals for application to local traffic controllers. To this end, there is provided a frequency signal generating means, such as a phase locked oscillator, connected to a commercial alternating current power supply source, for continuously generating a frequency signal having a fixed frequency synchronized with the line frequency of the commercial power supply source. A counter serves to continously count the pulsations of the generated frequency signal and provide an output count signal representative of the number of pulsations counted. A count selector serves to pass a predetermined count signal which is representative of a predetermined count of pulsations of the frequency signal. A bistable device, such as a bistable multivibrator circuit, is changed from one stable state to the other by successive predetermined count signals. On-off switching means, such as a silicon controlled rectifier, is alternately on and off in accordance with the stable condi-



tions of the bistable device. The on-off switching means serves to alternately connect and disconnect an output circuit with a source of energy so that the output circuit carries a signal having a frequency which is dependent on the predetermined count signal, and which frequency is synchronized with the line frequency of the commercial power source.

3,375,493
INDUCTIVE LOOP PRESENCE DETECTOR
Irving M. Gottlieb, Menlo Park, Calif., assignor to General Precision Systems Inc., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,201
6 Claims. (Cl. 340—38)

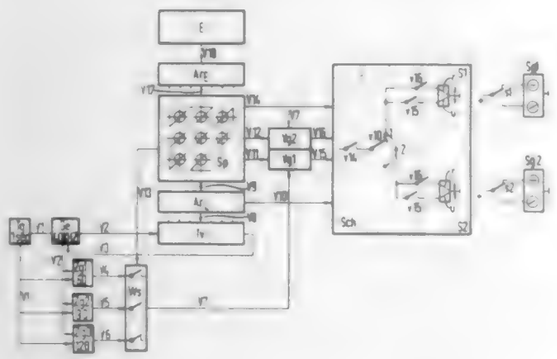


1. A system for detecting the presence of vehicles comprising an oscillator having an inductive element positioned in spaced relation with a path for vehicles, a monostable circuit coupled to the oscillator for generating constant duration pulses having a repetition rate determined by the oscillator, an integrating circuit coupled to the monostable circuit for generating a direct potential level corresponding to the repetition rate of the constant duration pulses, an output means coupled to the integrating circuit for generating an output signal responsive to the direct potential level.

3,375,494
CONTROL UNITS FOR PROGRAMMED OPERATION OF TRAFFIC SIGNALS
Jans Piening, Soecking, Bavaria, and Walter Wimmer, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany
Filed Dec. 22, 1964, Ser. No. 420,367
4 Claims. (Cl. 340—40)

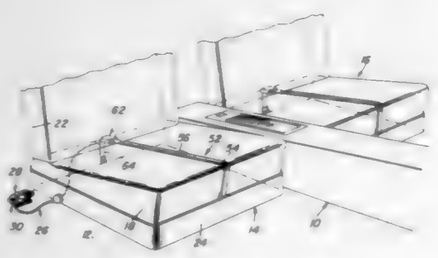
A traffic signal unit for programming the operation of a plurality of sets of traffic signals having lamps con-

trolled by lamp switches, comprising a storage register having storage elements disposed in a plurality of groups which form respective storage cells for storing switching programmes for the lamps of the individual signal sets, a pulse generator, at least one pulse counter operatively connected to said generator for counting pulses from said pulse generator, means for effecting a sampling of each cell once between successive pulses from such pulse counter, a comparator operatively connected to such a



cooperable pulse counter and said register for comparing the information in each sampled cell with the pulse count contained such cooperable pulse counter at the time when that cell is sampled, and means for transmitting a signal to control the actuation of lamp switches of the traffic signal sets when the pulse count applied to the comparator corresponds to the sampled information applied to the comparator.

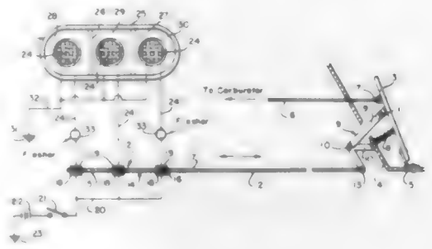
3,375,495
SEATBELT ALARM SYSTEM
Joel A. Burns, 4201 Broadmoor NE., Albuquerque, N. Mex. 87108
Filed Feb. 12, 1965, Ser. No. 432,126
6 Claims. (Cl. 340—52)



A seatbelt alarm system for a motor vehicle operable to render an alarm in response to positioning of the seat belt assemblies of the vehicle in other than the prescribed operative positions but only when the associated seat is occupied by a person.

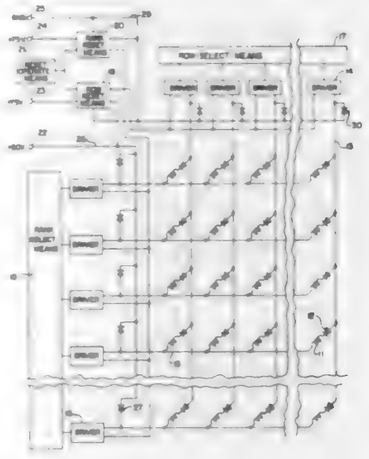
3,375,496
DECELERATION INDICATOR FOR MOTOR VEHICLES
Anthony J. Antunovic, Lake Drive W., Inverness, Fla. 32650
Filed Aug. 23, 1965, Ser. No. 481,502
4 Claims. (Cl. 340—72)

A signalling device for motor vehicles incorporated in an electrical circuit adapted to be energized and display a warning signal when the operator of the vehicle removes his foot from the accelerator pedal, said signalling device being mounted at the rear of the vehicle in a position to be readily visible to the driver of a following vehicle; and



wherein the electrical circuit associated with the device is independent of the conventional warning signals with which the vehicle is equipped.

3,375,497
MATRIX CONTROL CIRCUITRY USING GATE CONTROLLED UNIDIRECTIONAL SIGNALLING DEVICES
Lowery K. Jones, Jr., and James D. Turner, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Apr. 27, 1964, Ser. No. 362,854
6 Claims. (Cl. 340—166)

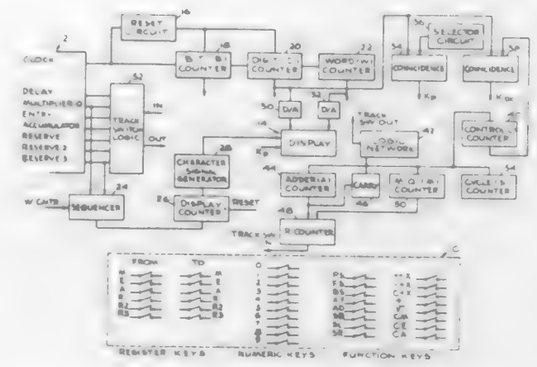


An apparatus for energizing selected ones of a plurality of solenoids arranged in a matrix formation. Energization of a selected solenoid is controlled by two coordinate groups of switching circuits, with one switching circuit in each group being operated to complete an energizing path for a selected solenoid. Each switching circuit includes a unidirectional signal translating device, such as a silicon controlled rectifier, which may be rendered conducting by means of a selection circuit, one of which is provided for each coordinate group of switching circuits. Each switching circuit is subsequently rendered non-conducting by a reset circuit to terminate energization of the selected solenoid.

3,375,498
CALCULATOR APPARATUS FOR DISTINGUISHING MEANINGFUL DIGITS
Thomas J. Scuitto, Malibu, and Matthew A. Alexander, Santa Monica, Calif., assignors to Wyle Laboratories, El Segundo, Calif., a corporation of California
Filed May 18, 1964, Ser. No. 376,606
7 Claims. (Cl. 340—172.5)

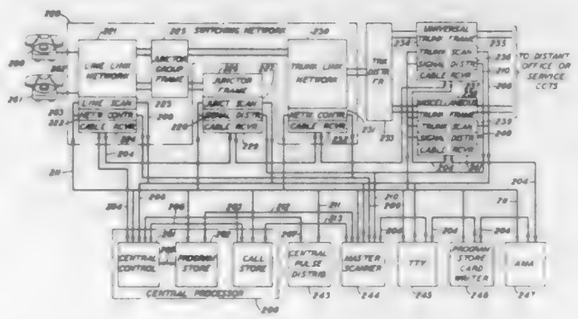
A calculating apparatus of the type having output display means and including means for visually distinguishing meaningful digits from non-meaningful digits. The apparatus includes means for automatically editing all of the

numbers stored in the various registers after the performance of most operations. Editing is comprised of examining each of the numbers and determining whether or not each digit thereof is meaningful. A tag is then associated with each of the meaningful digits. Any non-zero



digit is considered meaningful. Also, all digits positioned between the most significant digit in a number and the decimal point are considered meaningful and likewise all digits positioned between the least significant digit and the decimal point are considered meaningful.

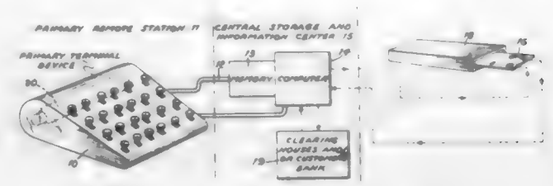
3,375,499
TELEPHONE SWITCHING SYSTEM CONTROL AND MEMORY APPARATUS ORGANIZATION
Hugo Ghiron, Colts Neck, John A. Harr, Fair Haven, and Nicholas A. Martellotto, Red Bank, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 14, 1964, Ser. No. 403,845
5 Claims. (Cl. 340—172.5)



A program controlled telephone switching system which employs a generic program is disclosed. The use of a generic program facilitates the production of programs for telephone offices of a defined class and facilitates the testing, installation and growth of such offices. The physical organization of the program and the system data in memory at fixed and variable memory locations is illustrated.

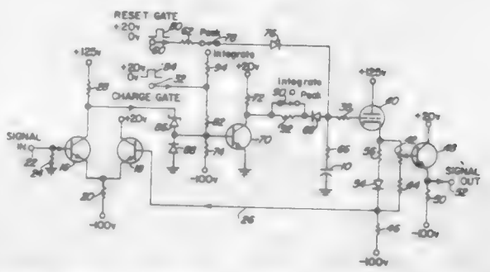
3,375,500
AUTOMATED ACCOUNTING SYSTEM
Peter H. Fowler, Midland Park, N.J., and William S. Litchman, New York, N.Y., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Aug. 24, 1964, Ser. No. 391,494
17 Claims. (Cl. 340—172.5)

An automated data handling system having a centralized storage and computation center has at least one primary remote terminal point having means for transmitting to said storage and computation center infor-



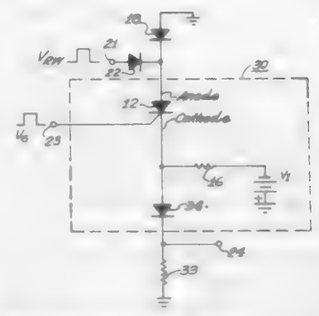
mation in the form of "tone" signals and means for registering said information in said storage and computation centers at selected times.

3,375,501
PEAK MEMORY CIRCUIT EMPLOYING COMPARATOR FOR CONTROLLING VOLTAGE OF STORAGE CAPACITOR
Samuel R. McCutcheon, Palo Alto, Calif., and Robert E. Webb, Portland, Oreg., assignors to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Mar. 23, 1964, Ser. No. 354,019
8 Claims. (Cl. 340—173)



The subject matter of the present invention relates generally to circuits for storing electrical signal voltages, and in particular to memory circuits which may be operated as a peak memory to store maximum signal voltages. The present peak memory circuit employs a comparator for comparing the input signal voltage with a feedback reference voltage corresponding to the voltage on a storage capacitor to switch a gate in order to charge the storage capacitor from a source of D.C. supply voltage when such input signal voltage exceeds such reference voltage until the capacitor voltage is substantially equal to the maximum input signal voltage.

3,375,502
DYNAMIC MEMORY USING CONTROLLED SEMICONDUCTORS
Richard P. Shively, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Continuation-in-part of application Ser. No. 410,077, Nov. 10, 1964. This application Mar. 1, 1965, Ser. No. 436,002
33 Claims. (Cl. 340—173)



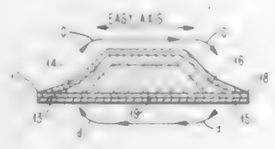
A dynamic memory device using semiconductor devices, such as controlled rectifiers, in memory circuits

wherein the content of a memory cell is signified by the impedance state of a semiconductor, including destructive or non-destructive readout circuit arrangements.

3,375,503
MAGNETOSTATICALLY COUPLED MAGNETIC THIN FILM DEVICES

Bruce I. Bertelsen, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 13, 1963, Ser. No. 308,868
3 Claims. (Cl. 340—174)

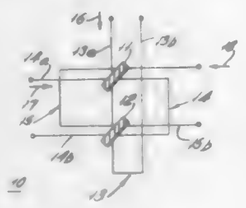


A multi-layer magnetic thin film device is provided exhibiting essentially closed flux path characteristics. Such a device has at least two separate magnetic layers, one of which has sloping sections, adjacent to a section parallel to the other film, which tends to approach and touch the other film such as to minimize the gap between films.

3,375,504
SYSTEM FOR INTERROGATING AND DETECTING THE STORED INFORMATION OF MAGNETIC CORES

Hiroshi Ihara, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Jan. 23, 1964, Ser. No. 339,772
Claims priority, application Japan, Jan. 29, 1963, 38/3,978
10 Claims. (Cl. 340—174)



This invention teaches a memory system having comparison interrogation capability performed in such a manner as to provide non-destructive readout of the memory devices.

Each bit of a word stored in the memory system is stored in a memory means which is comprised of two magnetic cores per stored bit. The cores preferably have similar substantially square hysteresis characteristics, but the squareness of the characteristic and the identical characteristics for each pair of cores is not an absolute necessity toward successful operation of each bit storage means. In order to store a first binary state a first of the cores is driven to a magnetization state which is relatively close to a zero magnetization state and in any case is appreciably less than the positive saturation level of the core. The remaining core of the two core per bit memory is driven to a negative magnetization state which is quite close to the negative saturation state of the core. An interrogation winding is provided which is threaded through said cores in the same direction so that a unidirectional current passing through said drive winding will drive both cores in the same sense. A readout winding is threaded through both cores in opposite directions so that any change in state of the magnetic cores which are being driven in the same sense by a current in the drive winding will be inductively coupled to the sense winding in opposite directions so that some portion of one of the induced currents will operate to cancel the other induced current as a result of a change of state in the two magnetic cores.

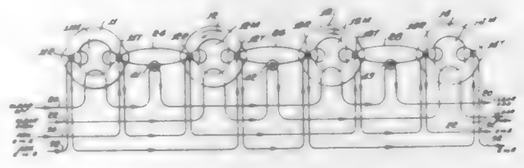
In order to interrogate the two core per bit memory and establish whether a comparison or lack of comparison exists between the bit in memory and a bit in an external source, a single cycle sinusoidally varying signal is applied to the drive or interrogation winding. The state of the external bit is identified by the magnitude and direction of the sinusoidal one cycle current pulse. For example, a first binary state is represented by the pulse initially going positive at the beginning of the one cycle pulse from a zero reference level. The opposite binary state is represented by the leading edge of the pulse initially going negative. The cores of the two core per bit storage means can likewise be altered from the manner described above to represent the other bit state by reversing the magnetization states set forth above.

If comparison exists between the state of the stored bit and the external bit the sense winding will generate a single cycle sinusoidally varying pulse which is substantially in phase with the interrogating drive pulse. If the stored bit and external bit are of differing binary states the single cycle sinusoidally varying pulse generated in the sense winding will be substantially 180° out of phase with the interrogation driving pulse.

3,375,505
MAGNETIC FLUX TRANSFER IN CORE SYSTEMS

Douglas C. Engelbart, Palo Alto, Calif., assignor to AMP Incorporated, Harrisburg, Pa., a corporation of New Jersey

Original application Oct. 30, 1959, Ser. No. 849,776, now Patent No. 3,163,854, dated Dec. 29, 1964. Divided and this application June 9, 1964, Ser. No. 373,763
4 Claims. (Cl. 340—174)



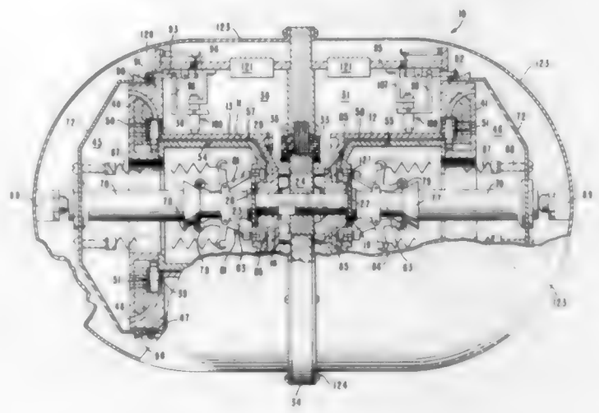
A magnetic core shift register is described in which multi-aperture magnetic cores are employed. Each of these cores has the cross-sectional area of the magnetic core material adjacent its minor apertures which is larger than the cross-sectional area of the magnetic material around the main aperture of the multi-aperture core.

3,375,506
MAGNETIC DRUM ASSEMBLY WITH AIR BEARINGS

Lawrence Bruehl, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 15, 1961, Ser. No. 117,461
18 Claims. (Cl. 340—174.1)

1. A magnetic drum assembly comprising a generally cylindrical magnetic drum having a magnetizable outer periphery, a support member nestingly received in closely spaced relation within said magnetic drum to define a pair of end spaces and a longitudinal generally circumferential space between said support member and said magnetic drum, said end spaces being positioned at the ends of and extending generally normally to said longitudinal space, a high pressure chamber, impeller means mounted on and rotatable with said magnetic drum, said impeller



means forcing fluid into said high pressure chamber when said magnetic drum is rotated, and passageway means interconnecting said high pressure chamber and said spaces to provide longitudinal and end thrust fluid bearings for supporting said magnetic drum from said support member.

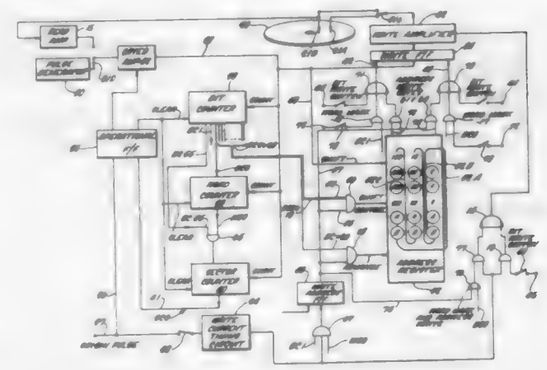
3,375,507
INFORMATION ADDRESS RECORDING AND RETRIEVAL SYSTEM

Ralph A. Gleim, Pasadena, Erwin A. Hauck, Arcadia, and Richard C. Simonsen, South Pasadena, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Continuation-in-part of application Ser. No. 306,365, Sept. 3, 1963. This application Mar. 13, 1967, Ser. No. 649,752
40 Claims. (Cl. 340—174.1)

A method for recording and retrieving data from a storage means which may conveniently be a disk of a disk file computer is disclosed which comprises the steps of assigning one portion of the storage means as an information portion, in which sector of words are to be written or read. A separate clock portion of the storage means is utilized to record signals in one track which mark the location of all of the words in a sector. Further recorded in the same track with the word mark signals is an absolute address signal which follows the word mark signal immediately preceding the word mark signal of the first word of the record identified by the absolute address signal. Also disclosed is a memory storage means which is formated by the described method. In conjunction with the memory disk is an information storage and retrieval system which comprises means for addressing the memory with the absolute address of a record to be located; means for recovering from the clock portion the absolute address of the addressed record together with means for recovering the word mark signals following the absolute address. When the addressed address and the recovered address are the same, a priming condition is applied to an information gate which is connected to a read-write head located at the information portion of the memory disk. When interlaced words of information are stored in the sectors of a memory disk in accordance with this invention, the gate is maintained in a primed condition and responds to the next word mark recovered from the clock portion of the memory disk by transferring the first information word relative to the memory disk. Means are disclosed for opening and closing the continually primed gate once for every other information word of the interlaced sector. Means are also disclosed for reading absolute addresses during the word intervals in which information is not being transferred relative to the memory disk.

Also disclosed is a method of recording and retrieving data from a storage means such as a memory disk in which the same clock and information portions are assigned and wherein the information words of one record successively follow each other in an information sector. Recorded in one track of a clock portion of the memory disk are marking signals which mark in advance the location of the first information word in each record, each marking signal is followed by an absolute address signal in the same track with the marking signal which absolute address signal identifies the next upcoming record. The end of the address signal is synchronized with the end of the record immediately preceding the next upcoming record which is the record identified by the address. A memory disk having a format in accordance



with the described method for successive word sectors is disclosed together with an associated information recording and retrieval information system in which means are disclosed for receiving an address of a record to be located in the disk, comparing the sought after address with the recovered addresses, and applying a priming signal to an information gate connected to a read-write head when both addresses are the same. Sensing means are associated with the address recovery means for sensing the end of the absolute address signal and in response thereto enable the previously primed gate to transfer the first and all subsequent words of the located record relative to the memory disk.

Information of the record to be translated relative to the memory disk is monitored by a second sensing means which is operative in response to the next marking signal in the clock portion and to the end of the record to be translated relative to the information portion for stopping information transfer and for returning the information system to an address searching mode of operation.

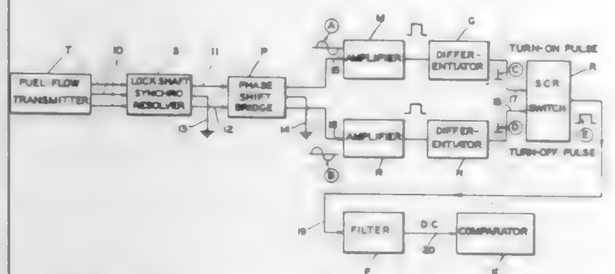
3,375,508
MEANS FOR CONVERTING A SYNCHRO SHAFT ANGLE TO A LINEAR DIRECT CURRENT SIGNAL

Robert J. Molnar, New York, and Walter Parfomak, Brooklyn, N.Y., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Dec. 31, 1964, Ser. No. 422,766
19 Claims. (Cl. 340—198)

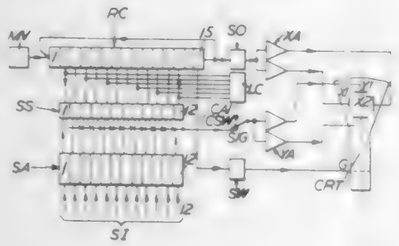
A converter for converting two alternating current voltages phase separated in accordance with the angular position of a synchro shaft to a direct current output which varies linearly in accordance with the phase separation of the alternating current signals. The converter includes means for converting the alternating current signals to pulses time separated in accordance with the phase sepa-

ration of the signals for controlling conduction of a silicon controlled rectifier in the interval between the pulses.



A filter connected to the silicon controlled rectifier provides a direct current output which varies linearly with the phase separation of the alternating current signals.

3,375,509
PLURAL PARAMETERS MONITOR DISPLAYING INFORMATION SIGNALS AS A BAR GRAPH ON A CATHODE-RAY TUBE
Alfred John Mullarkey, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 413,017
Claims priority, application Great Britain, Dec. 3, 1963, 47,659/63
10 Claims. (Cl. 340—213)

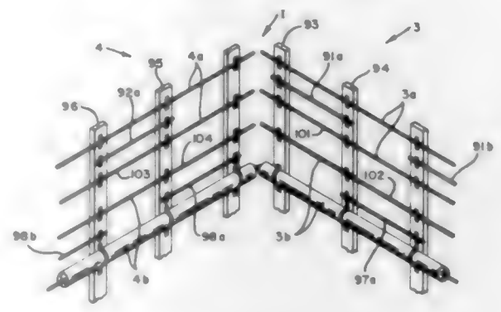


A number of measurements being monitored are displayed as horizontal line segments on a cathode-ray tube—a vertical display control circuit disposes each line segment at the same vertical location when the respective measurement is of correct or predetermined value thereby forming a straight line. Deviations from a required measurement value immediately stand out because of its displacement from the straight line.

3,375,510
MEANS FOR INDICATING THE PASSAGE OF A FAULT CURRENT ALONG A CONDUCTOR
Brian Edward Pitches, Balerno, Midlothian, Scotland, assignor to Ferranti, Limited, Lancashire, England, a company of Great Britain and Northern Ireland
Filed Dec. 29, 1964, Ser. No. 421,944
Claims priority, application Great Britain, Jan. 10, 1964, 1,144/64
12 Claims. (Cl. 340—253)

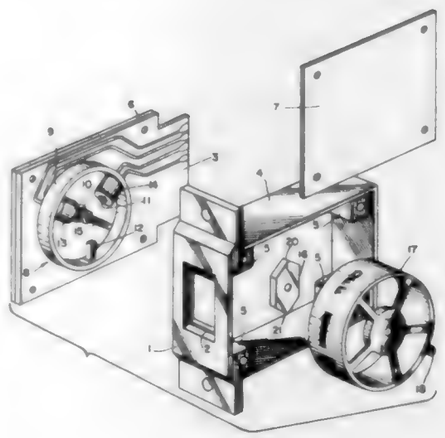
A fault indicating apparatus is adapted to be mounted to a conductor of an electric power line such that a vane of magnetic material secured to a rotatable spindle responds to the magnetic lines of force of the current passing through the conductor. The vane is initially constrained in a position which is not tangential to the magnetic lines of force passing through the pivotal axis of the vane when a normal electric current passes along the conductor. In the presence of a fault current, the vane is rotated to a position which is substantially tangential to the magnetic lines of force of the current.

3,375,511
TRANSMISSION LINE INTRUDER DETECTION SYSTEM
Melvin E. Trimble, San Jose, Craig G. Roberts, Cupertino, and Bernard S. Golosman, Palo Alto, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 24, 1965, Ser. No. 466,612
22 Claims. (Cl. 340—258)



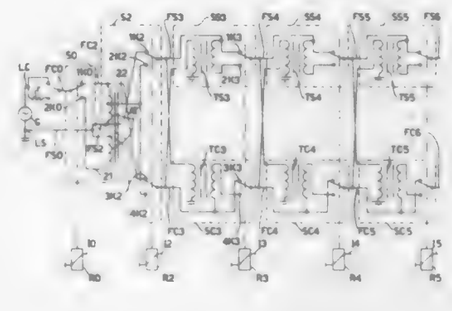
1. In a transmission line perimeter intruder detection system, a transmission line comprising
a pair of stacked rigid conductors bounding an area to be protected,
a plurality of posts supporting said conductors, said posts being spaced a quarter wavelength apart at a predetermined frequency,
a plurality of barrier members located between said conductors, said barrier members being secured to adjacent support posts and extending between alternate spaces between said posts, and
an impedance connected between said conductors at one end thereof, said impedance having a value substantially equal to the characteristic impedance of said transmission line.

3,375,512
POWER-OFF INDICATOR
John A. Watkins, Cheshire, and Elliot R. Laug, Hamden, Conn., assignors to Patwin, Inc., a corporation of Connecticut
Filed Mar. 19, 1965, Ser. No. 441,193
4 Claims. (Cl. 340—373)



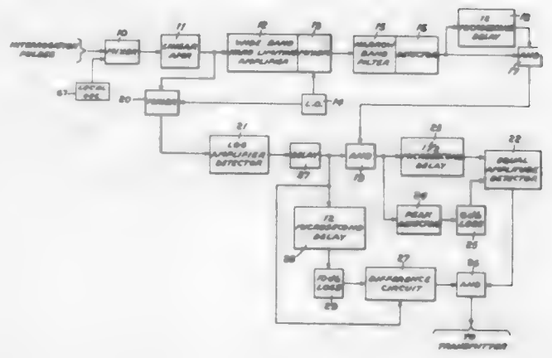
1. An indicator comprising:
(1) a panel having a window for displaying data;
(2) a rotor having a permanent magnet and a drum bearing symbols on its periphery, the permanent magnet having salient North and South magnetic poles, the drum being positioned to present the symbols in the window upon rotation of the rotor;
(3) a stator having a ferromagnetic anular core carrying a first inwardly protruding radial pole and a plurality of other inwardly protruding radial poles that are symmetrical with respect to the first radial pole, the other radial poles being secured within a 180° segment of the core and the first radial pole protruding from the opposite 180° core segment, the stator further including a plurality of windings arranged to permit each winding to be separately energized by an electrical signal, each winding being mounted upon a different one of the other radial poles; and
(4) means supporting the rotor so that the permanent magnet is within the enclosure of the annular core.

3,375,513
DIGITAL-TO-ANALOG CONVERTER
Joseph Elbling, Ivrea, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Mar. 5, 1965, Ser. No. 437,370
Claims priority, application Italy, Mar. 12, 1964, 5,811/64
5 Claims. (Cl. 340—347)



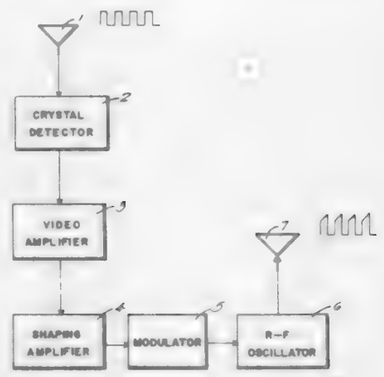
1. A digital-to-analog converter comprising:
(a) *n* input terminals for receiving a group of *n* bits representing in pure binary code a number to be converted, said number representing an angle equal to the sum of partial angles represented by said bits respectively,
(b) an ordered group of *n* sine stages associated with said input terminals respectively and each one having an input and an output and including transformer means,
(c) an ordered group of *n* cosine stages associated with said input terminals respectively and each one having an input and an output and including transformer means,
(d) means for connecting the input of said sine and cosine stage to the output of the next preceding sine and cosine stage respectively,
(e) a relay connected to each input terminal for being energized according to the value of the bit signal received thereon,
(f) switching means in said sine and cosine stage operated by said relay and modifying said transformer means for varying the impedance between the corresponding input and output an amount corresponding to the relevant partial angle,
(g) a sine output terminal and a cosine output terminal,
(h) a source of alternate current having a first and second output terminals,
(i) means for connecting the output of the last sine and cosine stage to said sine and cosine output terminal respectively,
(j) and means for connecting the input of the first sine and cosine stage to said first and second output terminals respectively.

3,375,514
RECEIVING STATION FOR RADIO NAVIGATION SYSTEM
Jesse S. Le Grand, Clifton, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Feb. 23, 1966, Ser. No. 529,462
10 Claims. (Cl. 343—6.5)



A receiver station for a radio navigation system such as TACAN having means for adjacent channel rejection, echo suppression and precision half-amplitude finding of an incoming pulse signal.

3,375,515
PULSED TRACKING RANGE RADAR DECEPTION SYSTEM
Eugene B. Novikoff, East Meadow, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 18, 1955, Ser. No. 502,252
2 Claims. (Cl. 343—6.8)

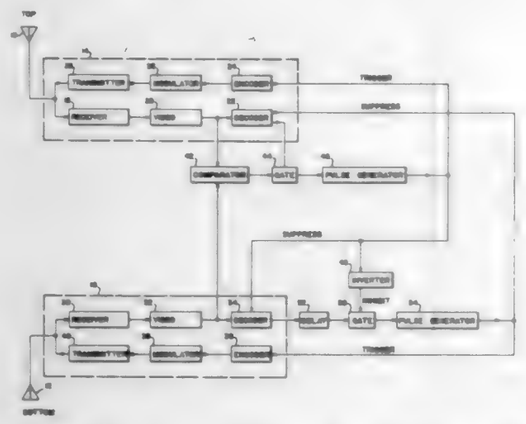


1. In a transponder combination including signal receiving, detecting and amplifying means, means for converting a received signal into a trapezoidal-shaped pulse having a leading edge that is greater in amplitude than the received signal and a trailing edge that is greater in amplitude than the leading edge; and means for transmitting said pulse toward the direction from which the received signal emanated.

3,375,516
DUAL ANTENNA SYSTEM FOR TRANSPONDER BEACON DEVICES

Gerald E. Hart, Washington, D.C., and Charles E. Quigley, Chevy Chase, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed May 26, 1967, Ser. No. 643,023
10 Claims. (Cl. 343—6.8)



Transponder system having dual antennas. Different switching arrangements whereby transponder response is through antenna selected on basis of intercepted signal strength.

3,375,517
PHASE-CHANGE RATE DETECTOR

Paul D. Rodgers and Bernard A. Beaulieu, Fort Wayne, Ind., assignors to International Telephone and Telegraph Corporation

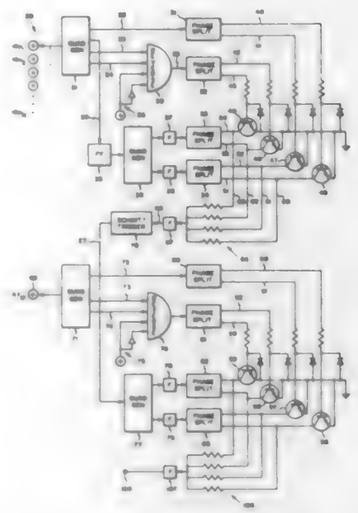
Filed Oct. 15, 1958, Ser. No. 767,480
15 Claims. (Cl. 343—8)

6. In a pulsed radar system, a range rate detecting circuit comprising: a first input circuit for receiving first pulses in time coincidence with the pulses transmitted by said system; a first oscillator having an output circuit for providing a first sinewave output signal, said first input circuit being coupled to said first oscillator whereby oscillation thereof is initiated responsive to each of said first pulses; a second input circuit for receiving the echo pulses received by said system; a second oscillator having an output circuit for providing a second sinewave output signal having approximately the same frequency as said first output signal, said second input circuit being coupled to said second oscillator whereby oscillation thereof is initiated responsive to each of said echo pulses; an adding circuit coupled to said first and second oscillator output circuits for adding said first and second output signals to provide a signal having its amplitude responsive to the phase relationship of said first and second output signals; a detector circuit coupled to said adding circuit for detecting the envelope of said last-named signal; and a filter circuit coupled to said detector whereby a range rate signal is provided having a frequency responsive to the rate of change of the time delay between said first and echo pulses.

3,375,518
DOPPLER SIGNAL SIMULATOR

Arthur H. Mader, Mount Vernon, and Stanley King, Larchmont, N.Y., assignors to General Precision Systems Inc., a corporation of Delaware

Filed Jan. 26, 1967, Ser. No. 611,853
9 Claims. (Cl. 343—17.7)



An apparatus for simulating the demodulated audio Doppler return resulting from an antenna signature comprising both lobe-switching and beam-switching characteristics. Preselecting a value for ν, the simulated Doppler shift frequency, and utilizing a novel cascaded single sideband modulation technique, discrete frequncies are initially generated at

$$\nu \pm \frac{p}{8}$$

with suitable circuit logic being provided to alternately switch these frequencies at the simulated lobing frequency rate. The discrete frequency products

$$\nu \pm \frac{p}{8}$$

are then used to modulate a simulated intermediate frequency f_{IF}, yielding

$$f_{IF} \pm \nu \pm \frac{p}{8}$$

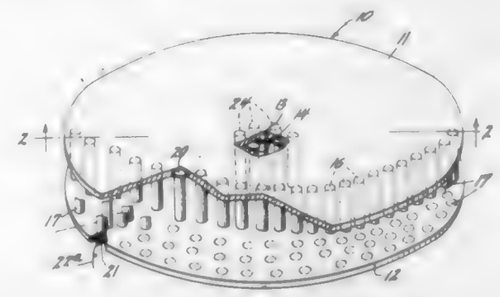
with the upper and lower frequencies surounding f_{IF} being alternately switched at a predetermined rate equal to the beam switching frequency being simulated. Finally, low-pass noise is wrapped around each discrete frequency by a balanced modulator to generate simulated audio Doppler spectra.

3,375,519
SCANNING REFLECTOR

Fred E. Burnham, Silver Spring, Md., assignor to Litton Industries of Maryland, Incorporated, College Park, Md.

Filed May 19, 1960, Ser. No. 30,136
22 Claims. (Cl. 343—100)

21. A two dimensional antenna beam focusing mechanism that is electrically variable both in configuration and in spatial orientation with respect to an antenna feed comprising: a support, a plurality of discrete members spaced apart from one another in fixed positions with respect to said support over a two dimensional region, each member being normally nonconducting and being individually energizable to become conducting, an antenna feed means fixed in position with respect to said support, and switch control means for selectively energizing different ones of

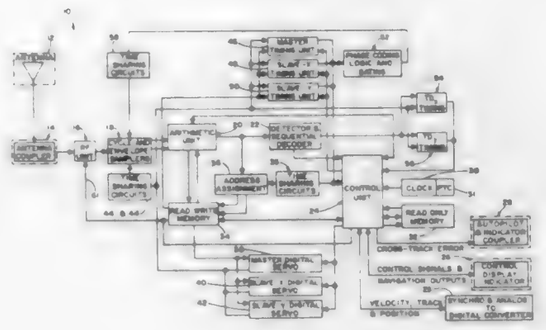


said members in preselected groups to variably synthesize both the shape of the antenna beam and the orientation of the beam in space.

3,375,520
INTEGRATED NAVIGATION RECEIVER-COMPUTER

Loren E. De Groot, Ann Arbor, and Joseph A. Parini, Arlan R. Van Koevering, William F. Roth, and Robert A. Racy, Grand Rapids, Mich., assignors to Lear Siegler, Inc.

Filed May 7, 1965, Ser. No. 454,033
24 Claims. (Cl. 343—103)

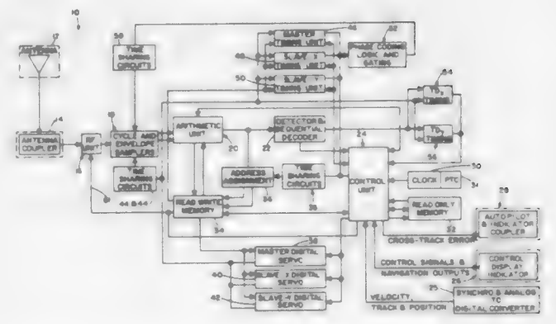


A unitary, integrated navigation instrument in which RF receiving and sampling operations and hyperbolic coordinate conversion operations are provided by time-sharing functional component groupings forming a sampler stage or section, an arithmetic unit, a memory, and a detector and sequential decoder section with a basic RF tuning unit and with each other through the operation of a control unit including timing and priority circuits, to form an instrument which does not have a separate receiver and a computer-converter, but which nonetheless performs the functions of both. Also, the computer operation so provided will compute the approximate maximum strength of signals to be initially received from a transmitting station complex, based upon present position information which is known to the pilot and inserted by him into the computer, to provide computed control signals to the receiver operation which initialize or preset the latter to greatly facilitate signal search and acquisition. Such control signals are connected into attenuation and gain-controlling circuitry in the RF tuner to effect signal attenuation and gain control in accordance with the expected strength of the signals for that particular initial position before the signals have actually been acquired. Also, the computer operation computes the approximate hyperbolic time differences to be expected for that particular approximated initial position and these are coupled to the component groupings in the instrument forming the timing units which under actual tracking conditions will continuously measure the true time differences from the signals actually received, to preset the time-measuring circuitry for faster and more accurate initial acquisition of the signals to be received.

3,375,521
DOPPLER COMPENSATED NAVIGATION SYSTEM

Loren E. De Groot, Ann Arbor, and Joseph A. Parini, Arlan R. Van Koevering, William F. Roth, and Robert A. Racy, Grand Rapids, Mich., assignors to Lear Siegler, Inc.

Filed May 7, 1965, Ser. No. 454,073
17 Claims. (Cl. 343—103)



A unitary, integrated navigation instrument in which RF receiving and sampling operations and hyperbolic coordinate conversion operations are provided by time-sharing functional component groupings forming a sampler stage or section, an arithmetic unit, a memory and a detector and sequential decoder section with a basic RF turning unit and with each other through the operation of a control unit including timing and priority circuits, to form an instrument which does not have a separate receiver and a computer-converter, but which nonetheless performs the functions of both. Also, the computer operation so provided will compute the approximate Doppler shift undergone by signals to be initially received from a transmitting station complex, based upon present position information which is known to the pilot and inserted by him into the computer, and upon present aircraft velocity information preferably inserted into the computer by a typical synchro and analog to digital converter, based on standard aircraft velocity-indicating instrumentation. The computed expected Doppler shift is the basis of computed control signals which are coupled to the receiver operation and used to initialize or preset the latter, to greatly facilitate signal search and acquisition. This initializing or presetting is preferably accomplished through digital servo loops wherein the reference signals for sampling the received waves are generated, by phase-shifting such reference signals. These digital servo loops are also used after signal search and acquisition has been completed, i.e., during tracking operations, to continuously reset or update the reference signals which dictate and control the sampling operation.

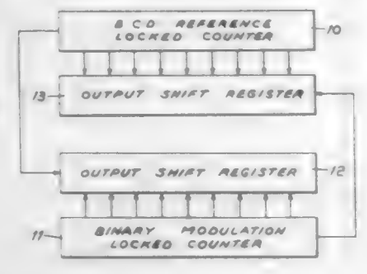
3,375,522
DIGITAL BEARING MEASURING SYSTEM

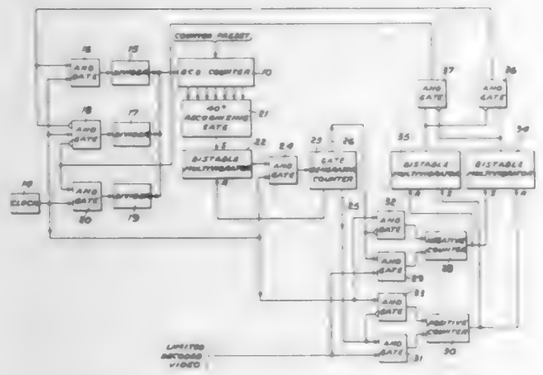
John B. Kennedy, Montville, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Feb. 1, 1966, Ser. No. 524,106
12 Claims. (Cl. 343—106)

A receiver for a digital Tacan bearing measuring sys-

tem in which two counters are frequency and phase locked to the reference bursts and the bearing envelope,





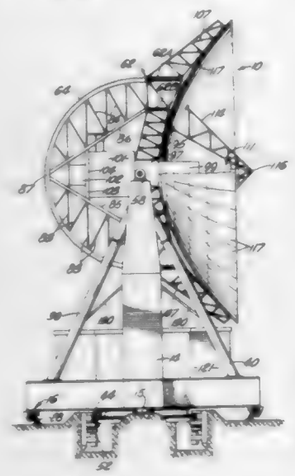
respectively, such that the count difference between the two counters continually represents bearing.

3,375,523

ANTENNA STRUCTURE MOVABLE IN AZIMUTH AND ELEVATION DIRECTIONS

Jerry Laibson, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California

Filed Oct. 16, 1964, Ser. No. 404,469
6 Claims. (Cl. 343—765)



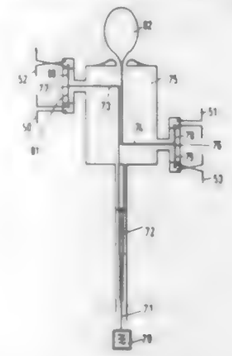
A parabolic reflector is mounted for movement in either azimuth or elevation or both simultaneously. The elevation axis is close to the center of gravity of the antenna system for minimizing inertial effects and drive requirements, with a single centrally located large sector elevation gear and other equipment being mounted as a part of the reflector counterweight. A circular gear is mounted on the turntable directly over a pit housing and is engaged by an azimuth drive system. The turntable supports a tripod type tower which allows adjustment in elevation of the reflector over a large range. The reflector alternatively instead of being supported on a tripod type tower may be supported on a yoke.

3,375,524

ANTENNA DISTRIBUTOR CIRCUIT FOR FOUR DIPOLES WITH ADJACENT DIPOLES IN PHASE QUADRATURE

Friedrich Künemund and Helmut Laub, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany

Filed Oct. 9, 1964, Ser. No. 402,752
Claims priority, application Germany, Oct. 10, 1963, S 87,802
5 Claims. (Cl. 343—799)



A distributor circuit for plural load devices fed in the rotary field of a polydirectional antenna having phase differences of 90° in the adjacent load devices including a 3-db directional coupler connected in the main feed line, and connecting lines of equal length for opposite load devices connected to distributor points from the directional coupler.

3,375,525

CENTER FED WIRE ANTENNA WITH SHEET REFLECTOR AND IMPEDANCE MATCHING COUPLING TO COAXIAL TRANSMISSION LINE

Ronald E. Fisk and Jose Perini, Syracuse, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 16, 1965, Ser. No. 464,442
9 Claims. (Cl. 343—863)

1. An antenna system comprising:
a pair of conductors each extending in opposite directions from a common region,
a reflector spaced in radiative relation with said pair of conductors to provide an antenna having a predetermined input impedance,
a transmission line for providing energization to said antenna having a characteristic impedance lower in value than the input impedance of said antenna,

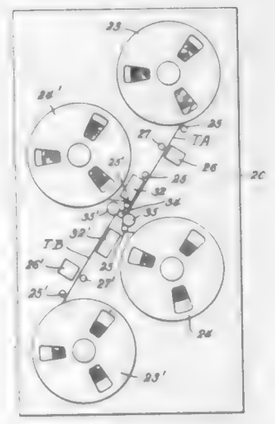
means for connecting one terminal of said transmission line to said reflector,
means for connecting the other terminal of said transmission line to adjacent ends of said radiative conductors in said common region,
said means including a conductor being so formed and in spaced relation to said reflector to form a transmission line tapered in impedance from said input impedance to said characteristic impedance.

3,375,526

FAULT RECORDER WITH DUAL MAGNETIC TAPES

Alexander Finlay, Springfield, Ill., assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware

Filed May 6, 1966, Ser. No. 548,188
17 Claims. (Cl. 346—44)



1. In a fault recording system for recording faults on electric power lines and the like, a first and a second magnetic tape, tape control means for continually enabling one of said tapes to record, a fault sensor for sensing faults on the electric power line including means for transmitting said fault to the effective one of said tapes for recording thereon, marking means for marking the location of the fault on said tape, fault sensing means responsive to said fault sensor to operate said marking means, a time code generator for providing coded signals representing at least the time of day, and fault time recorder means responsive to said fault sensor for enabling said generator means to provide the coded signals to the effective one of said tapes whenever a fault is being recorded.

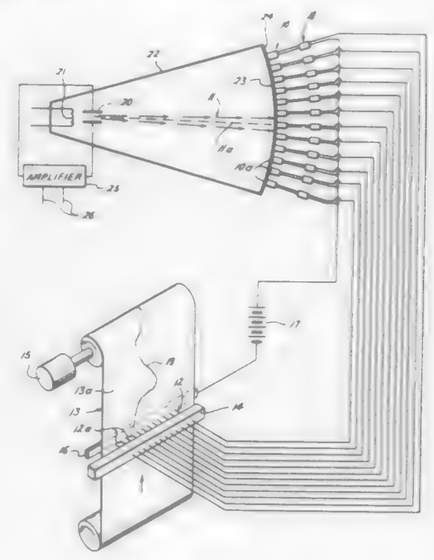
3,375,527

RECORDING APPARATUS

Nicholas N. Zirbel, Houston, Tex., assignor to Independent Exploration Company, Houston, Tex., a corporation of Texas

Continuation-in-part of application Ser. No. 81,086, Jan. 6, 1961. This application Oct. 26, 1964, Ser. No. 406,339
7 Claims. (Cl. 346—74)

1. Apparatus for recording variations in an electrical potential comprising: means for producing an energy beam, means for deflecting said energy beam in accordance with changes in said electrical potential, a plurality of spaced sensing means situated in the path of said energy beam, each capable of producing an electric signal when activated by the beam, the several sensing means being disposed at least close enough to adjacent sensing means relative to the effective width of the beam so that the beam in deflecting from activation of one sensing means toward activation of the next adjacent sensing means will activate such next adjacent sensing means before ceasing to activate said one sensing means, whereby at least one of said sensing means will be so activated at any given position of the energy beam, and recording means including a record sheet, a plurality of closely spaced electrically actuated marking elements mounted adjacent to the sheet and aligned in one direction thereacross and capable of producing an indication thereon when actuated, each of said marking elements being connected with certain of said sensing elements and being



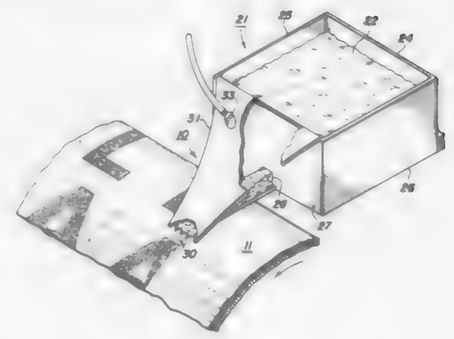
actuated to place indications on the record sheet in response to the electric signal emitted from each such sensing element whenever the sensing element is activated, and means for imparting to said record sheet continuous movement past said marking elements in a direction transverse to their alignment whereby at least one of said marking elements will be actuated to so mark the record sheet for any given position of the energy beam and the record produced on said record sheet will be continuous in the direction of movement of said sheet.

3,375,528

RECORDING PEN HAVING A PLURALITY OF CLOSELY SPACED WIRES

Uldis Klavsons, Penfield, and James E. Kennedy, East Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed May 7, 1965, Ser. No. 453,960
21 Claims. (Cl. 346—140)



A liquid ink recording apparatus which deposits ink on a recording surface when the surface tension of the ink is overcome by an electrical signal wherein the ink dispensing means includes closely spaced wires extending to the recording surface from an ink reservoir and which retain ink by surface tension in the spaces between the wires.

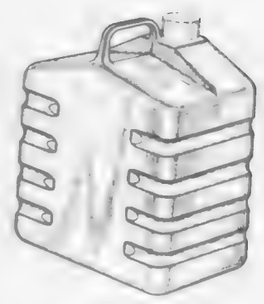
DESIGNS

MARCH 26, 1968

210,567
HOLDER FOR A CONTAINER FOR A BACTERICIDAL COMPOSITION
Angelo V. Stanziale, Iselin, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Nov. 24, 1965, Ser. No. 88,212
Term of patent 14 years
(Cl. D4—3)

210,568
JUG
Harold J. Vanderhyde, North Merrick, N.Y., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 11, 1967, Ser. No. 5,376
Term of patent 14 years
(Cl. D9—42)

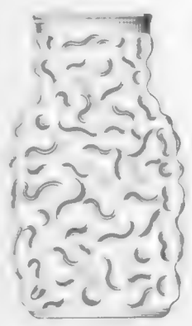
210,569
PLASTIC JUG
Norman A. Kelly, Wayne Township, Koscuisko County, Ind., assignor to Haskon, Inc., Warsaw, Ind., a corporation of Delaware
Filed Jan. 16, 1967, Ser. No. 5,440
Term of patent 14 years
(Cl. D9—53)



210,570
JAR
John Brady Campbell, Paramus, N.J., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 13, 1967, Ser. No. 6,177
Term of patent 14 years
(Cl. D9—86)

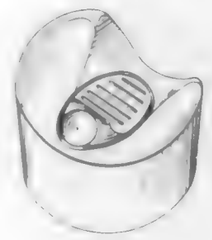
210,571
BOTTLE OR SIMILAR ARTICLE
Harold J. Vanderhyde, North Merrick, N.Y., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 11, 1967, Ser. No. 5,389
Term of patent 14 years
(Cl. D9—87)

210,572
BOTTLE OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Dec. 12, 1966, Ser. No. 5,005
Term of patent 14 years
(Cl. D9—100)

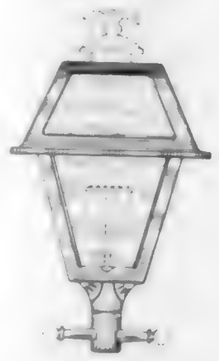


210,573
BOTTLE
Elio Inga, Viale Martiri della Benedicta 51, Serravalle Scrivia, Italy
Filed Feb. 28, 1967, Ser. No. 5,983
Claims priority, application Italy Oct. 21, 1966
Term of patent 3½ years
(Cl. D9—159)

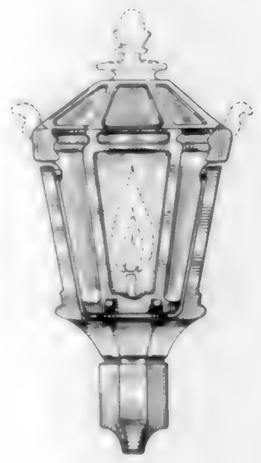
210,574
DISPENSER TOP FOR A PRESSURE CAN
Robert Henry Abplanalp, Bronxville, and Victor Koenigsberg, Franklin Square, N.Y.; said Abplanalp assignor to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York; said Koenigsberg assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Mar. 7, 1963, Ser. No. 73,867
Term of patent 14 years
(Cl. D9—275)



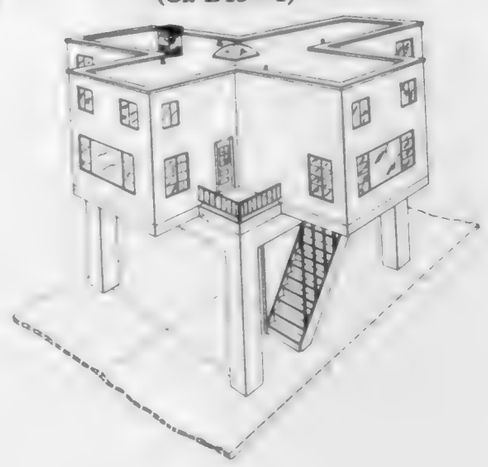
210,575
DOOR KNOCKER
Walter Koziol, Russell, Ill., assignor to Charmglow Manufacturing Co., Antioch, Ill., a corporation of Illinois
Filed Nov. 7, 1967, Ser. No. 9,315
Term of patent 14 years
(Cl. D10—7)



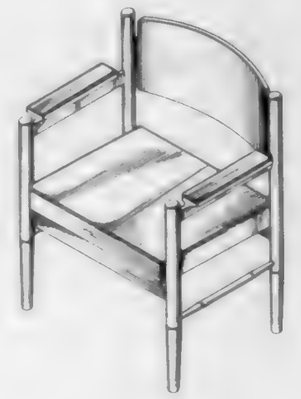
210,576
DOOR KNOCKER
Walter Koziol, Russell, Ill., assignor to Charmglow Manufacturing Co., Antioch, Ill., a corporation of Illinois
Filed Nov. 13, 1967, Ser. No. 9,377
Term of patent 14 years
(Cl. D10—7)



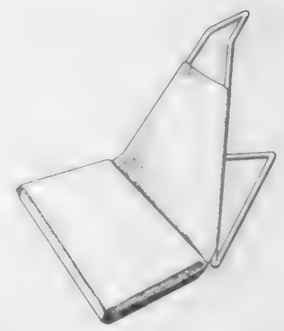
210,577
BUILDING
Ray C. Bender, P.O. Box 5265, Pittsburgh, Pa. 15206
Filed May 2, 1966, Ser. No. 2,103
Term of patent 14 years
(Cl. D13—1)



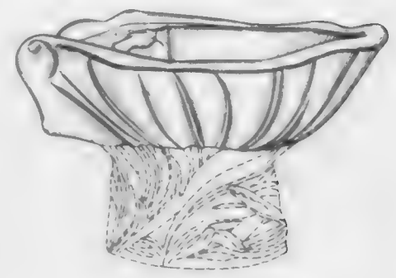
210,578
CHAIR
Eduardo F. Catalano, Cambridge, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Oct. 5, 1966, Ser. No. 4,171
Term of patent 14 years
(Cl. D15—1)



210,579
PORTABLE SEAT AND BACKREST COMBINATION
John M. Hehn, Hammett Acres, Anderson, S.C. 29621
Filed Feb. 13, 1967, Ser. No. 5,890
Term of patent 14 years
(Cl. D15—8)

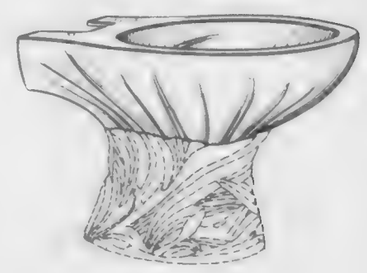


210,580
BOWL FOR A BIDET OR SIMILAR ARTICLE
Antonia Campi, Laveno Mombello, Italy, assignor to Società Ceramica Italiana Richard-Ginori Società per Azioni, Milan, Italy
Filed Oct. 7, 1966, Ser. No. 4,199
Claims priority, application Italy Apr. 7, 1966
Term of patent 14 years
(Cl. D23—51)



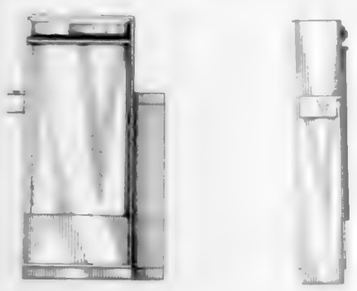
210,581
BABY TOILET TRAINER
Gladys M. Cantrell, 104 S. Johnson St., Alvin, Tex. 77511
Filed Apr. 6, 1967, Ser. No. 6,545
Term of patent 14 years
(Cl. D23—53)

210,582
BOWL FOR A TOILET OR SIMILAR ARTICLE
Antonia Campi, Laveno Mombello, Italy, assignor to Società Ceramica Italiana Richard-Ginori Società per Azioni, Milan, Italy
Filed Oct. 7, 1966, Ser. No. 4,201
Claims priority, application Italy Apr. 7, 1966
Term of patent 14 years
(Cl. D23—67)

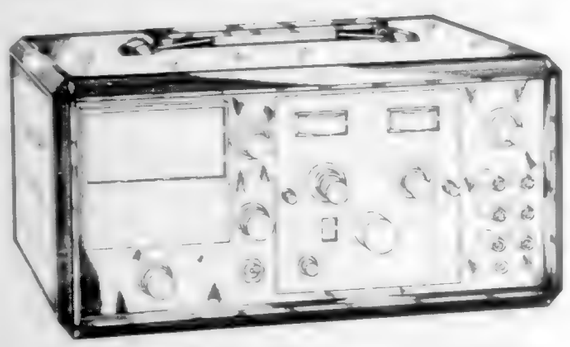


210,583
DENTAL IMPRESSION TRAY
Gaylon T. Westlund, 4732 Virginia Ave. N., Minneapolis, Minn. 55428, and Nels E. Neslund, 4241 N. Twin Oak Lane, Robbinsdale, Minn. 55422
Filed Mar. 28, 1967, Ser. No. 6,408
Term of patent 14 years
(Cl. D24—1)

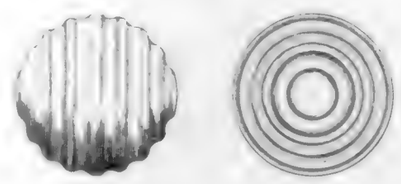
210,584
DENTAL CONSOLE
Milton R. Nielsen, Wheaton, and Richard A. Slouka, Carpentersville, Ill., assignors to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Filed May 24, 1967, Ser. No. 7,255
Term of patent 14 years
(Cl. D24—1)



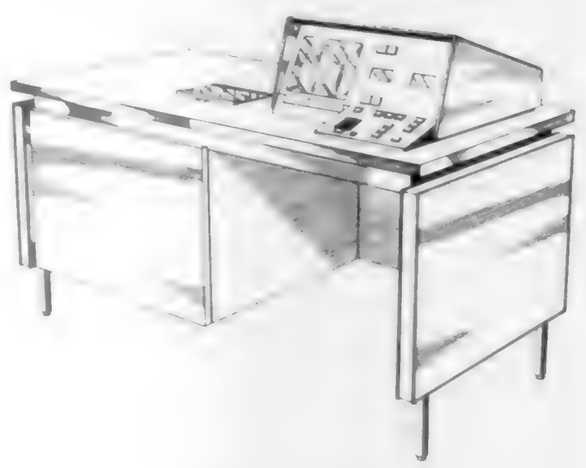
210,585
CARRYING CASE FOR ELECTRONIC EQUIPMENT AND THE LIKE
Frederic W. Jenkinson, Lafayette, Calif., assignor to Biotronics, Inc., Redding, Calif., a corporation of California
Filed Dec. 8, 1965, Ser. No. 115
Term of patent 14 years
(Cl. D26—1)



210,586
METAL BALL ANODE
Gerard Thomas Hodge, London, England, assignor to Mining & Chemical Products Limited, London, England, a British company
Filed Feb. 25, 1966, Ser. No. 1,177
Claims priority, application Great Britain Nov. 23, 1965
Term of patent 14 years
(Cl. D26—1)

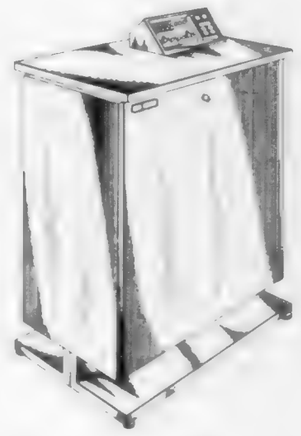


210,587
COMBINED DISPLAY AND CONTROL CONSOLE FOR AN INFORMATION FILING AND RETRIEVAL SYSTEM
Charles F. Grossman, Sunnyvale, Calif., and Marvin A. Southcott, Baltimore, Md., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 87,826
Term of patent 14 years
(Cl. D26—5)

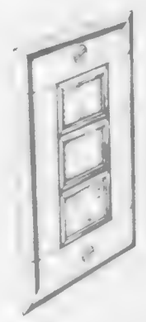


210,588
COMPUTER CONTROL CABINET OR SIMILAR ARTICLE
Charles N. Mazza, Framingham, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 16, 1966, Ser. No. 5,063
Term of patent 14 years
(Cl. D26—5)

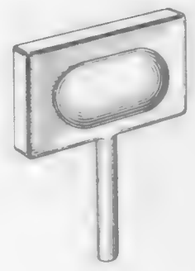
210,589
ELECTRONIC ADAPTER FOR FACSIMILE-COMPUTER SYSTEM
Robert E. Kalvitis, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 20, 1967, Ser. No. 6,310
Term of patent 14 years
(Cl. D26—5)



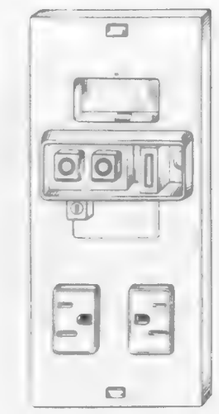
210,590
COMBINED ELECTRICAL FACE PLATE AND MODULAR INSERTS THEREFOR
Russell C. Edmisson, Bellflower, Calif., assignor to Sierra Electric Corporation, Gardena, Calif., a corporation of California
Filed June 22, 1966, Ser. No. 2,773
Term of patent 14 years
(Cl. D26—13)



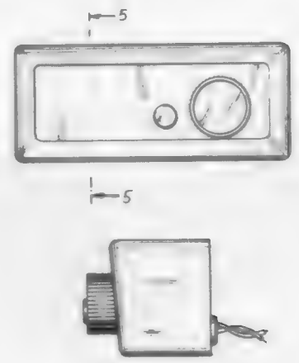
210,591
COMBINATION ELECTRICAL OUTLET AND CORD COVER
Tony Gonzalez, 510 E. 86th St., New York, N.Y. 10028
Filed Dec. 22, 1966, Ser. No. 5,155
Term of patent 14 years
(Cl. D26—13)



210,592
COVER PLATE FOR ELECTRICAL RECEPTACLES
Mario Paganelli, Varese, Italy, assignor to Bassani, S.p.A., Milan, Italy
Filed Dec. 20, 1966, Ser. No. 5,253
Claims priority, application Italy June 30, 1966
Term of patent 14 years
(Cl. D26—13)

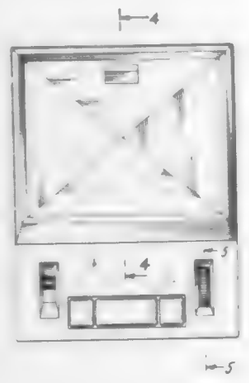


210,593
HEADLIGHT DELAY CONTROL
Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York
Filed Apr. 5, 1967, Ser. No. 6,739
Claims priority, application Japan Dec. 14, 1966
Term of patent 14 years
(Cl. D26—13)

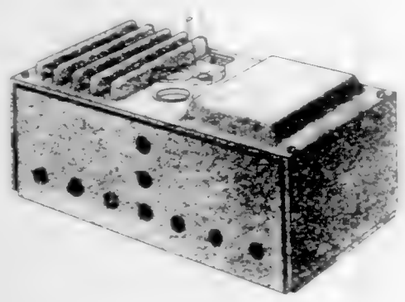


210,594
TAPE THREADER FOR TEMPORARILY SECURING MAGNETIC RECORDING TAPE IN A REEL
Henry J. Modrey, Eagle Drive, Stamford, Conn. 06903
Filed Dec. 13, 1966, Ser. No. 5,014
Term of patent 3½ years
(Cl. D26—14)

210,595
INTERCOMMUNICATIONS UNIT
Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York
Filed Dec. 19, 1966, Ser. No. 5,119
Claims priority, application Japan June 21, 1966
Term of patent 14 years
(Cl. D26—14)

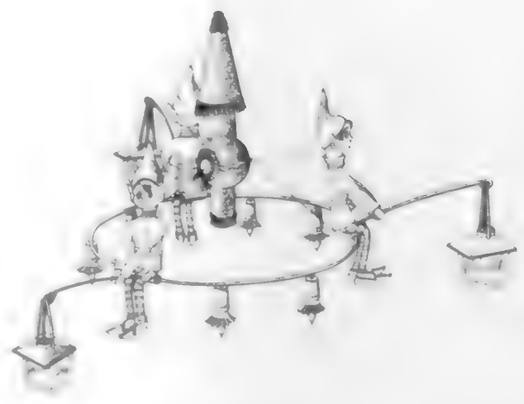


210,596
ELECTRONIC POWER SUPPLY CASE OR SIMILAR ARTICLE
Brant W. Becker, Sudbury, Mass., assignor to Gordon Engineering Company, Waltham, Mass., a limited partnership of Massachusetts
Filed June 7, 1967, Ser. No. 7,390
Term of patent 14 years
(Cl. D26—15)

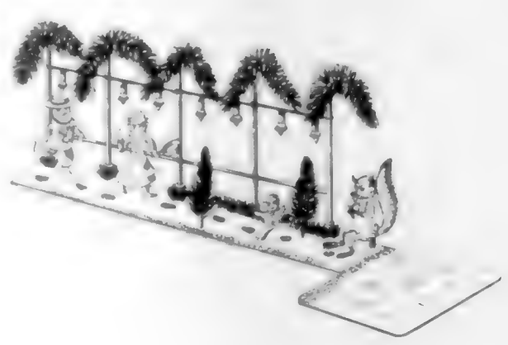


210,597
CHRISTMAS TREE ORNAMENT OR THE LIKE
Dario Moranduzzo, Via Aretina 161, Florence, Italy
Filed Sept. 22, 1966, Ser. No. 3,960
Term of patent 14 years
(Cl. D29—1)

210,598
CHRISTMAS MOBILE OR THE LIKE
Otto Kadmon and Alice Kadmon, both of 144—37 76th Road, Flushing, N.Y. 11367
Filed Feb. 10, 1967, Ser. No. 5,763
Term of patent 7 years
(Cl. D29—1)

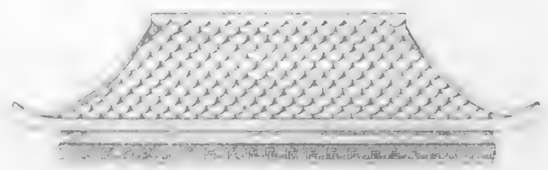


210,599
CHRISTMAS DECORATION OR THE LIKE
Otto Kadmon and Alice Kadmon, both of 144—37 76th Road, Flushing, N.Y. 11367
Filed Mar. 1, 1967, Ser. No. 6,008
Term of patent 7 years
(Cl. D29—1)

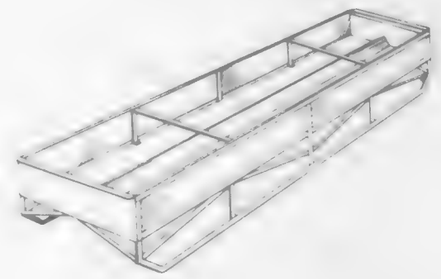


210,600
VASE
Charles H. Werner, Box 476, Pinedale, Wyo. 82941
Filed June 30, 1967, Ser. No. 7,665
Term of patent 14 years
(Cl. D29—28)

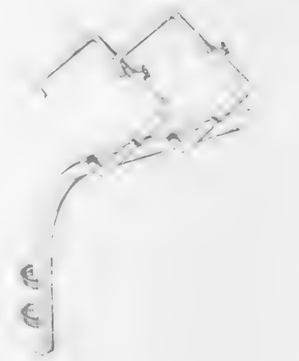
210,601
AQUARIUM COVER OR THE LIKE
Margie Lynn Blackwell, 6601 Corbin St., Houston, Tex. 77055
Filed Mar. 3, 1967, Ser. No. 6,054
Term of patent 14 years
(Cl. D30—12)



210,602
BUNK FEEDER
Furman E. Ott, Rte. 3, Laurens, S.C. 29360
Filed Mar. 13, 1967, Ser. No. 6,199
Term of patent 14 years
(Cl. D30—13)

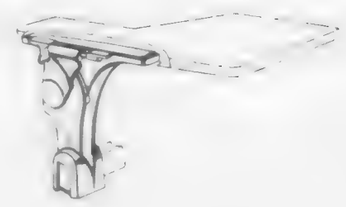


210,603
TELEVISION SET SUPPORT RACK
Albert E. Heimert III, Baltimore County, Md. (306 Weatherbee Road, Baltimore, Md. 21204)
Filed Oct. 28, 1965, Ser. No. 87,949
Term of patent 14 years
(Cl. D33—3)



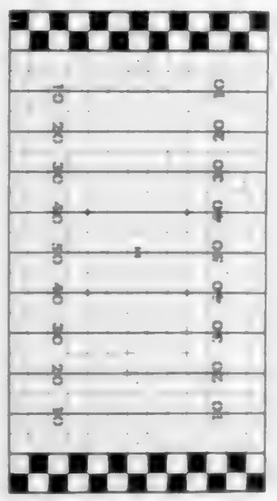
210,604
HOLDER FOR FIREWOOD CARRIER
Herbert R. Sanders, 12436 Elaine Drive, Des Peres, Mo. 63131
Filed Apr. 12, 1967, Ser. No. 6,654
Term of patent 14 years
(Cl. D33—3)

210,605
FOLDABLE SUPPORT FOR A CHAIR ARM TABLET
Lloyd L. Anderson, Rockford, Ill., assignor, by mesne assignments, to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed Aug. 1, 1966, Ser. No. 3,299
Term of patent 14 years
(Cl. D33—11)



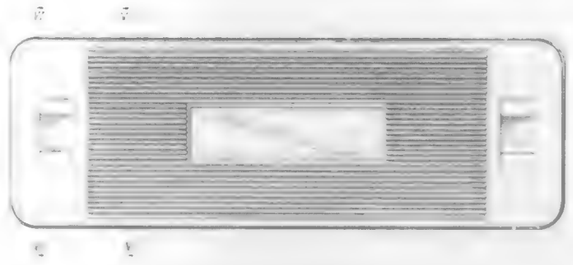
210,606
TABLE
John J. Hamilton and Charles E. Schroer, both % Hamilton Cosco, Inc., 2525 State St., Columbus, Ind. 47201
Filed Jan. 11, 1967, Ser. No. 5,380
Term of patent 14 years
(Cl. D33—14)

210,607
GAME BOARD
John Di Amico, 5627 McMahon St., Philadelphia, Pa. 19141
Filed Sept. 26, 1966, Ser. No. 4,033
Term of patent 14 years
(Cl. D34—5)

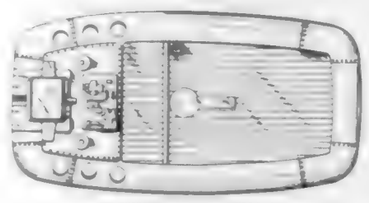


210,608
SCORER CONSOLE OR THE LIKE
George E. Schaefer, Muskegon, Mich., and Richard G. Reineman, Balboa, Calif., assignors to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 3, 1967, Ser. No. 5,676
Term of patent 14 years
(Cl. D34—5)

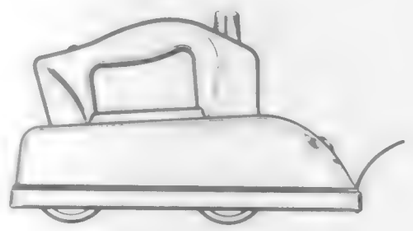
210,609
SWING SEAT OR SIMILAR ARTICLE
Raymond C. Confer, 7543 Slayton Settlement Road, Gasport, N.Y. 10605
Filed Apr. 26, 1967, Ser. No. 6,849
Term of patent 7 years
(Cl. D34—5)



210,610
SLED-TYPE TOY FOR DOLLS
John W. Ryan, Los Angeles, and Jacob de Gelder, Torrance, Calif., assignors to Mattel, Inc., a corporation of California
Filed Feb. 1, 1967, Ser. No. 5,643
Term of patent 14 years
(Cl. D34—15)

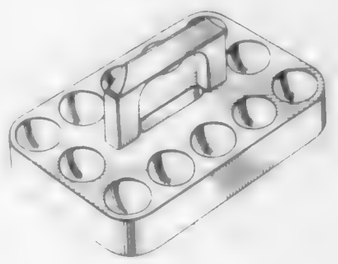


210,611
TOY IRON
Duane E. Spengler, West Falls, N.Y., assignor to Fisher-Price Toys, Inc., East Aurora, N.Y., a corporation of New York
Filed Feb. 28, 1967, Ser. No. 5,984
Term of patent 14 years
(Cl. D34—15)



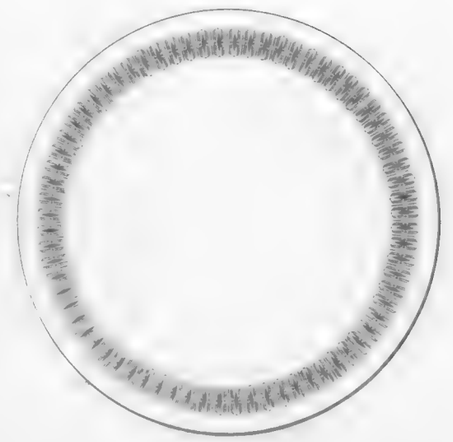
210,612
WINCH
Tomlinson I. Moseley, Atherton, Calif., assignor to Barient Company, San Carlos, Calif., a corporation of California
Filed June 5, 1967, Ser. No. 7,363
Term of patent 14 years
(Cl. D41—1)

210,613
EGG CADDY
Rex G. Moore, Jackson, Miss.
(213 Savanna St., Hinds, Miss. 39212)
Filed Aug. 14, 1967, Ser. No. 8,258
Term of patent 14 years
(Cl. D44—10)



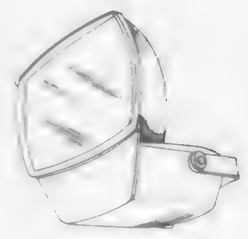
210,614
TRAY
David Douglas, 1119 Lincoln Blvd., Manitowoc, Wis. 54220
Filed Sept. 8, 1967, Ser. No. 8,528
Term of patent 14 years
(Cl. D44—10)

210,615
PLATE OR THE LIKE
Ottorino N. Mercadante, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 2, 1967, Ser. No. 8,805
Term of patent 14 years
(Cl. D44—15)



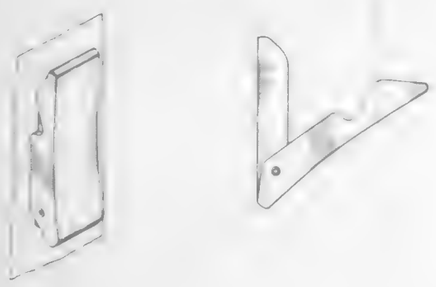
210,616
COMBINED CANDLEHOLDER AND CHRISTMAS TREE ORNAMENT
Dario Moranduzzo, Via Aretina 161, Florence, Italy
Filed Sept. 22, 1966, Ser. No. 3,962
Term of patent 14 years
(Cl. D48—2)

210,617
FLOODLIGHT
George N. Starr, Memphis, Tenn., and Sheldon M. Rutter, Miami, Fla., assignors to American Electric Manufacturing Corporation, Southhaven, Minn.
Filed Oct. 16, 1967, Ser. No. 8,999
Term of patent 14 years
(Cl. D48—20)



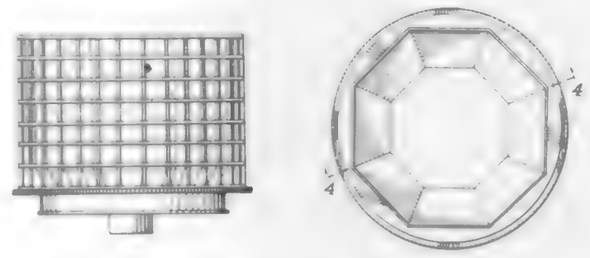
210,618
DESK COUNTERPOISE LAMP
Robert Sonneman, 210 E. 68th St., New York, N.Y. 10021
Filed Oct. 17, 1967, Ser. No. 9,031
Term of patent 14 years
(Cl. D48—20)

210,619
COAT HOOK
Paul R. Maguire, Los Angeles, Calif., assignor to Adams Rite Manufacturing Company, Glendale, Calif., a corporation of California
Filed Mar. 20, 1967, Ser. No. 6,375
Term of patent 14 years
(Cl. D54—1)



210,620
CONDUCTOR RAIL SUPPORT BRACKET
Johan L. Harmsen, 68 Hawkridge Ave., Markham, Ontario, Canada
Filed Nov. 3, 1967, Ser. No. 9,264
Term of patent 14 years
(Cl. D54—1)

210,621
BUCKET FOR USE IN SCRAP COMPRESSING APPARATUS FOR ELECTRIC FURNACE
Kunitoshi Tezuka, 34–7 Minami Sunmachi, Koto-ku, Tokyo-to, Japan
Filed Sept. 21, 1966, Ser. No. 3,950
Term of patent 14 years
(Cl. D55—1)



210,622
PAIR OF SAFETY SPECTACLES
Jack N. Simpson, Greenfields, Reading, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed Oct. 6, 1966, Ser. No. 4,172
Term of patent 14 years
(Cl. D57—1)

210,623
PAIR OF SAFETY SPECTACLES
Jack N. Simpson, Greenfields, Reading, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed Oct. 6, 1966, Ser. No. 4,173
Term of patent 14 years
(Cl. D57—1)

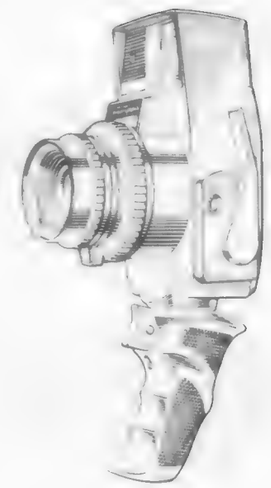
210,624
PAIR OF SPECTACLES
Jack Bloch, Leominster, and Vitalino Marchi, Concord, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 5,237
Term of patent 14 years
(Cl. D57—1)

210,625
COMBINATION EYE GLASS TEMPLE AND HEARING AID
Manfred J. Polak, 1115 Michigan Ave., Evanston, Ill. 60202
Filed May 15, 1967, Ser. No. 7,111
Term of patent 14 years
(Cl. D57—1)

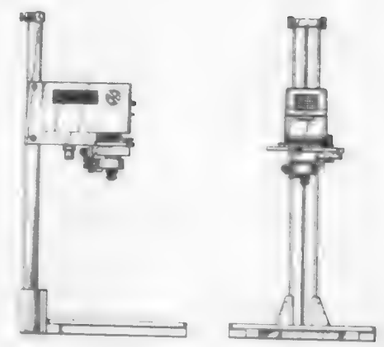
210,626
BOTTLE
Harold J. Vanderhyde, North Merrick, N.Y., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 30, 1967, Ser. No. 6,445
Term of patent 14 years
(Cl. D58—6)

210,627
FLASHCUBE ADAPTER FOR CAMERAS HAVING ACCESSORY SHOES OR SIMILAR ARTICLE
Dean M. Peterson and Charles E. Pickering, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 24, 1965, Ser. No. 87,925
Claims priority, application Germany May 19, 1965
Term of patent 14 years
(Cl. D61—1)

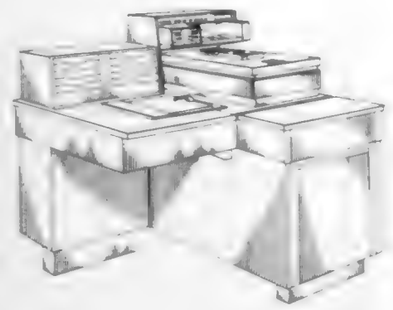
210,628
CAMERA
Nikolaus Karpf, Munich, Germany, assignor to Linhof, Nikolaus Karpf K.G., Munich, Germany
Filed May 3, 1966, Ser. No. 2,151
Claims priority, application Germany Jan. 4, 1966
Term of patent 14 years
(Cl. D61—1)



210,629
PHOTOGRAPHIC ENLARGER
Gilbert Durst, Brixen, near Bolzano, Italy, assignor to DURST S.p.A. Fabbrica Macchine ed Apparecchi Fototecnici, Bolzano, Italy
Filed Sept. 21, 1966, Ser. No. 3,942
Claims priority, application Italy May 12, 1966
Term of patent 14 years
(Cl. D61—1)

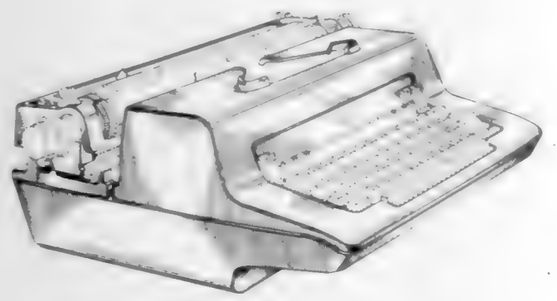


210,630
DOCUMENT REPRODUCING APPARATUS
Jacob W. Patla, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 13, 1966, Ser. No. 4,261
Term of patent 14 years
(Cl. D61—1)



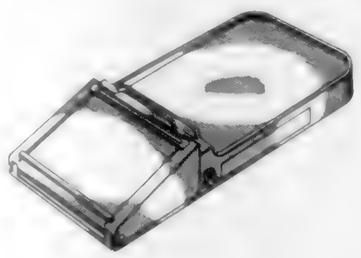
210,631
TYPEWRITER
Carl L. Otto, New York, N.Y., assignor to Litton Business Systems, Inc., a corporation of New York
Filed Jan. 17, 1967, Ser. No. 5,459
Term of patent 14 years
(Cl. D64—11)

210,632
TYPEWRITER
John Svezia, Millburn, N.J., assignor to Olivetti Underwood Corporation, New York, N.Y., a corporation of Delaware
Filed May 25, 1967, Ser. No. 7,260
Term of patent 14 years
(Cl. D64—11)



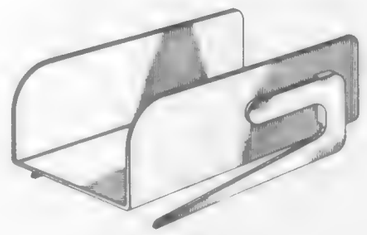
210,633
POCKET CLIP FOR A WRITING INSTRUMENT OR SIMILAR ARTICLE
Robert John Darst, Fort Madison, Iowa, assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Apr. 18, 1966, Ser. No. 1,926
Term of patent 14 years
(Cl. D74—2)

210,634
COMBINED MEMO PAPER HOLDER AND TELEPHONE STAND
William Chesterfield Newton, 1 Seacombe Grove, Brighton, near Melbourne, Victoria, Australia
Filed Oct. 18, 1966, Ser. No. 4,320
Claims priority, application Australia May 9, 1966
Term of patent 14 years
(Cl. D74—9)

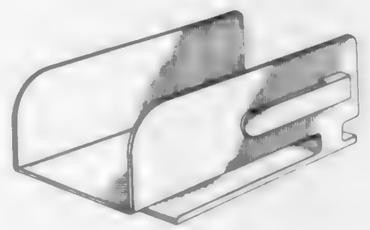


210,635
CARTRIDGE ACTUATOR FOR A WRITING INSTRUMENT
Emil Hechtle, Mountainside, N.J., assignor to Radiant Pen Corp., Kenilworth, N.J.
Filed Dec. 19, 1966, Ser. No. 5,115
Term of patent 14 years
(Cl. D74—17)

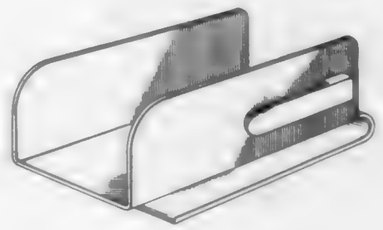
210,636
GROCERY BAG PACKER
Albert B. Greenfield, 1311 Huntingdon Pike, Huntingdon Valley, Pa. 19006
Filed May 4, 1967, Ser. No. 6,943
Term of patent 14 years
(Cl. D80—1)



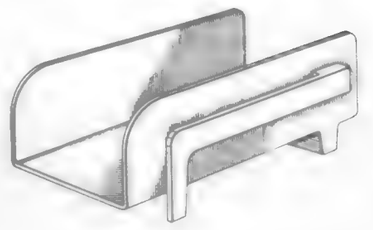
210,637
GROCERY BAG PACKER
Albert B. Greenfield, 1311 Huntingdon Pike, Huntingdon Valley, Pa. 19006
Filed May 4, 1967, Ser. No. 6,944
Term of patent 14 years
(Cl. D80—1)



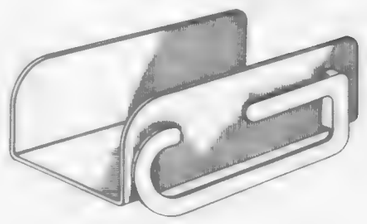
210,638
GROCERY BAG PACKER
Albert B. Greenfield, 1311 Huntingdon Pike, Huntingdon Valley, Pa. 19006
Filed May 4, 1967, Ser. No. 6,945
Term of patent 14 years
(Cl. D80—1)



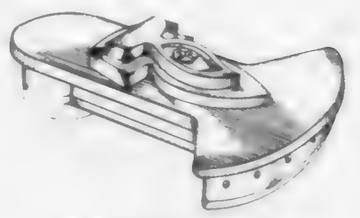
210,639
GROCERY BAG PACKER
Albert B. Greenfield, 1311 Huntingdon Pike, Huntingdon Valley, Pa. 19006
Filed May 4, 1967, Ser. No. 6,946
Term of patent 14 years
(Cl. D80—1)



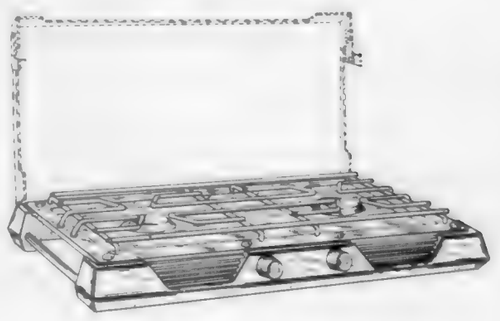
210,640
GROCERY BAG PACKER
Albert B. Greenfield, 1311 Huntingdon Pike, Huntingdon Valley, Pa. 19006
Filed May 4, 1967, Ser. No. 6,947
Term of patent 14 years
(Cl. D80—1)



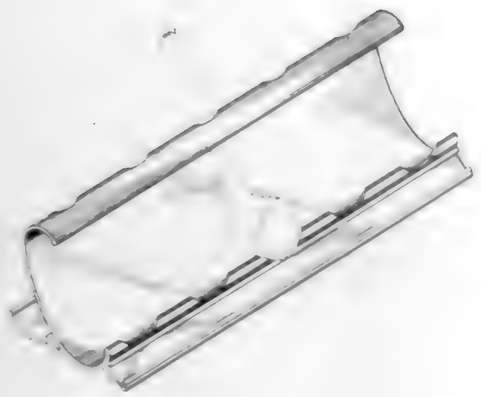
210,641
GAS BURNER
Joseph T. Leighton, 5245 Topeka Drive, Tarzana, Calif. 91356
Filed Jan. 4, 1967, Ser. No. 5,310
Term of patent 14 years
(Cl. D81—10)



210,642
PORTABLE BURNER
Pierre Eppendahl, Lyon, France, assignor to Societe Anonyme Sidemat, Paris, France, a corporation of France
Filed Apr. 17, 1967, Ser. No. 6,728
Claims priority, application France Jan. 18, 1967
Term of patent 14 years
(Cl. D81—10)

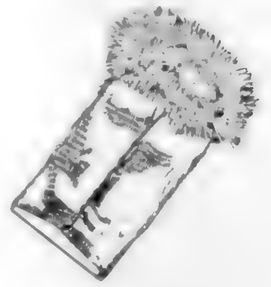


210,643
SMOKER'S PIPE RACK
Jacque Fresco, 3112 SW. 23rd St., Miami, Fla. 33142
Filed Mar. 7, 1967, Ser. No. 6,111
Term of patent 14 years
(Cl. D85—8)



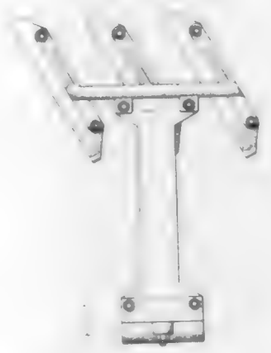
210,644
COMBINED HAIR SPRAY APPLICATOR AND CONTAINER THEREFOR
George B. Douglas, 550 40th St., and Roland C. Eberhardt, 753 W. 8th St., both of San Pedro, Calif. 90731
Filed Feb. 11, 1966, Ser. No. 1,011
Term of patent 7 years
(Cl. D86—10)

210,645
KEY CASE
Kenneth D. Kraus, 322 W. 72nd St., New York, N.Y. 10023
Filed June 21, 1965, Ser. No. 85,806
Term of patent 14 years
(Cl. D87—3)



210,646
CAMERA CASE
Donald E. Everburg, Southbridge, Mass., assignor, by mesne assignments, to American Optical Company, Southbridge, Mass., a corporation of Delaware
Filed June 15, 1966, Ser. No. 2,681
Term of patent 7 years
(Cl. D87—5)

210,647
STRING BEAN SNIPPER
Joe R. Urschel, 202 Michigan Ave., Valparaiso, Ind. 46383
Filed May 26, 1966, Ser. No. 2,441
Term of patent 14 years
(Cl. D95—1)



LIST OF DESIGN PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 26TH DAY OF MARCH, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Abplanalp, Robert H., and V. Koenigsberg; said Abplanalp assor. to Precision Valve Corp. and said Koenigsberg assor. to Colgate-Palmolive Co. Dispenser top for a pressure can. 210,574, 3–26–68, Cl. D9—275.

Adams Rite Mfg. Co. : *See*—
Maguire, Paul R. 210,619.

American Electric Mfg. Corp. : *See*—
Starr, George N., and Rutter. 210,617.

American Hospital Supply Corp. : *See*—
Nielsen, Milton R., and Slouka. 210,584.

American Optical Co. : *See*—
Everburg, Donald E. 210,646.

Amerock Corp. : *See*—
Anderson, Lloyd L. 210,605.

Ampex Corp. : *See*—
Grossman, Charles F., and Southcott. 210,587.

Anchor Hocking Glass Corp. : *See*—
Benes, Frank J. 210,572.

Anderson, Lloyd L., to Amerock Corp. Foldable support for a chair arm table. 210,605, 3–26–68, Cl. D33—11.

Barlent Co. : *See*—
Moseley, Tomlinson I. 210,612.

Bassani, S.p.A. : *See*—
Paganelli, Mario. 210,592.

Becker, Brant W., to Gordon Engineering Co. Electronic power supply case or similar article. 210,596, 3–26–68, Cl. D26—15.

Bender, Ray C. Building. 210,577, 3–26–68, Cl. D13—1.

Benes, Frank J., to Anchor Hocking Glass Corp. Bottle or similar article. 210,572, 3–26–68, Cl. D9—100.

Biotronics, Inc. : *See*—
Jenkinson, Frederic W. 210,585.

Blackwell, Margie L. Aquarium cover, or the like. 210,601, 3–26–68, Cl. D30—12.

Bloch, Jack, and V. Marchi, to Foster Grant Co., Inc. Pair of spectacles. 210,624, 3–26–68, Cl. D57—1.

Brunswick Corp. : *See*—
Schaefer, George E., and Reineman. 210,608.

Campbell, John B., to The Proctor & Gamble Co. Jar. 210,570, 3–26–68, Cl. D9—86.

Campi, Antonia, to Società Ceramica Italiana Richard-Ginori Società per Azioni. Bowl for a bidget or similar article. 210,580, 3–26–68, Cl. D23—51.

Campi, Antonia, to Società Ceramica Italiana Richard-Ginori Società per Azioni. Bowl for a toilet or similar article. 210,582, 3–26–68, Cl. D23—67.

Cantrell, Glayds M. Baby toilet trainer. 210,581, 3–26–68, Cl. D23—53.

Catalano, Eduardo F., to Massachusetts Institute of Technology. Chair. 210,578, 3–26–68, Cl. D15—1.

Charmglow Mfg. Co. : *See*—
Koziol, Walter. 210,575.
Koziol, Walter. 210,576.

Colgate-Palmolive Co. : *See*—
Abplanalp, Robert H. 210,574.

Confer, Raymond C. Swing seat or similar article. 210,609, 3–26–68, Cl. D34—5.

Corning Glass Works : *See*—
Mercadante, Ottorino N. 210,615.

Darst, Robert J., to Textron, Inc. Pocket clip for a writing instrument or similar article. 210,633, 3–26–68, Cl. D74—2.

De Gelder, Jacob : *See*—
Ryan, John W., and De Gelder. 210,610.

Di Amico, John. Game board. 210,607, 3–26–68, Cl. D34—5.

Douglas, David. Tray. 210,614, 3–26–68, Cl. D44—10.

Douglas, George B., and R. C. Eberhardt. Combined hair spray applicator and container thereof. 210,644, 3–26–68, Cl. D86—10.

Durst S.p.A. Fabbrica Macchine ed Apparecchi Fototecnici : *See*—
Durst, Gilbert. 210,629.

Durst, Gilbert, to Durst S.p.A. Fabbrica Macchine ed Apparecchi Fototecnici. Photographic enlarger. 210,629, 3–26–68, Cl. D61—1.

Eastman Kodak Co. : *See*—
Peterson, Dean M., and Pickering. 210,627.

Eberhardt, Roland C. : *See*—
Douglas, George B., and Eberhardt. 210,644.

Edmisson, Russell C., to Sierra Electric Corp. Combined electrical face plate and modular inserts therefor. 210,590, 3–26–68, Cl. D26—13.

Electric Storage Battery Co., The : *See*—
Simpson, Jack N. 210,623.

Everburg, Donald E., to American Optical Co. Camera case. 210,646, 3–26–68, Cl. D87—5.

Eppendahl, Pierre, to Societe Anonyme Sidemat. Portable burner. 210,642, 3–26–68, Cl. D81—10.

Fedtro, Inc. : *See*—
Kahn, Robert D. 210,593.
Kahn, Robert D. 210,595.

Fisher-Price Toys, Inc. : *See*—
Spengler, Duane E. 210,611.

Foster Grant Co., Inc. : *See*—
Bloch, Jack, and Marchi. 210,624.

Fresco, Jacque. Smoker's pipe rack. 210,643, 3–26–68, Cl. D85—8.

Gonzalez, Tony. Combination electrical outlet and cord cover. 210,591, 3–26–68, Cl. D26—13.

Gordon Engineering Co. : *See*—
Becker, Brant W. 210,596.

Greenfield, Albert B. Grocery bag packer. 210,636, 3–26–68, Cl. D80—1.

Greenfield, Albert B. Grocery bag packer. 210,637, 3–26–68, Cl. D80—1.

Greenfield, Albert B. Grocery bag packer. 210,638, 3–26–68, Cl. D80—1.

Greenfield, Albert B. Grocery bag packer. 210,639, 3–26–68, Cl. D80—1.

Greenfield, Albert B. Grocery bag packer. 210,640, 3–26–68, Cl. D80—1.

Grossman, Charles F., and M. A. Southcott, to Ampex Corp. Combined display and control console for an information filing and retrieval system. 210,587, 3–26–68, Cl. D26—5.

Hamilton, John J., and C. E. Schroer. Table. 210,606, 3–26–68, Cl. D33—14.

Harmsen, Johan L. Conductor rail support bracket. 210,620, 3–26–68, Cl. D54—1.

Haskon, Inc. : *See*—
Kelly, Norman A. 210,569.

Hechtle, Emil, to Radiant Pen Corp. Cartridge actuator for a writing instrument. 210,635, 3–26–68, Cl. D74—17.

Hehn, John M. Portable seat and backrest combination. 210,579, 3–26–68, Cl. D15—8.

Helmert, Albert E., III. Television set support rack. 210,603, 3–26–68, Cl. D33—3.

Hodge, Gerard T., to Mining & Chemical Products, Ltd. Metal ball anode. 210,586, 3–26–68, Cl. D26—1.

Honeywell, Inc. : *See*—
Mazza, Charles N. 210,588.

Inga, Elio. Bottle. 210,573, 3–26–68, Cl. D9—159.

Jenkinson, Frederic W., to Biotronics, Inc. Carrying case for electronic equipment and the like. 210,585, 3–26–68, Cl. D26—1.

Johnson & Johnson : *See*—
Stanziale, Angelo V. 210,567.

Kadmon, Alice : *See*—
Kadmon, Otto and A. 210,598.
Kadmon, Otto and A. 210,599.

Kadmon, Otto and A. Christmas mobile or the like. 210,598, 3–26–68, Cl. D29—1.

Kadmon, Otto and A. Christmas decoration or the like. 210,599, 3–26–68, Cl. D29—1.

Kahn, Robert D., to Fedtro, Inc. Headlight delay control. 210,593, 3–26–68, Cl. D26—13.

Kahn, Robert D., to Fedtro, Inc. Intercommunications unit. 210,595, 3–26–68, Cl. D26—14.

Kalvitis, Robert E., to Xerox Corp. Electronic adapter for facsimile-computer system. 210,589, 3–26–68, Cl. D26—5.

Karpf, Nikolaus, to Linhof Nikolaus Karpf K.G. Camera. 210,628, 3–26–68, Cl. D61—1.

Kelly, Norman A., to Haskon, Inc. Plastic jug. 210,569, 3–26–68, Cl. D9—53.

Kraus, Kenneth D. Key case. 210,645, 3–26–68, Cl. D87—3.

Koziol, Walter, to Charmglow Mfg. Co. Door knocker. 210,575, 3–26–68, Cl. D10—7.

Koziol, Walter, to Charmglow Mfg. Co. Door knocker. 210,576, 3–26–68, Cl. D10—7.

Leighton, Joseph T. Gas burner. 210,641, 3–26–68, Cl. D81—10.

Linhof Nikolaus Karpf K.G. : *See*—
Karpf, Nikolaus. 210,628.

Litton Business Systems, Inc. : *See*—
Otto, Carl L. 210,631.

Maguire, Paul R., to Adams Rite Mfg. Co. Coat hook. 210,619, 3–26–68, Cl. D54—1.

Marchi, Vilatlino : *See*—
Bloch, Jack, and Marchi. 210,624.

Massachusetts Institute of Technology : *See*—
Catalano, Eduardo F. 210,578.

Mattel, Inc. : *See*—
Ryan, John W., and De Gelder. 210,610.

Mazza, Charles N., to Honeywell, Inc. Computer control cabinet or similar article. 210,588, 3–26–68, Cl. D26—5.

Mercadante, Ottorino N., to Corning Glass Works. Plate or the like. 210,615, 3–26–68, Cl. D44—15.

Mining & Chemical Products, Ltd. : *See*—
Hodge, Gerard T. 210,586.

Modrey, Henry J. Tape threader for temporarily securing magnetic recording tape in a reel. 210,594, 3–26–68, Cl. D26—14.

Moore, Rex G. Egg caddy. 210,613, 3–26–68, Cl. D44—10.

Morandusso, Dario. Christmas tree ornament or the like. 210,597, 3–26–68, Cl. D29—1.

Moranduzzo, Dario, Combined candleholder and Christmas tree ornament. 210,616, 3–26–68, Cl. D48—2.
Moseley, Tomlinson I., to Barlent Co. Winch. 210,612, 3–26–68, Cl. D41—1.
Neslund, Nels E.: *See*—
Westlund, Gaylon T., and Neslund. 210,583.
Newton, William C, Combined memo paper holder and telephone stand. 210,634, 3–26–68, Cl. D74—9.
Nielsen, Milton R., and R. A. Slouka, to American Hospital Supply Corp. Dental console. 210,584, 3–26–68, Cl. D24—1.
Olivette Underwood Corp.: *See*—
Svezia, John. 210,632.
Ott, Furman E. Bunk feeder. 210,602, 3–26–68, Cl. D30—13.
Otto, Carl L., to Litton Business Systems, Inc. Typewriter. 210,631, 3–26–68, Cl. D64—11.
Paganelli, Mario, to Bassani, S.p.A. Cover plate for electrical receptacles. 210,592, 3–26–68, Cl. D26—13.
Patla, Jacob W., to Xerox Corp. Document reproducing apparatus. 210,630, 3–26–68, Cl. D61—1.
Peterson, Dean M., and C. E. Pickering, to Eastman Kodak Co. Flashcube adapter for cameras having accessory shoes or similar article. 210,627, 3–26–68, Cl. D61—1.
Pollak, Manfred J. Combination eye glass temple and hearing aid. 210,625, 3–26–68, Cl. D57—1.
Precision Valve Corp.: *See*—
Abplanalp, Robert H. 210,574.
Procter and Gamble Co., The: *See*—
Campbell, John B. 210,570.
Vanderhyde, Harold J. 210,568.
Vanderhyde, Harold J. 210,571.
Vanderhyde, Harold J. 210,626.
Pickering, Charles E.: *See*—
Peterson, Dean M., and Pickering. 210,627.
Radiant Pen Corp.: *See*—
Hechtle, Emil. 210,635.
Ryan, John W., and J. De Gelder, to Mattel, Inc. Sled-type toy for dolls. 210,610, 3–26–68, Cl. D34—15.
Reineman, Richard G.: *See*—
Schaefer, George E., and Reineman. 210,608.
Rutter, Sheldon M.: *See*—
Starr, George N., and Rutter. 210,617.
Sanders, Herbert R. Holder for firewood carrier. 210,604, 3–26–68, Cl. D33—3.
Schaefer, George E., and R. G. Reineman, to Brunswick Corp. Scorer console or the like. 210,608, 3–26–68, Cl. D34—5.
Schroer, Charles E.: *See*—
Hamilton, John J., and Schroer. 210,606.
Sierra Electric Corp.: *See*—
Edmisson, Russell C. 210,590.
Simpson, Jack N., to The Electric Storage Battery Co. Pair of safety spectacles. 210,622, 3–26–68, Cl. D57—1.
Simpson, Jack N., to The Electric Storage Battery Co. Pair of safety spectacles. 210,623, 3–26–68, Cl. D57—1.
Slouka, Richard A.: *See*—
Nielsen, Milton R., and Slouka. 210,584.
Societa Ceramica Italina Richard-Ginori Societe per Azioni: *See*—
Campi, Antonia. 210,580.
Campi, Antonia. 210,582.
Societe Anonyme Sidemat: *See*—
Eppendahl, Pierre. 210,642.
Sonneman, Robert. Desk counterpoise lamp. 210,618, 3–26–68, Cl. D48—20.
Southcott, Marvin A.: *See*—
Grossman, Charles F., and Southcott. 210,587.
Spengler, Duane E., to Fisher-Price Toys, Inc. Toy iron. 210,611, 3–26–68, Cl. D34—15.
Stanziale, Angelo V., to Johnson & Johnson. Holder for a container for a bactericidal composition. 210,567, 3–26–68, Cl. D4—3.
Starr, George N., and S. M. Rutter, to American Electric Mfg. Corp. Floodlight. 210,617, 3–26–68, Cl. D48—20.
Svezia, John, to Olivette Underwood Corp. Typewriter. 210,632, 3–26–68, Cl. D64—11.
Textron, Inc.: *See*—
Darst, Robert J. 210,633.
Tezuka, Kunitoshi. Bucket for use in scrap compressing apparatus for electric furnace. 210,621, 3–26–68, Cl. D55—1.
Urschel, Joe R. String bean snipper. 210,647, 3–26–68, Cl. D95—1.
Vanderhyde, Harold J., to The Procter & Gamble Co. Bottle or similar article. 210,571, 3–26–68, Cl. D9—87.
Vanderhyde, Harold J., to The Procter & Gamble Co. Jug. 210,568, 3–26–68, Cl. D9—42.
Vanderhyde, Harold J., to The Procter & Gamble Co. Bottle. 210,626, 3–26–68, Cl. D58—6.
Werner, Charles H. Vase. 210,600, 3–26–68, Cl. D29—28.
Westlund, Gaylon T., and N. E. Neslund. Dental impression tray. 210,583, 3–26–68, Cl. D24—1.
Xerox Corp.: *See*—
Kalvitis, Robert E. 210,589.
Patla, Jacob W. 210,630.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 26TH DAY OF MARCH, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Coldren, Daniel R., and Lau. 3,374,979.
Engelbart, Douglas C. 3,375,505.
A.V.E. Corp.: *See*—
Van Praag, Clifford F. 3,374,721.
Abbey, Robert, and D. S. Lane, to Honeywell Inc. Orientation sensing means comprising photo-detectors and projected fans of light. 3,375,375, 3–26–68, Cl. 250—216.
Abbott, Horace P., to Lever Bros. Co. Case measuring device. 3,374,547, 3–26–68, Cl. 33—143.
Abcor, Inc.: *See*—
Baddour, Raymond F. 3,374,606.
Fisher, Robert E., Ryan, and Modell. 3,374,607.
Abe, Hideo: *See*—
Muramori, Kiyoshi, Yaguchi, Watanabe, and Abe. 3,375,196.
Abraham, Anton, to Wiener, Kammfabrik Anton Abraham Komm. Ges. Tear-off device for rotatably mounted paper rolls particularly toilet paper rolls 3,374,931, 3–26–68, Cl. 225—79.
Abrams, Robert B.: *See*—
Campbell, Claude E., and Abrams. 3,374,709.
Achter, Meyer R., H. H. Smith, R. J. Riley, and R. L. Stegman, to United States of America, Navy. Flexural fatigue machine. 3,374,662, 3–26–68, Cl. 73—67.4.
Adam, W. D., Co., Inc.: *See*—
Adam, William D. 3,374,914.
Adam, William D., to W. D. Adam Co., Inc. Shipping container and structural material therefor. 3,374,914, 3–26–68, Cl. 220—4.
Adams, Norbert, T. Mukerjee, and J. M. Smith, to General Electric Co. Semiconductor tunnel diode device. 3,375,416, 3–26–68, Cl. 317—234.
Adams, Richard G., to J. P. Stevens & Co., Inc. Treatment of fibrous glass. 3,375,155, 3–26–68, Cl. 161—93.
Adams, William E., and W. A. Lucht, to United States Steel Corp. Torque balanced rope. 3,374,619, 3–26–68, Cl. 57—148.
Adler, William, to Servo Corp. of America. Suppressed carrier demodulation circuit. 3,375,453, 3–26–68, Cl. 329—145.
Aguilar, Edward C.: *See*—
Johnson, William D., Grippi, and Aguilar. 3,374,707.
Aiken Industries, Inc.: *See*—
Julius, Richard F. 3,375,141.
Air Products and Chemicals, Inc.: *See*—
Vander Arend, Peter C. 3,375,076.
Air Reduction Co., Inc.: *See*—
Vitcha, James F., and Moore. 3,375,279.
Aircraft Radio Corp.: *See*—
Clayton, John C. 3,375,486.
Aircraft Specialties, Inc.: *See*—
Kyser, Smith. 3,374,526.
Aitchison, Colin S., to North American Philips Co., Inc. Parametric amplifiers with quarter-wave spacing. 3,375,454, 3–26–68, Cl. 330—4.9.
Ajem Laboratories, Inc.: *See*—
Millhiser, Robert G., and Winger. 3,374,581.
Akashi, Tsuneo, M. Takahashi, F. Yamauchi, N. Tsubouchi, and T. Ohno, to Nippon Electric Co. Ltd. Piezoelectric lead zirconate titanate containing rhodium. 3,375,194, 3–26–68, Cl. 252—62.9.
Akron Standard Mold Co., The: *See*—
Ruttenberg, William C., and Teater. 3,375,154.
Aktiebolaget Tudor: *See*—
Kide, Leif A. 3,374,609.
Aktiengesellschaft Brown, Boveri & Cie.: *See*—
Seippel Claude. 3,374,942.
Alden, Milton, to Alden Research Foundation. Electrical harness. 3,375,406, 3–26–68, Cl. 317—99.
Alden Research Foundation: *See*—
Alden, Milton. 3,375,406.
Aldridge, Gerald R., to E. I. du Pont de Nemours and Co. Phenazine derivatives. 3,375,251, 3–26–68, Cl. 260—267.
Alexander, Matthew A.: *See*—
Scuitto, Thomas J., and Alexander. 3,375,356.
Scuitto, Thomas J., and Alexander. 3,375,498.
Alexeff, Alexander V., to Industrial Ovens, Inc. Tire manufacturing methods. 3,375,150, 3–26–68, Cl. 156—117.
Alfrey, Turner, Jr., and D. S. Chisholm, to The Dow Chemical Co. Modular curved structure and method of assembly. 3,374,588, 3–26–68, Cl. 52—81.
Alich, John A., to The P. B. Yates Machine Co. Ltd. Bandsaw guide. 3,374,816, 3–26–68, Cl. 143—160.
Allen, Stanley G.: *See*—
Setchfield, John B., and Allen. 3,375,145.
Allgemeine Elektricitats-Gesellschaft: *See*—
Schimmeister, Erwin. 3,375,410.
Allied Chemical Corp.: *See*—
Yodis, Anthony W., and Cunningham. 3,375,072.
Allied Flexible Products Inc.: *See*—
Leader, Harold. 3,374,612.
Allis-Chalmers Mfg. Co.: *See*—
Barber, Richard H., and McKean. 3,375,382.
Allison, Robert D., to United States Envelope Co. Envelopes with integral, detachable coupons contained therein. 3,374,940, 3–26–68, Cl. 229—70.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Hannerz, Kare. 3,375,171.
Mansson, Ragnar, and Skar. 3,375,172.
Alloy Surfaces Co.: *See*—
Baldi, Alfonso L., and Nice. 3,375,128.
Alsco, Inc.: *See*—
Youssi, Dale J., and Brand. 3,374,822.
Aluminum Processing Corp.: *See*—
Dorsky, Stanley. 3,375,368.
Alvarez Diaz, Francisco R. Artificial heart valve. 3,374,489, 3–26–68, Cl. 3—1.
Amaliksen, Arne S., to The Dow Chemical Co. Compressed sponge package. 3,374,882, 3–26–68, Cl. 206—46.
American Cyanamid Co.: *See*—
Bach, Frederick Louis, Barclay, and Cohen. 3,375,256.
American Gas Association Inc.: *See*—
Papp, Alexander M., and Hine. 3,375,081.
American Machine & Foundry Co.: *See*—
Chen, William K.-W. 3,375,182.
Kohler, Fred, and Rudd. 3,375,344.
Rademacher, Robert E., and Marasso. 3,374,600.
Rubinowitz, Leo. 3,375,049.
Yudewitz, Norman. 3,375,349.
American Physical Fitness Research Institute, Inc.: *See*—
Ruderian, Max J. 3,374,492.
American Potash & Chemical Corp.: *See*—
Healy, Robert M., and Royer. 3,375,061.
American Smelting and Refining Co.: *See*—
Kranz, Paul J. 3,375,107.
American Standard Inc.: *See*—
Heskestad, Gunnar. 3,374,971.
McKissick, Dale C., and Bauer. 3,375,106.
Okress, Ernest C. 3,374,941.
Amerock Corp.: *See*—
Anderson, Donald L. 3,375,051.
Dargene, Carl J. 3,375,031.
Ampex Corp.: *See*—
Dunsheath, Thomas J. 3,374,962.
Anaconda Aluminum Co.: *See*—
Smith, Addison R. 3,375,186.
Anadarko Production Co.: *See*—
Hester, Lewis W. 3,374,955.
Andersen, Clifford W., to The Wurlitzer Co. Tandem station machine for making piano action parts. 3,374,817, 3–26–68, Cl. 144—3.
Anderson, Donald L., to Amerock Corp. Drawer guiding and supporting assembly. 3,375,051, 3–26–68, Cl. 312—343.
Anderson, Leroy L., Jr., and F. Drugan, to Millers Falls Co. Woodcutting saw blade. 3,374,815, 3–26–68, Cl. 143—133.
Anderson, Ruth P.: *See*—
Goldman, Marvin, and Anderson. 3,375,369.
Anderson, Thomas P.: *See*—
Davis, William R., and Anderson. 3,374,703.
Anderson, Warren D., to Hoffmann Bearings Co. Machine and method of forming sheet metal articles. 3,374,519, 3–26–68, Cl. 29—148.4.
Anderson, William H.: *See*—
Hanson, Roy R. 3,374,549.
Anspon, Harry D.: *See*—
Smith, Wayne E., and Anspon. 3,375,216.
Smith, Wayne E., and Anspon. 3,375,217.
Anstalt fur Patentdienst: *See*—
Fleissner, Heinz. 3,374,552.
Fleissner, Heinz. 3,374,646.
Anthony, Wilson B. Process of recovering feed products from animal wastes. 3,375,116, 3–26–68, Cl. 99—2.
Antraigue, Roger. Machine for treating pneumatic tires. 3,375,153, 3–26–68, Cl. 156—410.
Antunovic, Anthony J. Deceleration indicator for motor vehicles. 3,375,496, 3–26–68, Cl. 340—72.
Aonoff, Edward S.: *See*—
Brent, George T., and Aonoff. 3,374,784.
Aquionics Corp.: *See*—
Buchmann, Louis J. 3,374,891.
Argabright, Perry A., to Marathon Oil Co. Catalytic hydrogenation of polycyclic aromatic quinones. 3,375,285, 3–26–68, Cl. 260—618.
Arlside Ltd. Maidenhead: *See*—
Lawes, Louis F. W., Shreeve, and Mihalik. 3,374,768.
Armco Steel Corp.: *See*—
Marshall, William E. 3,375,098.
Marshall, William E. 3,375,099.
Stutenroth, Charles E., and Werts. 3,374,997.
Taylor, David W. 3,375,144.
Armour Agricultural Co.: *See*—
Haseman, Joseph F. 3,375,067.
Armstrong Corp Co.: *See*—
Franze, John P. 3,375,311.
Thorne, Ward. 3,374,731.
Armstrong, Robert C., to General Dynamics Corp. Negative pressure device. 3,374,792, 3–26–68, Cl. 128—376.

Arneklev, Duane R.: *See*—
Brokke, Mervin E., Lukas, and Arneklev. 3,375,277.

Arps Corp.: *See*—
Redwine, Fletcher H. 3,374,669.

Arth, Glen E., D. Johnston, and L. H. Sarett, to Merck & Co., Inc. Ring a unsaturated-20-oxo-11,17-bis-oxygenated 16-methyl-steroids of the pregnane series. 3,375,261, 3-26-68, Cl. 260—397.45.

Artnell Co.: *See*—
Gielow, George F., and Edwards. 3,375,039.

Arundale, Erving: *See*—
Van de Castle, John F., Baldwin, and Arundale. 3,375,236.

Asada, Atsushi, and Y. Uchida, to Hayakawa Kenki Kogyo Kabushiki Kaisha. Register for a calculator that utilizes "excess 3" code. 3,375,355, 3-26-68, Cl. 235—156.

Asahi Breweries Ltd.: *See*—
Takayanagi, Sho. 3,374,726.

Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Ouchi, Shunji, Sowa, Yamada, Tsunoda, Kurihara, and Senoo 3,375,244.

Ashburn, Richard A.: *See*—
Donohue, John C., and Ashburn. 3,375,485.

Assaf, Said A. Method of preserving fresh meat. 3,375,119, 3-26-68, Cl. 99—157.

Astrodata, Inc.: *See*—
Madsen, R. G. 3,375,463.

Atkinson, Wallace E. Game with cruciform gameboard which converts to gamepiece container. 3,375,008, 3-26-68, Cl. 273—101.

Atlas Tool & Mfg. Co.: *See*—
Delf, Glenn A. 3,375,338.

Atomic Energy of Canada Ltd.: *See*—
Hilborn, John W. 3,375,370.
Stubley, Philip H. 3,375,170.
Wilson, Ivan L. 3,375,162.

Atomic Power Development Associates, Inc.: *See*—
McHugh, William E., and Shoudy. 3,375,169.

Auer, Martin F., to United States of America, Army. Method and means for orienting crystals by alternate application of angularly spaced magnetic fields. 3,375,438, 3-26-68, Cl. 324—14.

Autosonics, Inc.: *See*—
Rand, Burton. 3,375,177.

Axell Larsson Maskinaffar AB: *See*—
Stegerud, Olof G. 3,374,804.

Aye, Wolfgang G. U., M. J. Balkow, H. K. H. Hasse, and G. J. Rauter, to International Standard Electric Corp. Control circuit for induction motors. 3,375,424, 3-26-68, Cl. 318—227.

Ayres, Douglas B., and D. R. Sutton, to Minneapolis-Honeywell Regulator Co. Peak detector with automatic noise level adjusting means. 3,375,450, 3-26-68, Cl. 328—150.

Azoplate Corp.: *See*—
Schell, Loni, Uhlig, and Braun 3,374,734.

BTU Engineering, Inc.: *See*—
Beck, Jacob H. 3,375,319.

Bach, Frederick L., J. C. Barclay, and E. Cohen, to American Cyanamid Co. 4-substituted-4'-tertiary aminoalkoxy biphenyls. 3,375,256, 3-26-68, Cl. 260—294.7.

Bachman, Bernhard R., to Haag-Streit A.G. Coordinatograph. 3,374,453. 3-26-68, Cl. 33—18.

Baddour, Raymond F., to Ahcor, Inc. Method of and apparatus for chromatographic separations. 3,374,606, 3-26-68, Cl. 55—67.

Bader, Frank: *See*—
Richards, Dennis, Bader, and Magoos. 3,374,679.

Bailey, Donald L., and R. M. Pike, to Union Carbide Corp. Nitroarylsilanes and siloxanes. 3,375,218, 3-26-68, Cl. 260—37.

Bailey, Roy A. Mop for cleaning or waxing. 3,374,498. 3-26-68, Cl. 15—119.

Baizer, Manuel M., to Monsanto Co. Acrylonitrile polymers. 3,375,237, 3-26-68, Cl. 260—88.7.

Baker, Don H., Jr.: *See*—
Heinen, Harold J., Baker, and Gomes. 3,375,180.

Balaban, Philip. Card holder. 3,374,564, 3-26-68, Cl. 40—11.

Baldi, Alfonso L., and W. E. Nice, to Alloy Surfaces Co. Chromizing and priming employing chromium and anhydrous magnesium chloride. 3,375,128, 3-26-68, Cl. 117—107.2.

Baldwin, Alan W. Pressure indicator. 3,374,762, 3-26-68, Cl. 116—65.

Baldwin, Francis P.: *See*—
Van de Castle, John F., Baldwin, and Amundale. 3,375,286.

Baldwin, John L. E., and D. J. Parkyn, to Rank-Bush Murphy Ltd. Video D.C. insertion circuit. 3,375,326, 3-26-68, Cl. 178—7.1.

Baldyga, Joseph W., to Diamond Die & Mold Co. Method and apparatus for crimping electrical connectors. 3,374,657, 3-26-68, Cl. 72—413.

Balkow, Max J.: *See*—
Aye, Wolfgang G. U., Balkow, Hasse, and Rauter. 3,375,424.

Banks, William P., and M. Hutchison, to Continental Oil Co. Apparatus for minimizing corrosion of metals. 3,375,183. 3-26-68, Cl. 204—196.

Barber-Colman Co.: *See*—
Haug, Edward W. 3,347,851.

Barber, Richard H., and J. T. McKean, to Allis-Chalmers Mfg. Co. Dynamoelectric machine. 3,375,382, 3-26-68, Cl. 310—90.

Barclay, John C.: *See*—
Bach, Frederick L., Barclay, and Cohen. 3,375,256.

Bard, C. R., Inc.: *See*—
Logan, Earl A., Maloney, and Carson. 3,374,509.

Barden, Wayne A.: *See*—
Van Benthuysen, John, and Barden. 3,375,478.

Barker, Arthur K., to Cable Cover Ltd. Cable grip. 3,374,511, 3-26-68, Cl. 24—126.

Barrett, James P., E. T. Slattery, and J. H. Norris, to Veeder Industries Inc. Pushbutton rotary switch having unitary actuator. 3,375,337, 3-26-68, Cl. 200—156.

Barrows, Martin R. Radiation sensitive multichannel pressure transducer. 3,375,377, 3-26-68, Cl. 250—231.

Barth, Bruce P., T. E. Bugel, and W. F. Hale, to Union Carbide Corp. Mixtures of polyhydroxyethers and polyarylene polyethers. 3,375,297, 3-26-68, Cl. 260—823.

Basile, Norman K., and D. R. Yearwood, to J. J. McMullen. System for cooling, purging and warming liquefied gas storage tanks and for controlling the boil-off rate of cargo therein. 3,374,638, 3-26-68, Cl. 62—45.

Basile, Norman K.: *See*—
Burke, Charles A., Gale, and Basile. 3,374,639.
Corvino, Ralph A., and Basile. 3,374,641.

Baskwell, John A., to Pirelli General Cable Works Ltd. Means of impregnate a hollow cable core. 3,374,767, 3-26-68, Cl. 118—408.

Bass, Ottis W., to United States of America, Army. Spotting charge. 3,374,741, 3-26-68, Cl. 102—87.

Bates, Robert C.: *See*—
Corp, Ernest L., and Bates. 3,374,677.

Bator, Jesse A. Towel bar with folding rack. 3,374,899, 3-26-68, Cl. 211—96.

Batton, Francis E., to Pittsburgh Plate Glass Co. Paradichlorobenzene block. 3,375,159, 3-26-68, Cl. 167—30.

Bauer, Hans, and J. Heckmaier, to Wacker-Chemie G.m.b.H. Process for suspension polymerization of vinyl chloride. 3,375,238, 3-26-68, Cl. 260—92.8.

Bauer, James H.: *See*—
McKissick, Dale C., and Bauer. 3,375,106.

Baugher, John D., to The Rowan Controller Co. Constant current regulator and voltage sensing circuit. 3,375,435, 3-26-68, Cl. 323—4.

Baumbach, Harlan L. Automatic electrical control apparatus and film printer cuing system embodying same. 3,374,723, 3-26-68, Cl. 95—75.

Bausch & Lomb Inc.: *See*—
Pitchford, Richard L. 3,374,544.

Baxter Woolen Co., Inc.: *See*—
MacKay, Alden J. 3,374,506.

Bazilli, Michael V., S. G. Siddall, W. G. Moore, and J. C. Whitesides, to Lilliston Implement Co. Fertilizer spreader. 3,374,956, 3-26-68, Cl. 239—683.

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Dorfman, Edwin, Carr, and Bean. 3,375,267.

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Beaulieu, Bernard A.: *See*—
Rodgers, Paul D., and Beaulieu. 3,375,517.

Beavers, William O., to El Paso Natural Gas Products Co. Olefin polymerization with a potassium-amine-activated carbon catalyst. 3,375,294, 3-26-68, Cl. 260—683.15.

Beck, Jacob H., to BTU Engineering, Inc. High temperature electrical heating unit. 3,375,319, 3-26-68, Cl. 13—25.

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Beffa, Fabio, P. Lienhard, and E. Steiner, to J. R. Geigy, A.G. Metal-containing dyestuffs. 3,375,240, 3-26-68, Cl. 260—145.

Beier, Friedrich. Ski binding. 3,375,017, 3-26-68, Cl. 280—11.35.

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Ghiron, Hugo. Harr, and Martellotto. 3,375,499.
Lucky, Robert W. 3,375,473.
Royer, James J. 3,375,379.

Belleau, Jean D., to Dominion Engineering Works, Ltd. Process and apparatus for drying paper. 3,374,550, 3-26-68, Cl. 34—9.

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Bridges, Robert M., and Nerenstein. 3,375,488.
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Bentjens, Bernd, to Fa. Wilhelm Fette Praxisionswerkzeug-Fabrik. Hob. 3,374,518, 3-26-68, Cl. 29—103.

Bennett, Donald A., to The International Synthetic Rubber Co. Ltd. Process for preparing modified alkyo resins having increased resilience and resistance to cracking. 3,375,214, 3-26-68, Cl. 260—22.

Berghgracht, Marius. Installations for the manufacture of large-capacity bags. 3,374,714, 3-26-68, Cl. 93—8.

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Hayner, Paul F., and Bernier. 3,375,386.

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Bertelsen, Bruce I., to International Business Machines Corp. Magnetostatically coupled magnetic thin film devices. 3,375,503. 3,26-68, Cl. 340—174.

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Satchwell, John S., and Mrashaw. 3,374,605.

Beyer, Ralph E.: *See*—
May, Patrick L., Vidrine, and Beyer. 3,374,729.

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Black, Sheppard A., and J. D. Heide, to United States Rubber Co. Bead-setting method used in tire carcass building process. 3,375,151, 3-26-68, Cl. 156—132.

Black, Sivalls & Bryson, Inc.: *See*—
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Blackwood, John, and G. T. Genneken, to The Singer Co. Bobbin thread replenishing control mechanism for sewing machines. 3,374,756, 3-26-68, Cl. 112—184.

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Hanson, Roy R. 3,374,549.

Blaupunkt-Werke G.m.b.H.: *See*—
Ohlhorst, Rolf. 3,375,398.

Bliss, E. W., Co.: *See*—
Calsyn, Lawrence E., and Lewis. 3,375,492.
Vandemore, James J., and Hines. 3,375,378.

Bloch, Moshe R., and I. Schnerb, to Mifalei Yam Hamelah, B. M. Storage of bromine. 3,375,077, 3-26-68, Cl. 23—216.

Block Engineering, Inc.: *See*—
Young, Niels O. 3,374,933.

Bloomer, Ward J., to The Lummus Co. Process for deashing coal in the absence of added hydrogen. 3,375,188, 3-26-68, Cl. 208—8.

Blum, Pierre, C. Moreau, and L. Bochirol, to Commissariat a l'Energie Atomique. Process for the fabrication of fuel elements for nuclear reactors. 3,375,307, 3-26-68, Cl. 264—.5.

Bochirol, Louis: *See*—
Blum, Pierre, Moreau, and Bochirol. 3,375,307.

Bodine, Albert G. Sonically vibratory liquid sprayer. 3,374,953, 3-26-68. Cl. 239—102.

Boeing Co., The: *See*—
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Boese Corp.: *See*—
Boese, Harold L. 3,374,640.

Boese, Harold L., to Boese Corp. Liquid gas refrigeration system. 3,374,640, 3-26-68, Cl. 62—52.

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Hughes, David C. 3,375,055.

Boliker, David J.: *See*—
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Boniger, Richard M., to A. G. Spalding & Bros. Inc. Means for molding a grip or the like. 3,374,503, 3-26-68, Cl. 18—36.

Bonner, Willard H., Jr., to E. I. du Pont de Nemours and Co. Microcellular polymeric structure. 3,375,212, 3-26-68, Cl. 260—2.5.

Bonnin, Andre: *See*—
Laveissiere, Francoise, Bonnin, and Poirier. 3,375,202.

Bokey, John B., and B. B. Pearce, to Imperial Chemical Industries, Ltd. Ammonium polyphosphate preparation. 3,375,063, 3-26-68, Cl. 23—107.

Borden, Douglas G., C. C. Unruh, and S. H. Merrill, to Eastman Kodak Co. Light-sensitive polymers having a linear chain containing the styryl ketone group. 3,375,229, 3-26-68, Cl. 260—50.

Borelli, Michael T., H. J. Daniels, and H. H. Hosenthien, to United States of America, National Aeronautics and Space Administration. Adaptive tracking notch filter system. 3,375,451, 3-26-68, Cl. 328—167.

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Keane, John J., Fox, and Borman. 3,375,225.

Bosch, Robert, G.m.b.H.: *See*—
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Boteler, Henry W., to Grinnell Corp. Method of making diaphragm valve bodies. 3,374,522, 3-26-68, Cl. 29—157.1.

Bott, Adolf H., to Radio Corp. of America. Modulation technique exhibiting improved stabilization at high carrier frequencies. 3,375,470, 3-26-68, Cl. 332—45.

Boucher, Roland A., to Hughes Aircraft Co. High efficiency parallel rail accelerator. 3,374,629, 3-26-68, Cl. 60—202.

Boudigues, Alexandre, to CSF-Compagnie Generale de Telegraphis Sans Fil. Hall effect D.C. motor. 3,375,422, 3-26-68, Cl. 318—138.

Bound Brook Bearing Corp. of America: *See*—
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Bowcutt, Alvin A., D. J. Boliker, and B. Polikaitis, to Union Tank Car Co. Hopper car fabrication. 3,374,528, 3-26-68, Cl. 29—471.1.

Bowden, Benjamin G., to M. N. Bowden (Noreen). Bicycle frame. 3,375,024 3-26-68 Cl. 280—281.

Bowden, Mary N.: *See*—
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Bowers, Albert, P. Crabbe, and J. Edwards, to Syntex Corp. 19-nor-9β,10α-steroids of the pregnane series. 3,375,260, 3-26-68, Cl. 260—397.3.

Brade, James N., to Harrison, McGregor and Guest Ltd. Mowing machines. 3,374,610, 3-26-68, Cl. 56—25.

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Smith, Luke J., Jr. 3,374,559.

Bramson, Maurice. Pressure vessel. 3,374,781, 3-26-68, Cl. 126—369.

Brandt, Carl T., to Continental Oil Co. Underground storage and method of forming the same. 3,374,633, 3-26-68, Cl. 61—.5.

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Braun, Jurgen: *See*—
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Breckoff, Walter E., and J. M. McEuen, to Ethyl Corp. Restoring catalyst activity in an isomerization process. 3,375,293, 3-26-68, Cl. 260—683.2.

Brennan, Harry M.: *See*—
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Brenot, Claude, to CSF-Compagnie Generale de Telegraphie Sans Fil. Thermal gas flow comparator. 3,374,676, 3-26-68, Cl. 73—399.

Brent, George T., and E. S. Aonoff. Mechanical massage apparatus with crank and slide. 3,374,784, 3-26-68, Cl. 128—61.

Breon, Pearl L., R. H. Kress, and J. C. Medley, to Caterpillar Tractor Co. Vehicle suspension strut. 3,375,002, 3-26-68, Cl. 267—65.

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Bretz, Russell G., to Wave Crest Corp. Hydraulic stabilizer for boat steering. 3,374,761, 3-26-68, Cl. 114—150.

Brevitex Etablissement Pour l'Exploitation de Brevets Textiles: *See*—
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Briar, Jack E., F. L. Taige, Jr., and H. J. Taige, to Dazey Products Co. Automatic can opener apparatus. 3,374,539, 3-26-68, Cl. 30—4.

Bridges, Richard J., to Koppers Co., Inc. Switching circuits. 3,375,412, 3-26-68, Cl. 317—148.5.

Bridges, Robert M., and W. Nerenstein, to The Bendix Corp. Underwater transducer configuration. 3,375,488, 3-26-68, Cl. 340—8.

Brill, Klaus, to Robert Bosch G.m.b.H. Electrolytic capacitor comprising film-forming metal sheet carrying a dielectric oxide film and a metal dioxide electrolyte layer. 3,375,413, 3-26-68, Cl. 317—230.

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Brixner, Lothar H., to E. I. du Pont de Nemours and Co. Composition, process and article. 3,375,464, 3-26-68, Cl. 331—94.5.

Brixner, Lothar H., to E. I. du Pont de Nemours and Co. Alkali compensated rare earth doped zinc or cadmium borate phosphors. 3,375,465, 3-26-68, Cl. 331—94.5.

Brockman, Frank G., P. W. Beck, and W. G. Steneck, to North American Philips Co., Inc. Electromechanical transducer employing a piezomagnetic manganese ferrous ferrite. 3,375,195, 3-26-68, Cl. 252—62.56.

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Brokke, Mervin E. G. E. Lukes, deceased (by J. Hazzard, administrator), and D. R. Arneklev, to Stauffer Chemical Co. Complexes of phosphorus pentafluoride-oximes. 3,375,277, 3-26-68, Cl. 260—566.

Bronder, Herbert, to Ingersoll-Rand World Trade. Boom for drilling machines. 3,374,975, 3-26-68, Cl. 248—16.

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Brown, Walter P. Game. 3,374,556, 3-26-68, Cl. 35—19.

Browning, Francis A. Fluid operated flasher signal. 3,374,763, 3-26-68, Cl. 116—63.

Bruce, David V., to Western Electric Co., Inc. Method of soldering with radiant energy. 3,374,531, 3-26-68, Cl. 29—498.

Bruehl, Lawrence, to International Business Machines Corp. Magnetic drum assembly with air bearings. 3,375,506, 3-26-68. Cl. 340—174.1.

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House, Robert W., King, Roller, and Williams. 3,375,352.

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Bryan, Morris M., Jr., to The Jefferson Mills. Vehicle for doffing and collecting bobbins from a spinning frame. 3,374,617. 3-26-68, Cl. 57—53.

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Buchler, Joseph. 3,375,187.

Buchler, Joseph, to Buchler Instruments, Inc. Apparatus for temperature controlled preparative and analytical electrophoresis. 3,375,187, 3-26-68, Cl. 204—301.

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Grider, Lyle D. 3,375,021.
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Parnell, Roger M. 3,375,481.
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Burch, Charles J., to United States Steel Corp. Slag-granulating apparatus. 3,374,999, 3–26–68, Cl. 266—24.
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Sellers, Ralph F., Smith, and Burhans. 3,375,226.
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Finnegan, William G., and Burkardt. 3,375,148.
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Burks, Darnall P., and J. H. Fabricius, to Sprague Electric Co. Semiconductor mounting and assembly method. 3,374,533, 3–26–68, Cl. 29—577.
Burn, Derek, M. G. Lester, and V. Petrow, to The British Drug Houses Ltd. 6-hydroxymethyl-3-oxo-4,6-dienic steroids, acyl derivatives thereof, and process for preparing same. 3,375,167, 3–26–68, Cl. 167—74.
Burnham, Fred E., to Litton Industries of Maryland, Inc. Scanning reflector. 3,375,519, 3–26–68, Cl. 343—100.
Burns, Joel A. Seatbelt alarm system. 3,375,495, 3–26–68, Cl. 340—52.
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Cain, Hall H. Crushing device. 3,374,730, 3–26–68, Cl. 100—233.
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Motta, Nathaniel. 3,375,455.
Calmes, Albert H., to Contubind Societe Anonyme, and Lorraine-Escaut Societe Anonyme. Manufacturing seamless tubes. 3,374,650, 3–26–68, Cl. 72—46.
Callahan, James L., and E. C. Milberger, to Standard Oil Co. Process for preparing diolefins. 3,375,291, 3–26–68, Cl. 260—680.
Callender, George R., Jr. Fractured bone setting fastener assembly. 3,374,786, 3–26–68, Cl. 128—92.
Calsyn, Lawrence E., and R. W. Lewis, to E. W. Bliss Co. Frequency generator. 3,375,492, 3–26–68, Cl. 340—35.
Campbell, Claude E., and R. B. Abrams, to Thiokol Chemical Corp. Force-responsive actuator. 3,374,709, 3–26–68, Cl. 89—1.
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Rowlinson, Hugh C. 3,375,192.
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Carlson, Chester F., to Xerox Corp. Toner fusing apparatus. 3,374,769, 3–26–68, Cl. 118—641.
Carlson, Gordon R. Apparatus for chlorination of disposal from a series of toilet bowls. 3,374,490, 3–26–68, Cl. 4—115.
Carr, Frederick, to Servotomic Ltd. Controls for gas burning systems. 3,374,952, 3–26–68, Cl. 236—68.
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Crabbe, Pierre, and Casas-Campillo. 3,375,174.
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Case, Leslie C. and L. K. Polymer compositions from vinyl monomers and unsaturated polyester-polyetner copolymers. 3,375,301, 3–26–68, Cl. 260—869.
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Breon, Pearl L., Kress, and Medley. 3,375,002.
Catino, Sigmund C., and A. F. Strobel, to General Aniline & Film Corp. Sun-screening compounds. 3,375,271, 3–26–68, Cl. 260—510.
Catuara, Frank R., D. W. Moyer, and P. F. Richardson, to International Harvester Co. Constant torque centering device for hydrostatic transmission control. 3,374,626, 3–26–68, Cl. 60—53.
Cech, Donald A., to International Harvester Co. Resiliently biased steering system. 3,374,850, 3–26–68, Cl. 180—79.2.
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Cervenka, Kenneth G. Rotary gas compressor. 3,374,943, 3–26–68, Cl. 230—152.
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Chaplin, Henry D., Jr., to The Singer Co. Thread replenishing mechanisms for lockstitch sewing machines. 3,374,755, 3–26–68, Cl. 112—181.
Chase, Brass & Copper Co., The: *See*—
Peters, John E. 3,375,109.
Chautru, Rene: *See*—
Patin, Pierre, and Chautru. 3,374,491.
Chen, William K.-W., to American Machine & Foundry Co. Electrodialysis method and apparatus having radially symmetrical flow paths. 3,375,182, 3–26–68, Cl. 204—180.
Chenault, Roy L., to United States Steel Corp. Hydraulically operated subsurface motor and pump combination. 3,374,746, 3–26–68, Cl. 103—46.
Cheskin, David B. Precast column with shear-head sections. 3,374,592, 3–26–68, Cl. 52—260.
Chicago Aerial Industries, Inc.: *See*—
Thompson, Thomas L., and Schulze. 3,375,361.
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Snediker, Robert R. 3,374,566.
Chinkes, Sam. Display package. 3,374,884, 3–26–68, Cl. 206—72.
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Alfrey, Turner, Jr., and Chisholm. 3,374,588.
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Iwai, Shinji, Yoshimi, Mita, and Shiode. 3,375,302.
Chovan, Joseph. Paint pan safety clamp. 3,374,980, 3–26–68, Cl. 248—229.
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Pace, Carl A., Jr., and Nuss. 3,374,749.
Ruzza, Sergio A., and Brush. 3,375,193.
Salloum, James S. 3,374,577.
Schaber, Ralph F. 3,375,339.
Chubb, Donald E., A. C. Giurlando, and R. E. Rayner, to Worthington Corp. Seal assembly. 3,375,014, 3–26–68, Cl. 277—3.
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Chupp, John P.: *See*—
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Cislak, Francis E., C. K. McGill, and G. W. Campbell, Jr., to Reilly Tar & Chemical Corp. N-hydroxyalkylpiperidyl, piperidyl alkanes. 3,375,255, 3–26–68, Cl. 260—294.7.
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Clark, Charles C., H. M. Schroeder, and L. R. Garrison, to Textron Inc. Polyurethane product. 3,375,220, 3–26–68, Cl. 260—45.7.
Clarke, Frederick, to Tenneco Inc. Tapping apparatus and method. 3,374,521, 3–26–68, Cl. 29—157.
Clawson, Floyd J., and M. C. De Stefano; said Clawson assignor to Unifab, Inc. Method and apparatus for beneficiating minerals. 3,374,885, 3–26–68, Cl. 209—17.
Clayton, John C., to Aircraft Radio Corp. Electrical male connector. 3,375,486, 3–26–68, Cl. 339—252.
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Takenaka, George. 3,374,873.
Cohen, Elliott: *See*—
Bach, Frederick L., Barclay, and Cohen. 3,375,256.
Cointe, Marcel L., to Etablissements Gaston Verdier. Methods of manufacturing knitted goods incorporating darts, and articles obtained thereby. 3,374,645, 3–26–68, Cl. 66—89.
Colato, Albert E., to Plastics, Inc. Disposable food storage and serving device. 3,374,936, 3–26–68, Cl. 229—2.5.
Coldren, Daniel R., and R. R. Lau, to AMP Incorporated. Fastener. 3,374,979, 3–26–68, Cl. 248—223.
Cole, Charles A. Telephone line connector. 3,375,482, 3–26–68, Cl. 339—109.
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Trimmer, Robert H. 3,375,199.
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Consoli, Terenzio, and Geller. 3,375,401.
Concannon, Virgil K. Low-voltage dormant power-supply apparatus. 3,375,142, 3–26–68, Cl. 136—90.
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Consoli, Terenzio, and R. Geller, to Commissariat a l'Energie Atomique. Source of negatively charged particles having positively charged particle retaining means. 3,375,401, 3–26–68, Cl. 315—111.
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Conti, John D., to FMC Corp. Apparatus for splicing traveling web material. 3,374,963, 3–26–68, Cl. 242—58.4.
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White, Robert P. 3,374,601.
Zipper, Donald H. 3,374,913.
Continental Carbon Co.: *See*—
Ruble, Theodore A. 3,375,075.
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Banks, William P., and Hutchison. 3,375,183.
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Cook, Eugene A., Jr., to Selas Corporation of America. Continuous heat treating furnace. 3,374,995, 3–26–68, Cl. 263—3.
Cook, Jay E. Ball throwing machine and target net. 3,375,005, 3–26–68, Cl. 273—80.
Cook, Morris J., and J. W. H. Freeman, to Joseph Lucas, Ltd. Battery charging systems for road vehicles. 3,375,431, 3–26–68, Cl. 322—25.
Coplin, John F., to Rolls-Royce Ltd. Gas turbine engine combustion equipment. 3,374,624, 3–26–68, Cl. 60—39.65.
Cordier, David E., V. V. D'Ancicco, and R. A. Kolakowski, to The Upjohn Co. Polyurethane impregnating and bonding resin. 3,375,224, 3–26–68, Cl. 260—47.
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Corp, Ernest L., and R. C. Bates, to United States of America, Interior. Pressure measuring device employing a diaphragm-type pressure responsive unit. 3,374,677, 3–26–68, Cl. 73—406.
Corvino, Ralph A., and N. K. Basile, to John J. McMullen. Arrangement for protecting liquified gas transporting vehicles. 3,374,641, 3–26–68, Cl. 62—55.
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Course, John A. Toy eye examination kit. 3,374,572, 3–26–68, Cl. 46—11.
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Cox, James W. Velocipede driving apparatus. 3,375,023, 3–26–68 Cl. 280—251.
Crabbe, Pierre, and C. Casas-Campillo, to Syntex Corp. Microbiological hydroxylation of steroids. 3,375,174, 3–26–68, Cl. 195—51.
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Craig, Jimmie M., to United States of America, Navy. Snubber for deploying lines. 3,374,865, 3–26–68, Cl. 188—1.
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Maquire, Leo R. 3,374,648.
Crosswhite, Billy L., and J. F. Kinney, to United States of America, Army. Method of operating a liquid oxidizer feed piston. 3,374,623, 3–26–68, Cl. 60—39.48.
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Goheen, David W., and Martin. 3,375,283.
Cumming, James C., to Rockwell-Standard Corp. Brake system. 3,374,868, 3–26–68, Cl. 188—152.
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Current, James H., to Schlumberger Well Surveying Corp. Fluid expansible packer and anchor apparatus. 3,374,838, 3–26–68, Cl. 166—123.
Current, James H., to Schlumberger Well Surveying Corp. Well tool. 3,374,840, 3–26–68, Cl. 166—134.
Current, James H., to Schlumberger Well Surveying Corp. Packer with shear member. 3,374,841, 3–26–68, Cl. 166—138.
Curtin, John H., and J. Gagolski, to The Colonial Sugar Refining Co. Water-soluble phosphate compositions and process for preparing. 3,375,168, 3–26–68, Cl. 167—93.
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Dacheux, Louis F., Jr. Self-cleaning hand rake. 3,374,614, 3–26–68, Cl. 56—400.2.
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Dall'Oglio, Aldo W.: *See*—
Stockli, Johann, and Dall'Oglio. 3,374,820.
Danavox International A/S: *See*—
Rosenstand, Gerd. 3,375,407.
D'Ancicco, Victor V.: *See*—
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Dargene, Carl J., to Amerock Corp. Ornamental trim for door panels. 3,375,031, 3–26–68, Cl. 287—189.36.
David, Harri, O. Erdmann, C. Jahnig, and W. Rudszinat, to Hauni-Werke Korber & Cie. KG. Method and apparatus for transporting receptacles. 3,374,905, 3–26–68, Cl. 214—16.
Davis, Clyde F., to Quick Ball Return, Inc. Mechanical backstop for pin setting machines. 3,375,006, 3–26–68, Cl. 273—49.
Davis, Dhu A. J., to Hermetic Coil Co., Inc. Reciprocating motor core structure. 3,375,380, 3–26–68, Cl. 310—29.
Davis, William R., and T. P. Anderson, to The Stanley Works. Fasteners and fastener assemblies for building panels and the like. 3,374,703, 3–26–68, Cl. 85—13.
Davison, William R., and C. A. Brown, to United Aircraft Corp. Marine propulsion system. 3,374,630, 3–26–68, Cl. 60—226.
Dawson, David, to The General Electric Co. Ltd. Frequency modulated electric oscillators utilizing variable capacitance semiconductor diodes. 3,375,469, 3–26–68, Cl. 332—30.
Day, Cyril L., to International Telephone and Telegraph Corp. Thin image tube assembly. 3,375,391, 3–26–68, Cl. 313—95.
Dazey Products Co.: *See*—
Briar, Jack E., F. L. Talge, Jr., and H. J. Talge. 3,374,539.
De Antoni, Jacques J. P., to Les Laboratoires Bruneau & Cie. Phenothiazine carboxylic acid derivatives. 3,375,248, 3–26–68, Cl. 260—243.
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Deavenport, Joe E., and D. W. Sexton, to Weston Instruments, Inc. Digital volt meter. 3,375,351, 3–26–68, Cl. 235—92.
De Bella, Isabelle D. Educational or teaching device for demonstrating the several actions of the lungs and blood vessels in a human body. 3,374,554, 3–26–68, Cl. 35—17.
De Coye de Castelet, Gaetan, to Regie Nationale des Usines Renault. Automatic speed-changing mechanism for automobile vehicles. 3,374,693, 3–26–68, Cl. 74—865.
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De Groot, Loren E., J. A. Parini, A. R. Van Koevering, W. F. Roth, and R. A. Racy, to Lear Siegler, Inc. Integrated navigation receiver-computer. 3,375,520, 3–26–68, Cl. 343—103.
De Groot, Loren E., J. A. Parini, A. R Van Koevering, W. F. Roth, and R. A. Racy, to Lear Siegler, Inc. Doppler compensated navigation system. 3,375,521, 3–26–68, Cl. 343—103.
Dekker, Launcelot, and L. J. Ryan, Jr., to Maatschappij van Berkel's Patent N.V. Automatic subtracting device. 3,375,357, 3–26–68, Cl. 235—174.
Delf, Glenn A., to Atlas Tool & Mfg. Co. Extension cord control assembly for electric mower. 3,375,338, 3–26–68, Cl. 200—157.
De Longuyon, Ernst, to Climar A.G. Razor. 3,374,540, 3–26–68, Cl. 30—62.
Demarest, Philip C., and K. Karlson, to Ohmega Laboratories. Multifilament light. 3,375 394, 3–26–68, Cl. 313—316.
Dendy, John S. Determination of depletion of dissolved oxygen content in water. 3,375,078, 3–26–68, Cl. 23—230.
Den Hertog, Jacobus M., to North American Philips Co., Inc. Pulse code receiver. 3,375 327, 3–26–68, Cl. 178—69.5.
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De Rosset, Armand J., to Universal Oil Products Co. Dehydrogenation of hydrocarbons at high conversion levels. 3,375,288, 3–26–68, Cl. 260—669.
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De Vos, Hendrik A. J., to Sylvania Electric Products Inc. Spring hinge supporting means for power housing. 3,374,919, 3–26–68, Cl. 220—55.
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Dittrich, Werner: *See*—
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Dixon, John A. Electronic ignition system. 3,374,778, 3–26–68, Cl. 123—148.
Dobert, Alfred F., to Creative Associates of Albany, Ltd. Anchor device with releasable latch means. 3,374,859, 3–26–68, Cl. 182—92.
Doelp, Walter L., Jr., to Philco-Ford Corp. Method of connecting leads to a semiconductive device. 3,374,537, 3–26–68, Cl. 29—627.
Doggett, Towers, to Scott Paper Co. Sensitizing planographic plates for photolithography. 3,375,113, 3–26–68, Cl. 96—91.
Dolamore, Charles D., to Lorain Products Corp. Battery system control circuit. 3,375,426, 3–26–68, Cl. 320—15.
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D'Onofrio, Anthony A., to Union Carbide Corp. Method of producing carbonate polymer foams. 3,375,210, 3–26–68, Cl. 260—2.5.
Donohue, John C., and R. A. Ashburn, to United States of America, Navy. Coaxial cable connector. 3,375,485, 3–26–68, Cl. 339—177.
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Kuhn, Stephen J. 3,375,084.
Mulcihy, Thomas W., Jr. 3,375,101.
Oja, Phyllis D., and Niles. 3,375,230.
Olson, Robert S., Tveter, Surls, and Shaw. 3,375,060.
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Dow, Richard, P. E. Kelly, and P. A. Ramsdell, to E. I. du Pont de Nemours and Co. Water desensitized water work boosters. 3,374,736, 3–26–68, Cl. 102—24.
Drain, David J., J. G. B. Howes, and H. W. R. Williams, to T. J. Smith & Nephew Ltd. Hydroxylamine derivatives and process for making them. 3,375,273, 3–26–68, Cl. 260—538.
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Duddy, Joseph C., to ESB Inc. Method for preparing a microporous thermoplastic resin material. 3,375,208, 3–26–68, Cl. 260—2.1.
Dunbar, Joseph E., to Dow Chemical Co. Preparation of 5,8 - dihydro - 5,8 - methano-1,4-naphthalenedisulfonamides. 3,375,275, 3–26–68, Cl. 260—556.
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Bonner, Willard H., Jr. 3,375,212.
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Brixner, Lothar H. 3,375,465.
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Kane, William P. 3,375,215.
Logotnetis, Anestis L. 3,375,085.
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Sanders, George F. 3,374,599.
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Snyder, Jack A. 3,375,270.
Trebilcock, John W. 3,375,263.
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Gunderloy, Frank C., Jr. 3,375,087.
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Frye, John S., and J. B. Fuss. Means for connecting structural members. 3,375,029, 3–26–68, Cl. 287—189.35.
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Hageman, Donald H. A., to Hughes Aircraft Co. Solid state bistable circuit. 3,375,373, 3–26–68, Cl. 250—209.
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Halle, Ernest. Sectional planter. 3,374,574, 3–26–68, Cl. 47—34.12.
Halmson, Jacob, and C. Nunan, to Varian Associates. Acceleration method and apparatus. 3,375,396, 3–26–68, Cl. 315—3.5.
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Hamilton, Earl F., E. K. Moore, and R. B. Lay, to Hamilton Cosco, Inc. Chair back rest. 3,375,040, 3–26–68, Cl. 297—460.
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Hilborn, John W., to Atomic Energy of Canada Ltd. Self-powered neutron detector. 3,375,370, 3–26–68, Cl. 250—83.1.

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Hornung, Stephen A., L. L. Riggs, and J. H. Stichweh, to K. M. White Co., Inc. Elevator car announcing system. 3,375,491, 3–26–68, Cl. 340—19.

Horowitz, Robert M., and B. Gentili, to United States of America, Agriculture. Conversion of naringin to neohesperidin and neohesperidin dihydrochalcone. 3,375,242, 3–26–68, Cl. 260—210.

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Hughes, David C., to Bohn Benton Inc. Cartridge type sound motion picture projector. 3,375,055, 3–26–68, Cl. 352—72.

Hughes, Richard H., to Radio Corp. of America. Adjustable convergence magnets. 3,375,389, 3–26–68, Cl. 313—77.

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Humiston, Lee E., to United States of America, Navy. Chemiluminescent formulation. 3,375,176, 3–26–68, Cl. 252—188.3.

Hunley, William H. Variable buoyancy messenger buoy. 3,374,494. 3–26–68, Cl. 9—8.

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Hurvitz, Hyman. Heart massage unit. 3,374,783, 3–26–68, Cl. 128—51.

Hutchins, Hugh A. Muffler construction. 3,374,857, 3–26–68, Cl. 181—58.

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Greer, Kent R. 3,374,993.
Greer, Kent R. 3,374,994.

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Jackson, Wilbur F., and T. J. Dykzeul, to Robertshaw Controls Co. Dual thermostatic control device. 3,374,951, 3–26–68, Cl. 236—21.

Jacobi, Arno M., to Walter Jacobi & Sons, Inc. Apparatus for finishing surfaces. 3,374,583, 3–26–68, Cl. 51—141.

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Johnson, Herbert E., to Union Carbide Corp. Aza-cyano-oxabicyclo alkanes. 3,375,249, 3–26–68, Cl. 260—244.
Johnson, Robert J., to Swift & Co. Core oil compositions containing organic fibers. 3,374,825, 3–26–68, Cl. 164—47.
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Joyce, Rudy E., E. D. Hasenwinkle, and F. Wislocker, to Weyerhaeuser Co. Adhesive mixer-applicator for use with fast curing adhesives. 3,374,987, 3–26–68, Cl. 259—7.
Joyce, William H., to Union Carbide Corp. Ethylene polymer composition providing good contour surface at very high extrusion rates. 3,375,303, 3–26–68, Cl. 260—897.
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Maquire, Leo R., to Crompton & Knowles Corp. Textile treating apparatus with a plastic coated or metal roll having left- and right-hand helical threads. 3,374,648, 3–26–68, Cl. 68—180.
Marasso, Fred D.: *See*—
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Argabright, Perry A. 3,375,285.
Marconi Co. Ltd., The: *See*—
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Marez, John, to United States of America, Navy. High-speed waveform synthesizer. 3,375,360, 3–26–68, Cl. 235—197.
Marks, Marvin D., to McDonnell Aircraft Corp. Combination subsonic and supersonic propulsion system and apparatus. 3,374,631, 3–26–68, Cl. 60—244.
Marley, David J., to The Garrett Corp. Foil thrust bearing arrangements. 3,375,046, 3–26–68, Cl. 308—164.
Marra, Daniel A., Jr., to N. White. Protective devices for torch tips. 3,375,090, 3–26–68, Cl. 29—183.5.
Marsen, Richard A.: *See*—
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Marshall, William E., to Armco Steel Corp. Gaseous reduction of pelletized iron ores. 3,375,098, 3–26–68, Cl. 75—35.
Marshall, William E., to Armco Steel Corp. Production of iron from iron ores. 3,375,099, 3–26–68, Cl. 75—35.
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Martin, John B.: *See*—
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Martinides, Ivo, to Georg Fischer Aktiengesellschaft. Control circuit for machine tool having cam operated electronic switch means. 3,375,404, 3–26–68, Cl. 315—360.
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Maschinenfabrik Augsburg-Nurnberg, A.G.: *See*—
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Mason, Daniel F. Diver's weight belt. 3,374,636, 3–26–68, Cl. 61—70.
Mason, John L., to Sanders Associates, Inc. Analog multiplier. 3,375,359, 3–26–68, Cl. 235—194.
Massone, Luigi, to Landini S.p.A. Steering and braking hydraulics. 3,374,846, 3–26–68, Cl. 180—6.7.
Mather, William B., Jr., to Texaco, Inc. Fuel cell and electrolyte comprising a boro-phosphoric acid-phosphoric acid gel. 3,375,138, 3–26–68, Cl. 136—86.
Matthew, Windell. Honing tools and method. 3,374,516, 3–26–68, Cl. 29—76.
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Maurer, John A., to The Weber Dental Mfg. Co. Dental syringe with novel nozzle tip. 3,374,789, 3–26–68, Cl. 128—173.1.
May, Patrick L., C. G. Vidrine, and R. E. Beyer, to International Harvester Co. Agricultural apparatus. 3,374,729, 3–26–68, Cl. 100—142.
Mayer, Franz, and A. Meisner, to Diehl. Synchronous motor, especially for electric clocks. 3,375,423, 3–26–68, Cl. 318—138.
Mayer, Helmut O., 30% to R. A. Marsen. Tester system for diesel fuel pumps. 3,374,667, 3–26–68, Cl. 73—119.
Mayhew, Antony J., to The Marconi Co. Ltd. Multi-layer printed circuit terminal arrangement and method of making same. 3,375,323, 3–26–68, Cl. 174—68.5.
Mayhorne, Irene B., to External female urinal. 3,374,790, 3–26–68, Cl. 128—295.

McBrayer, Marvin L., to Moisture Register Co. Roller electrode probe for electrical moisture testing instrument having a rotatable outer cylinder concentric with fired inner cylinder electrode. 3,375,441, 3–26–68, Cl. 324—61.
McClellan, Melvin L., to Union Carbide Corp. Method of producing magnesium ferrosilicon. 3,375,104, 3–26–68, Cl. 75—129.
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McNanama, Charles E. Positioning and retaining device system for logs in a high capacity sawmill employing a horizontal traversing bandsaw adjustably mounted over the log being sawed. 3,374,812, 3–26–68, Cl. 143—19.
McMaster, Harold A., and P. J. Reising, to Permaglass Inc. Method and apparatus for shaping glass or the like on a curved glass support bed. 3,375,094, 3–26–68, Cl. 65—25.
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McMenimen, William R. Disposable containers with liquid trap. 3,374,939, 3–26–68, Cl. 229—53.
McMinn, Robert E., to Black, Sivalls & Bryson, Inc. Refrigeration method and apparatus for cyclical requirements. 3,374,642, 3–26–68, Cl. 62—115.
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Medige, John: *See*—
Friedenberg, Robert M., and Medige. 3,374,926.
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Gianinazzi, Rolando. 3,374,754.
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Mellor, Clarence H., to Fenwal Inc. Plasma arc spraying of hafnium oxide and zirconium boride mixtures. 3,375,127, 3–26–68, Cl. 117—93.1.
Mellott, Robert N., and J. J. Phelan, to United States of America, Navy. Maintenance of power supply regulation during low line transients. 3,375,437, 3–26–68, Cl. 323—22.
Melodie Vendor Corp.: *See*—
Ristau, Arnold E. and A. G. 3,374,925.
Melpar, Inc.: *See*—
Garner, Philip L., and Fuschillo. 3,375,143.
Moulton, Charles W., Hacskaylo, and Feldman. 3,375,135.
Menichelli, Vincent J., to United States of America, Navy. Explosive bolt. 3,374,702, 3–26–68, Cl. 85—1.
Menu, Edouard, to Societe Fives Lille-Cail. Storage apparatus for dummy ingots. 3,374,828, 3–26–68, Cl. 164—274.
Menzel, Thomas C., and J. E. Gerrard, to Esso Research and Engineering Co. Photo-pyrometric control system for efficient combustion in multiple-burner, residual-fuel-fired furnaces. 3,374,950, 3–26–68, Cl. 236—15.
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Merrill, Duane F., to General Electric Co. Method for polymerizing organopolysiloxanes. 3,375,223, 3–26–68, Cl. 260—46.5.
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Meyer, George E.: *See*—
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Meyer, Joseph W. Table top football game. 3,375,007, 3–26–68, Cl. 273—94.
Miale, Joseph N., and P. B. Weisz, to Mobil Oil Corp. Production of the hydrogen ion exchanged form of a crystalline zeolite. 3,375,064, 3–26–68, Cl. 23—111.
Michael, Vesta F., to Rock Island Oil & Refining Co., Inc. Labeled article and method for forming same. 3,374,807, 3–26–68, Cl. 138—144.
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Microwave Associates Inc.: *See*—
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Miller, Donald K., to Hewlett-Packard Co. Feedback amplifier having an input current limiting circuit. 3,375,460, 3–26–68, Cl. 330—51.
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Miller, Joseph A., and F. A. Kruglinski, to General Corrugated Machinery Co., Inc. Apparatus for packing and sealing cartons of product in a case. 3,374,603, 3–26–68, Cl. 53—58.
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Iwai, Shinji, Yoshimi, Mita, and Shiode. 3,375,302.
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Moberg, Sigurd M., to E. J. Brooks Co. Padlock-type seal with anti-tampering means. 3,375,033, 3–26–68, Cl. 292—320.
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Moffett, Robert B., to The Upjohn Co. 1,1-bis(biphenylyl)-2-methyl-3-tertiary aminopropanols and salts thereof. 3,375,278, 3–26–68, Cl. 260—570.
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Molnar, Robert J., and W. Parfomak, to The Bendix Corp. Means for converting a synchro shaft angle to a linear direct current signal. 3,375,508, 3–26–68, Cl. 340—198.

Monroe, Lloyd I. Camber gauge. 3,374,545, 3-26-68, Cl. 33—74.
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Morgenstern, Charles E., to Whirlpool Corp. Lint filter for use in washing machines. 3,374,647, 3-26-68, Cl. 68—18.
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Neidleman, Saul L., R. W. Kinney, and F. L. Weisenborn, to E. R. Squibb & Sons, Inc. Method for preparing tetracycline products. 3,375,276, 3-26-68, Cl. 260—559.
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O'Brien, George A., and G. A. Kochanowski, to Kinkead Industries Inc. Suspended ceiling system. 3,374,596, 3-26-68, Cl. 52—664.
O'Day, Patrick F. Wheel device for moving picnic tables. 3,375,019, 3-26-68, Cl. 280—47.32.
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Osborn, Harry B., Jr., and H. V. Beronius; said Osborn assor. to Park-Ohio Industries, Inc. Method of butt welding. 3,374,529, 3–26–68, Cl. 29—482.
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Pagano, Fernando. Phase converting power transformers. 3,375,429, 3–26–68, Cl. 321—57.
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Petzold, Dieter, to Licentia Patent-Verwaltungs-G.m.b.H. Static counter having main and auxiliary stores. 3,375,350, 3–26–68, Cl. 235—92.
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Pitchford, Richard L., to Bausch & Lomb Inc. Front gun telescope mount. 3,374,544, 3–26–68, Cl. 33—50.
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De Groot, Loren E., Parini, Van Koevering, Roth, and Racy. 3,375,521.
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Rhodes, Richard R., to United States of America, Army. Stabilized projectile. 3,374,969 3–26–68, Cl. 244—3.27.
Ribour, Jean L., and H. F. Garin, to International Standard Electric Corp. Frequency divider with variable digital ratio. 3,375,449, 3–26–68, Cl. 328—48.
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Robertson, Reed S., to Nalco Chemical Co. Cooling water treatment and compositions useful therein. 3,375,200, 3–26–68, Cl. 252—181.
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Rodger, Robert L., to United States of America, Army. Payload recovery system. 3,374,739, 3–26–68, Cl. 102—56.
Rodgers, Paul D., and B. A. Beaulieu, to International Telephone and Telegraph Corp. Phase-change rate detector. 3,375,517, 3–26–68, Cl. 343—8.
Roesner, Lawrence C., and L. E. Moen, to Precision Produce Specialties, Inc. Automatic carton handling machine. 3,374,604, 3–26–68, Cl. 53—75.
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De Groot, Loren E., Parini, Van Koevering, Roth, and Racy. 3,375,521.
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Sayigh, Adnan A. R., J. N. Tilley, and H. Ulrich, to The Upjohn Co. 3-alkoxy or alkylthio-4,4'-diisocyanato diphenylmethanes. 3,375,264, 3–26–68, Cl. 260—453.
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CLASSIFICATION OF PATENTS

ISSUED MARCH 26, 1968

NOTE.—First number, class; second number, subclass; third number, patent number

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3— 1	3,374,489		3,374,538	54.5	3,374,627	674	3,374,700	408	3,374,767	134	3,374,832
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16.5	3,374,501	19	3,374,556	65— 25	3,375,093	94— 45	3,374,717	75	3,374,785		3,375,166
30	3,374,502	29	3,374,557		3,375,094	95— 10	3,374,718	92	3,374,786	74	3,375,167
36	3,374,503	31	3,374,558	134	3,375,095	11	3,374,719	130	3,374,787	93	3,375,168
42	3,374,504		3,374,559	66— 89	3,374,645	.5	3,374,720		3,374,788	172— 7	3,374,842
19— 93	3,374,505	46	3,374,560	68— 9	3,374,646	15	3,374,721	173.1	3,374,789	174— 35	3,375,321
99	3,374,506	36— 2.5	3,374,561	18	3,374,647	60	3,374,722	187	3,374,742	52	3,375,322
245	3,374,507	37— 50	3,374,562	180	3,374,648	75	3,374,723	295	3,374,790	68.5	3,375,323
21— 91	3,375,057	38— 74	3,374,563	70— 92	3,374,649		3,374,724	343	3,374,791	101.5	3,375,324
23— 2	3,375,058	40— 11	3,374,564	71—122	3,375,096	96— 36	3,375,110	376	3,374,792	176— 30	3,375,169
	3,375,059	37	3,374,565	72— 46	3,374,650	38	3,375,111	533	3,374,793	35	3,375,170
15	3,375,060	125	3,374,566	76	3,374,651	67	3,375,112	129— 20	3,374,794	37	3,375,162
	3,375,061	203	3,374,567	113	3,374,652	91	3,375,113	131— 21	3,374,795	54	3,375,171
102	3,375,062	209	3,374,568	161	3,374,653	107	3,375,114	59	3,374,796	78	3,375,172
107	3,375,063	43— 42.36	3,374,569	189	3,374,654	109	3,375,115	134— 1	3,375,133	177— 1	3,374,843
111	3,375,064	53.5	3,374,570	287	3,374,655	98—119	3,374,725	21	3,375,134	134	3,374,844
112	3,375,065	83.5	3,374,571	391	3,374,656	99— 2	3,375,116	135— 1	3,374,797	178— 5.8	3,375,325
122	3,375,066	44— 64	3,375,092	413	3,374,657	90	3,375,117	20	3,374,798	7.1	3,375,326
165	3,375,067	46— 11	3,374,572	73— 17	3,374,658	116	3,375,118	136— 6	3,375,135	69.5	3,375,327
	3,375,068	237	3,374,573	23.1	3,374,659	157	3,375,119		3,375,136	88	3,375,328
200	3,375,069	47— 34.12	3,374,574		3,374,660	275	3,374,726	27	3,375,137	179— 15	3,375,329
203	3,375,070	41.12	3,374,575	35	3,374,661	282	3,374,727	86	3,375,138	22	3,375,330
	3,375,072	49— 81	3,374,576	67.4	3,374,662	353	3,374,728		3,375,139	100.2	3,375,331
204	3,375,071	391	3,374,577	71.2	3,374,663	100—142	3,374,729		3,375,140		3,375,332
	3,375,073	440	3,374,578	73	3,374,664	233	3,374,730	89	3,375,141	148	3,375,333
	3,375,074	468	3,374,579	90	3,374,665	101—129	3,374,731	90	3,375,142	175	3,375,334
209.4	3,375,075	482	3,374,580	115	3,374,666	132	3,374,732	137— 81.5	3,374,799	180— 6.5	3,374,845
210	3,375,076	51— 8	3,374,581	119	3,374,667	269	3,374,733	117	3,374,800	.7	3,374,846
216	3,375,077	131	3,374,582	147	3,374,668	466	3,374,734	143	3,374,801	14	3,374,847
230	3,375,078	141	3,374,583	151.5	3,374,669	102— 21.8	3,374,735	432	3,374,802	41	3,374,848
232	3,375,079	164	3,374,584	178	3,374,670	24	3,374,736	503	3,374,803	65	3,374,849
253	3,375,080	165	3,374,585	179	3,374,671	27	3,374,737	512.1	3,374,804	79.2	3,374,850
277	3,375,081	206	3,374,586	194	3,374,672	49.1	3,374,738	525	3,374,805	181— .5	3,374,851
295	3,375,082	219	3,374,587	204	3,374,673	56	3,374,739	138—119	3,374,806		3,374,852
356	3,375,083	52— 81	3,374,588	213	3,374,674	57	3,374,740	144	3,374,807		3,374,853
	3,375,084	105	3,374,589	379	3,374,675	87	3,374,741	140—102	3,374,808		3,374,854
357	3,375,085	221	3,374,590	399	3,374,676	103— 1	3,374,743	147	3,374,809	36	3,374,855
358	3,375,086	241	3,374,591	406	3,374,677	3	3,374,744	149	3,374,810	42	3,374,856
	3,375,087	260	3,374,592	421.5	3,374,678	16	3,374,745	141—145	3,374,811	58	3,374,857
359	3,375,088	283	3,374,593	432	3,374,679	46	3,374,746	143— 19	3,374,812	59	3,374,858
24— 3	3,374,508	598	3,374,594	538	3,374,680	101	3,374,747	38	3,374,813	182— 92	3,374,859
81	3,374,509	648	3,374,595	74— 15.55	3,374,681	126	3,374,748	68	3,374,814	204	3,374,860
103	3,374,510	664	3,374,596	43	3,374,682	136	3,374,749	133	3,374,815	222	3,374,861
126	3,374,511	738	3,374,597	50	3,374,683	152	3,374,750	160	3,374,816	184— 1	3,374,862
241	3,374,512	53— 3	3,374,598	56	3,374,684	104— 27	3,375,120	144— 3	3,374,817	6	3,374,863
25— 23	3,374,513	29	3,374,599		3,374,685	146	3,375,121	146— 49	3,374,818	187— 29	3,374,864
28— 72	3,374,514	35	3,374,600	242.11	3,374,686	204	3,375,122	148— 1.5	3,375,143	188— 1	3,374,865
29— 25.42	3,374,515	42	3,374,601	417	3,374,687	308	3,375,123	113	3,375,144	73	3,374,866
76	3,374,516	51	3,374,602	424.8	3,374,688	107— 54	3,374,751	177	3,375,145	79.5	3,374,867
91.1	3,374,517	58	3,374,603	426	3,374,689	111— 2	3,374,752	186	3,375,146	152	3,374,868
103	3,374,518	75	3,374,604	519	3,374,690	112— 2	3,374,753	149— 6	3,375,147	192— 26	3,374,869
148.4	3,374,519	307	3,374,605	674	3,374,691	158	3,374,754	18	3,375,148	53	3,374,870
	3,374,520	55— 67	3,374,606	688	3,374,692	181	3,374,755	156— 18	3,375,149	58	3,374,871
157	3,374,521		3,374,607	865	3,374,693	184	3,374,756	117	3,375,150	194— 10	3,374,872
.1	3,374,522	72	3,374,608	75— 1	3,375,097	192	3,374,757	132	3,375,151	195— 29	3,375,173
.3	3,374,523	105	3,374,609	35	3,375,098	220	3,374,758	212	3,375,152	51	3,375,174
183	3,375,089	56— 25	3,374,610		3,375,099	235	3,374,759	410	3,375,153	197— 49	3,374,873
.5	3,375,090	27	3,374,611	49	3,375,100	114— 20	3,374,760	418	3,375,154	72	3,374,874
194	3,375,091	202	3,374,612	67	3,375,101	150	3,374,761	157— 1.17	3,374,819	198— 35	3,374,875
201	3,374,524	334	3,374,613	68	3,375,102	116— 63	3,374,763	160— 22	3,374,820	68	3,374,876
203	3,374,525	400.2	3,374,614	123	3,375,103	65	3,374,762	40	3,374,821	127	3,374,877
222	3,374,526	57— 10	3,374,615	129	3,375,104	109	3,374,764	91	3,374,822		3,374,878
434	3,374,527	53	3,374,616		3,375,105	129	3,374,765	331	3,374,823	176	3,374,879
471.1	3,374,528		3,374,617	130	3,375,106	117— 17	3,375,124	161— 93	3,375,155	196	3,374,880
482	3,374,529	56	3,374,618	156.5	3,375,107	36.4	3,375,125	162—132	3,375,156	210	3,374,881
484	3,374,530	148	3,374,619	202	3,375,108	46	3,375,126	164— 34	3,374,824	200— 33	3,375,335
498	3,374,531	59— 93	3,374,620	212	3,375,109	93.1	3,375,127	47	3,374,825	152	3,375,336
505	3,374,532	60— 39.18	3,374,621	76—104	3,374,694	107.2	3,375,128	82	3,374,826	156	3,375,337
577	3,374,533	.28	3,374,622	77— 32.8	3,374,695		3,375,129	137	3,374,827	157	3,375,338
605	3,374,534	.48	3,374,623	69	3,374,696	126	3,375,130	274	3,374,828	159	3,375,339
611	3,374,535	.65	3,374,624	83— 35	3,374,697	211	3,375,131	165— 7	3,374,829	160	3,375,340

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OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

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TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 330,932 (BALI), Coty, Inc., Face powder, talcum powders, powder and rouge compacts, bath powder, sachet, rouge, lip sticks, perfumes, toilet waters, liquid nail polishes, cuticle removers, and polish removers, **filed** Nov. 2, 1967, D.C., S.D.N.Y., Doc. 67–C–4302, *The Bali Company, Inc.* v. *Chas. Pfizer & Co., Inc.*

Reg. No. 514,501 (MELMAC), American Cyanamid Company, Tableware, consisting of cups, saucers, plates, platters, bowls, and dishes, molded of plastic or synthetic resins, **filed** Nov. 8, 1967, D.C., N.D. Tex. (Dallas), Doc. CA–3–2302, *American Cyanamid Company* v. *Zale Corporation.*

Reg. No. 570,912 (OK AND DESIGN), General Motors Corporation, Used automobiles and trucks, **filed** Nov. 3, 1967, D.C., Fla. (Tampa), Doc. 67–463–C, *General Motors Corporation* v. *C. L. Leach, also known as Lou Leach, doing business as OK Auto Sales.*

Reg. No. 614,377 (INDUCTOSYN), Farrand Optical Co., Inc., Electrical apparatus for the measurement of angles and of linear displacements, **filed** Nov. 1, 1967, D.C. Mass. (Boston), Doc. 67–817–M, *Inductosyn Corporation* v. *Data Technology, Inc.*

Reg. No. 644,504 (FEATHAIRE), The Barbizon Corporation, Broadwoven fabric made of cotton, nylon and other synthetic fibers, and combinations thereof, **filed** Nov. 8, 1967, D.C., S.D.N.Y., Doc. 67–C–4379, *The Jaunty Fabric Corporation* v. *Monterey Mills Inc.*

Reg. No. 653,359 (SNOOPY), Elka Toy & Novelty Mfg. Corp., Stuffed toys, **filed** Dec. 5, 1967, D.C., S.D.N.Y., Doc. 67–C–4763, *Elka Toy & Mfg. Corp. et ano.* v. *United Feature Syndicate, Inc. et ano.*

Reg. No. 654,963 (ORTHO), California Spray-Chemical Corporation, Chemical compounds and preparations for use in agriculture, horticulture, livestock farming, household and industrial pest control, disinfection, deodorizing and corrosion control, including seed protectants; insecticides; fungicides; germicides; disinfectants; sanitizers; herbicides, animal repellents; spray adjuvants; wetting agents; spreaders; adhesives for use in insecticidal preparations; plant auxins; livestock and poultry sprays; deodorants and corrosion inhibitors, **filed** June 30, 1967, D.C., M.D. Mo. (Springfield), Doc. 2346, *Chevron Chemical Co.* v. *Leslie W. Potts.* Perpetual injunction on final judgment, Oct. 31, 1967.

Reg. No. 663,849 (HUSH PUPPIES), Wolverine Shoe and Tanning Corporation, Shoes, **filed** Feb. 14, 1961, W.D. Mich. (Grand Rapids), Doc. 4034, *Wolverine World Wide, Inc.* v. *Zayre Corp.* Consent judgment and decree, Nov. 9, 1967.

Reg. No. 680,491 (MILADY), Henry Pollak, Inc., Hat bodies, **filed** Nov. 6, 1967, D.C., S.D.N.Y., Doc. C67–4345, *Henry Pollak, Inc.* v. *Lisa Wigs & Wiglets, Inc.*

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	17,851
Date of oldest new application	Mar. 1, 1967
Date of oldest amended application (filing date)	Aug. 4, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. HETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 29, 30, 31, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	4–6–67	4–28–65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	4–19–67	8–4–64
(III) P. S. HALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	3–1–67	10–28–65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	3–17–67	9–10–65
Renewals (All Classes)	12–28–67	.....
Sec. 12(c) Publications (All Classes)	1–8–68	.....

Applications filed during the month of January 1968—2,350

Registrations Issued	356—No. 846,495 to No. 846,850
Renewals Issued	80

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 784,934 (JADE EAST), Swank, Inc., Cologne, after-shave lotion and deodorant, **filed** Nov. 8, 1967, D.C., S.D.N.Y., Doc. 67–C–4381, *Swank, Inc.* v. *Global Imports, Inc.*

Reg. No. 801,100 (A TO Z), A to Z Rental, Inc., Service of renting tools, equipment, and vehicles, **filed** Jan. 12, 1966, D.C., W.D. Tex. (El Paso), Doc. C–66–8–EP, *A to Z Rental, Inc. et al.* v. *Leon J. Marcotte et al.* Order dismissing case and granting permanent injunction, Feb. 21, 1966.

Reg. No. 811,380 (QUARTET), Quartet Fashions, Inc., Ladies' and girls' blouses, skirts, pants, shorts, jumpers and suits, **filed** Oct. 31, 1967, D.C., S.D.N.Y., Doc. 67–C–4237, *Quartet Fashions, Inc.* v. *Quartet Fabrics, Inc.*

Reg. No. 824,612 (SAHARA), Sahara-Nevada Corporation, Hotel service, **filed** Nov. 13, 1967, D.C., N.D. Calif. (San Francisco), Doc. 48200, *Sahara-Nevada Corporation* v. *Western Hotels Co. et al.*

Reg. No. 828,094 (PRE-INKED), Bankers & Merchants, Inc., Porous rubber printing stamp which stores ink therein and releases ink therefrom upon applying pressure to stamp, **filed** Nov. 20, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2018, *Bankers & Merchants, Inc.* v. *Wespac, a division of Westates Space-Era Products Inc.*

Reg. No. 831,747 (MATCHBOX), Lesney Products & Co., Toys—namely, model vehicles, model machines, plastic fire stations, ambulance stations, service stations and cardboard road layouts, **filed** Dec. 13, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–1167, *Lesney Products & Co., Ltd.* v. *Aurora Plastics Corp.*

Reg. No. 832,507 (CARNABY), Sheffield Watch, Inc., Watches and clocks, **filed** Oct. 31, 1967, D.C., S.D.N.Y., Doc. 67–C–4249, *Sheffield Watch of New York, Inc.* v. *Continental Fifth Avenue, Ltd.*

Reg. No. 836,350 (SI BONNE), Crown Textile Mfg. Corp., Fabrics used as a lining, underlining, interfacing, decorator and other fabric on women's dresses, coats, suits, skirts, slacks, and sportswear; and curtain and drapery fabrics, **filed** Nov. 22, 1967, D.C., S.D.N.Y., Doc. 67–C–4618, *Crown Textile Mfg. Corp.* v. *Ascot Textile Corp.*

Reg. No. 836,516 (STRIPES OF FASHION), Ventura Travelware, Inc. Luggage, attache cases, and trunks, **filed** Dec. 6, 1967, D.C., S.D.N.Y., Doc. 67–C–4783, *Universal Luggage Co., Inc. and Ventura Travelware, Inc.* v. *Air King Luggage Co., Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 242,905. Micro-Radionics, Incorporated, Van Nuys, Calif. Filed Apr. 7, 1966.

MRI

Class 21—Electrical Apparatus, Machines, and Supplies

For Microwave Electrical Apparatus—Namely, Packaged Circuit Networks, Junction Boxes, Receivers, Power Supplies, Switches, Signal Generators, Attenuators and Mixers, Waveguide Assemblies, Modulators, Antennas, and Transmission Lines (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Microwave Test Equipment—Namely, Transponder Checkout Sets, Radar System Checkout and Test Units, Special Purpose Microwave Test Equipment (Int. Cl. 9).

First use on or about Feb. 1, 1962.

SN 256,815. Bellair Cosmetics Limited, Oldham, England. Filed Oct. 20, 1966.

BELLAIR

Priority claimed under Sec. 44(d) on British Reg. No. 896,604, dated June 30, 1966.

Class 51—Cosmetics and Toilet Preparations

For Hair Spray (Int. Cl. 3).

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).

SN 253,388. Williams Brothers Company, Tulsa, Okla. Filed Aug. 29, 1966.

WILLIAMS BROTHERS

Class 100—Miscellaneous

For Surveying, Planning, Designing, and Engineering Services Relating to Pipeline Construction and Operation (Int. Cl. 42).

Class 103—Construction and Repair

For Installation, Construction, and Operation of Pipelines (Int. Cl. 37).

First use at least as early as Oct. 19, 1954; at least as early as Apr. 26, 1951, in a different form.

SN 255,147. The Wurlitzer Company, Chicago, Ill. Filed Sept. 26, 1966.

WURLITZER

Owner of Reg. Nos. 214,557, 219,563, and 504,653.

Class 21—Electrical Apparatus, Machines, and Supplies

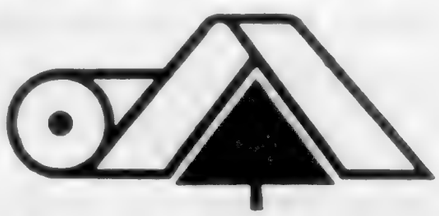
For Radio Receiving Sets and Television Receiving Sets, and Parts Thereof (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Home Phonographs and Magnetic Tape Recorders, and Parts Thereof (Int. Cl. 9).

First use on or before May 21, 1925.

SN 258,437. Prince George Pulp and Paper Limited, Vancouver, British Columbia, Canada. Filed Nov. 14, 1966.



Priority claimed under Sec. 44(d) on Canadian application filed July 2, 1966; Reg. No. 153,813, dated Oct. 20, 1967.

Class 1—Raw or Partly Prepared Materials

For Sulphate Woodpulp (Int. Cl. 1).

Class 37—Paper and Stationery

For Sack Kraft Paper (Int. Cl. 16).

First use July 1, 1966; in commerce Aug. 1, 1966.

SN 262,655. Barber-Greene Company, Aurora, Ill. Filed Jan. 17, 1967.

ANTICIPATING TOMORROW

Class 100—Miscellaneous

For Designing and Planning Services in the Field of Construction (Int. Cl. 42).

Class 103—Construction and Repair

For Rental of Earth Moving Equipment and Installation Services (Int. Cl. 37).

First use Jan. 27, 1966.

SN 277,962. The J. B. Williams Company, Inc., New York, N.Y. Filed Aug. 10, 1967.

FROST LIME

The word "Lime" is disclaimed apart from the mark as shown.

Class 51—Cosmetics and Toilet Preparations

For Cologne, Shave Cream, Pre-Shave Lotion, Shave Talc, and Personal Deodorant (Int. Cls. 3 and 5).

Class 52—Detergents and Soaps

For Toilet Soap on a Rope (Int. Cl. 8).

First use June 26, 1967.

SN 281,744. International Textbook Company, Scranton, Pa. Filed Oct. 4, 1967.

INTERTEXT

Class 101—Advertising and Business

For Printing, Electrotyping, and Publishing Services (Int. Cl. 35).

Class 106—Material Treatment

For Bookbinding Services (Int. Cl. 40).

Class 107—Education and Entertainment

For Conducting Correspondence Courses and Inplant Training Programs for Others (Int. Cl. 41).

First use Sept. 18, 1967.

SN 286,787. Kokoku Rayon and Pulp Co., Ltd., Minato-ku, Tokyo, Japan. Filed Dec. 13, 1967.

KOJIN

Owner of Japanese Reg. Nos. 470,289, dated Sept. 9, 1955, and 652,825, dated Sept. 14, 1964.

Class 1—Raw or Partly Prepared Materials

For Natural and Raw Synthetic Fibers (Int. Cl. 22).

Class 43—Thread and Yarn

For Cotton Yarn (Int. Cl. 23).

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 265,898. W. R. Grace & Co., New York, N.Y. Filed Mar. 3, 1967.

GRACON

For Vinyl Plastic Material in Pellet or Powder Form (Int. Cl. 1).

First use Feb. 2, 1967.

SN 268,715. Gus Dettelbach, d.b.a. Georgia-Tennessee Mining & Chemical Co., Atlanta, Ga. Filed Apr. 10, 1967.

Meow

For Absorbent Mineral Used in Cat Boxes for the Deodorization and Easy Disposition of Feces of Cats and Other Pets (Int. Cl. 5).

First use on or about Sept. 20, 1966.

SN 268,893. Petro-Tex Chemical Corporation, Houston, Tex. Filed Apr. 11, 1967.

For the purposes of registration no claim is made to the exclusive right to use of the word "Neoprene" and the representation of the State of Texas, but applicant waives none of its common law rights in the mark therein. Owner of Reg. Nos. 634,721 and 661,245.

For Neoprene and Neoprene Compositions Sold as Raw Materials Which in Turn May Be Used in the Manufacture of Adhesives and Synthetic Rubber Products, Wire and Cable Coating, and Other Manufactured Products (Int. Cl. 17).

First use Sept. 9, 1966.

SN 286,479. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Dec. 8, 1967.

3m

Owner of Reg. Nos. 749,591 and 778,914.

For Resin Used for Making Insoles for Shoes (Int. Cl. 1).

First use Nov. 7, 1967.

Class 2—Receptacles

SN 234,082. Speko Products, Inc., Chicago, Ill. Filed Dec. 6, 1965.

BIN-KANISTER

Owner of Reg. No. 726,610.

For Household Storage and Dispensing Containers—Namely, Canister Cabinets (Int. Cl. 21).

First use July 1, 1960.

SN 250,952. Freeman & Gossage, Inc., San Francisco, Calif. Filed July 25, 1966.

SARATOGA TRUNK

Applicant disclaims the word "Trunk" apart from the mark.

For Demountable Ornamental Boxes for Storage Purposes (Int. Cl. 20).

First use on or about May 11, 1965.

SN 263,243. American Cyanamid Company, Wayne, N.J. Filed Jan. 25, 1967.

VERAGLO

For Plastic Dinnerware (Int. Cl. 21).

First use Dec. 30, 1966.

SN 265,856. Universal Tank & Iron Works, Inc., Indianapolis, Ind. Filed Mar. 2, 1967.

UNI-SPHERE

For Pedestal Water Storage Tanks (Int. Cl. 6).
First use March 1962.

SN 274,650. Plantabbs Corporation, Timonium, Md. Filed June 23, 1967.

ROYAL

GARDEN

For Plastic Pottery (Int. Cl. 21).
First use May 3, 1967.

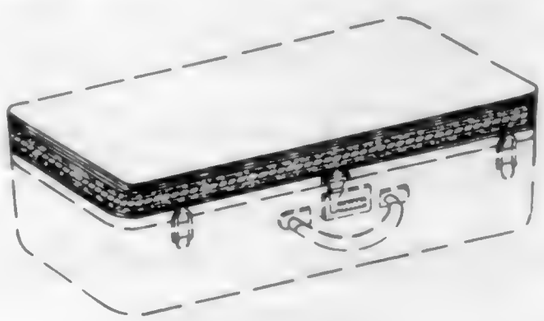
SN 276,833. The Greif Bros. Cooperage Corporation, St. Paul, Minn. Filed July 26, 1967.

SEED KRAFT

Applicant disclaims the word "Kraft" apart from the mark as shown.
For Multi-Wall Paper and Plastic Bags (Int. Cl. 16).
First use Oct. 1, 1966.

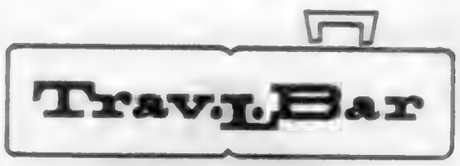
Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 254,002. Ventura Travelware, Inc., New York, N.Y. Filed Sept. 7, 1966.



The drawing is lined for the colors red, gold, and green. The representation of the suitcase on the drawing is disclaimed apart from the mark as shown.
For Luggage, Attache Cases, and Trunks (Int. Cl. 18).
First use June 6, 1966.

SN 255,790. Ever-Wear, Inc., Chicago, Ill. Filed Oct. 5, 1966.



Applicant disclaims the term "Trav·L·Bar" when used separate and apart from the mark, except for the design feature thereof.
For Fitted Luggage (Int. Cl. 18).
First use June 1966; May 1956 as to "Trav·L·Bar."

SN 267,834. Lucien Piccard Watch Corp., New York, N.Y., assignee of Lucien Piccard Sportswear Ltd., New York, N.Y. Filed Mar. 29, 1967.

"Lucien Piccard" is not the name of any known living individual.
For Leather Goods—Namely, Billfolds, Key Cases, Wallets, and Money Clips (Int. Cl. 18).
First use Dec. 4, 1965.

Class 4 — Abrasives and Polishing Materials

SN 258,663. Armstrong Cork Company, Lancaster, Pa. Filed Nov. 15, 1966.

MIRASHEEN

For Polymeric Latex for Polishing Floors (Int. Cl. 3).
First use Oct. 31, 1966.

SN 262,515. Clifton T. Spear, d.b.a. The Diamond Spear Co., Texarkana, Tex. Filed Jan. 13, 1967.

PERMA-SHEEN

For Metal Polishing Cloth Impregnated With Metal Polish and Metal Polishing Creme (Int. Cl. 21).
First use in 1927.

SN 272,002. Armour and Company, d.b.a. Armour Abrasives Company, Chicago, Ill. Filed May 22, 1967.

STAR RESILITE

Owner of Reg. No. 516,820.
For Coated Abrasives in the Form of Sheets and Belts (Int. Cl. 3).
First use on or prior to May 1, 1967.

SN 283,381. Alberto-Culver Company, Melrose Park, Ill. Filed Oct. 26, 1967.

SURRENDER

For Furniture Polish (Int. Cl. 3).
First use July 31, 1967.

Class 5 — Adhesives

SN 258,791. Eaton Allen Corp., Brooklyn, N.Y. Filed Nov. 16, 1966.

The word "Glue" is disclaimed apart from the mark as shown. The drawing is lined for the color red-violet. Owner of Reg. Nos. 724,626 and 736,991.

For Pencil-Type Adhesive Applicators, Sold Filled (Int. Cl. 1).

First use Sept. 29, 1966.

Class 6 — Chemicals and Chemical Compositions

SN 273,822. Wyrough and Loser, Inc., Trenton, N.J. Filed June 13, 1967.

For Vulcanizing Agents, Drying Agents, Reinforcing Fillers and Extenders, Anti-Aging Agents, Low Temperature Flexibilizing Agents, Heat-Stabilizing Agents, Anti-Radiation Agents, Antioxidants, Fluorescent Marking Agents, Chemical Stabilizing Agents, Pigments, Blowing Agents, Vulcanization Retarding Agents, and Flame Retarding Agents for Addition to Natural and Synthetic Rubbers and Synthetic Plastics (Int. Cls. 1 and 2).

First use Sept. 1, 1958.

SN 274,643. Ohio Valley Specialty Chemical Company, Marietta, Ohio. Filed June 23, 1967.

OV-1

For High Temperature Stability Gas Chromatographic Liquid Substrate (Int. Cl. 1).

First use January 1966.

SN 274,644. Ohio Valley Specialty Chemical Company, Marietta, Ohio. Filed June 23, 1967.

OV-17

For High Temperature Stability Gas Chromatographic Liquid Substrate (Int. Cl. 1).

First use Mar. 15, 1966.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 261,243. Robert F. Winans, Doylestown, Pa. Filed Dec. 21, 1966.

AMBOSELI

For Smoking Pipes (Int. Cl. 34).

First use on or about Sept. 18, 1958.

SN 277,902. Nathan Einhorn, Philadelphia, Pa. Filed Aug. 9, 1967.

SPIRO

For Pipes, Cigarette Mouthpieces, and Cigar Mouthpieces (Int. Cl. 34).

First use Feb. 1, 1950.

Class 11 — Inks and Inking Materials

SN 272,016. Howers Printing Ink Company, Chicago, Ill. Filed May 22, 1967.

CRYSTAL-BRITE

Owner of Reg. No. 804,119.

For Printing Ink (Int. Cl. 2).

First use Jan. 24, 1967.

Class 12 — Construction Materials

SN 252,811. Butler Manufacturing Company, Kansas City, Mo. Filed Aug. 22, 1966.

BUTLER*PANL

Owner of Reg. Nos. 528,706, 788,379, and others.

For Preformed Metal Panels for Buildings and the Like (Int. Cl. 6).

First use May 17, 1966; in or about 1916 as to "Butler."

SN 258,550. Johns-Manville Corporation, New York, N.Y. Filed Nov. 14, 1966.

FIRE-KING

For Roofing Shingles (Int. Cl. 19).

First use on or about Aug. 10, 1966.

SN 258,551. Johns-Manville Corporation, New York, N.Y. Filed Nov. 14, 1966.

FGA

For Roofing Shingles, Underlayment Felt, and Other Roofing Products Containing Fiber Glass and Asbestos (Int. Cl. 19).

First use May 2, 1966.

SN 261,530. Spring Hill Fuel Co., d.b.a. Aluminum Detail Products, Seattle, Wash. Filed Dec. 27, 1966.

ANOWHITE

For Metal Building Materials—Namely, Metal Sheets and Extrusions Formed and Fabricated for Application to Buildings, Doors, Windows, Screens for Doors and Windows, Downspouts and Gutters (Int. Cl. 6).

First use Dec. 13, 1966.

SN 263,930. Majestic Tile Company, Chicago, Ill. Filed Feb. 3, 1967.

INDEPENDENCE

For Imitation Brick Facing (Int. Cl. 19).
First use Sept. 10, 1965.

SN 273,061. The Gibson-Homans Company, Cleveland, Ohio. Filed June 5, 1967.

HANDI-SEAL

Owner of Reg. Nos. 692,274, 761,814, and others.
For Calking Compound (Int. Cl. 17).
First use at least as early as June 13, 1966.

SN 273,277. W. R. Grace & Co., New York, N.Y. Filed June 7, 1967.

PORETE

Owner of Reg. No. 623,868.
For Metal Reinforced Concrete Channel Slabs (Int. Cl. 19).
First use Aug. 16, 1946.

SN 274,638. W. R. Meadows, Inc., Elgin, Ill. Filed June 23, 1967.

GARDOX

For Joint Sealing Compound (Int. Cl. 17).
First use Dec. 14, 1964.

SN 287,596. Thermo-Kote of America, Incorporated, Bluffton, Ind. Filed Dec. 26, 1967.

VANFOM

For Cellulose Insulation Material (Int. Cl. 17).
First use Nov. 15, 1967.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 250,436. Merlin H. Albers, Pender, Nebr. Filed July 18, 1966.

HIT-N-GONE

For Clamps for Holding and Attaching an Insulator on Electric Fences (Int. Cl. 6).
First use May 20, 1966.

SN 258,211. Cathrineholm A/S, Halden, Norway. Filed Nov. 8, 1966.

LOTUS

For Enamelled Cooking Vessels—Namely, Pots, Frying Pans, Bowls, Casseroles, Serving Trays and Dishes, Lids Therefor; and Ice Buckets (Int. Cl. 21).
First use December 1962; in commerce December 1962.

SN 267,075. Talon, Inc., Meadville, Pa. Filed Mar. 20, 1967. Owner of Reg. No. 813,299.

For Slide Fasteners and Components Therefor (Int. Cl. 26).
First use on or about Feb. 1, 1959.

SN 283,060. Business Builders International Inc., Chicago, Ill. Filed Oct. 23, 1967.

GEO-METRIC

For Lawn Sprinklers (Int. Cl. 21).
First use May 27, 1967.

SN 284,419. The Akchurin Corporation, Hempstead, N.Y. Filed Nov. 9, 1967.

SEA

For Hardware Items—Namely, Machine, Stove, Carriage, Lag, and Toggle Bolts, Barrel Bolts, Wood Screws, Hinges, Safety Hasps, Butts, Sash Pulleys, Template Butts, and Catches (Int. Cl. 6).
First use on or about Dec. 30, 1965.

SN 286,408. Arc-Co Incorporated, Bridgeport, Conn. Filed Dec. 7, 1967.

ARC-CO

For Pipe Clamps (Int. Cl. 6).
First use Oct. 1, 1967.

Class 14—Metals and Metal Castings and Forgings

SN 273,425. Societe Generale du Magnesium, Paris, France. Filed June 8, 1967.

XMERAL

Owner of French Reg. No. 710,468, dated June 16, 1966.
For Common Rough or Semi-Finished Metals and Their Alloys in Bulk, Ingots, Bars, Sheets, Plates, Wire, Scrap and Particularly Alloys of Aluminum-Mercury With or Without the Addition of Other Metals Which May Be Used for Galvanic Anodes, Casings, or Machine Parts, etc. (Int. Cl. 6).

Class 15 — Oils and Greases

SN 266,189. Acheson Industries, Inc., Port Huron, Mich. Filed Mar. 8, 1967.

MOLYDAG

For Organic and Inorganic Substances in a Colloidal and/or Fine Particle State for Various Uses in the Industrial Arts—Namely, Metal Cutting and Metal Working Lubricants, High Temperature Lubricants, High Pressure Lubricants, Additives for High Temperature and High Pressure Lubricants for General Industrial and Automotive Uses, and Release Agents (Int. Cls. 4 and 1).
First use Feb. 24, 1967.

SN 276,053. Union Oil Company of California, Los Angeles, Calif. Filed July 14, 1967.

union 76

The drawing is lined for the colors blue and orange, but color is not claimed as a feature of the mark. Owner of Reg. Nos. 521,424, 739,640, and others.
For Motor Fuels—Namely, Gasoline and Diesel Fuel, and Lubricating Oils (Int. Cl. 4).
First use Dec. 29, 1966.

Class 16 — Protective and Decorative Coatings

SN 256,022. The Valspar Corporation, Rockford, Ill. Filed Oct. 7, 1966.

PRIME-RITE

Owner of Reg. No. 551,467.
For Metal Primers (Int. Cl. 2).
First use on or about Dec. 24, 1957.

SN 259,118. Imperial Chemical Industries Limited, London, England. Filed Nov. 21, 1966.

DISPERSYMER

Owner of British Reg. No. 873,252, dated Dec. 16, 1964.
For Paint-Like Baking Finishes for Metals (Int. Cl. 2).

Class 17 — Tobacco Products

SN 234,130. P. Lorillard Company, New York, N.Y. Filed Dec. 7, 1965.

DANVILLE

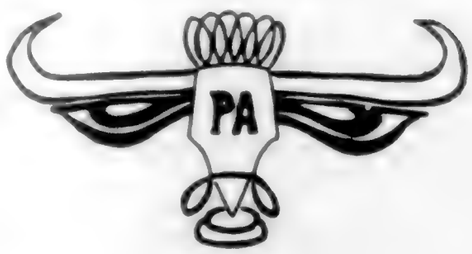
For Cigarettes (Int. Cl. 34).
First use Apr. 14, 1965.

SN 261,157. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Dec. 20, 1966.

TRIM

For Cigarettes (Int. Cl. 34).
First use Nov. 16, 1966.

SN 264,665. Glaser Bros., San Francisco, Calif. Filed Feb. 14, 1967.



For Cigars (Int. Cl. 34).
First use June 20, 1966.

SN 280,253. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Sept. 13, 1967.

BRYANT PARK

For Cigarettes (Int. Cl. 34).
First use Sept. 1, 1967.

SN 285,789. Brown & Williamson Tobacco Corporation, Louisville, Ky. Filed Nov. 29, 1967.

NEW LOOK

For Cigarettes (Int. Cl. 34).
First use Oct. 31, 1967.

SN 287,478. Brown & Williamson Tobacco Corporation, Louisville, Ky. Filed Dec. 26, 1967.

The lines on the drawing merely represent shading.
For Cigarettes (Int. Cl. 34).
First use on or about Aug. 24, 1967.

SN 288,474. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Jan. 10, 1968.

MAXIM

For Smoking Tobacco (Int. Cl. 34).
First use Jan. 4, 1968.

Class 18 — Medicines and Pharmaceutical Preparations

SN 239,158. Spartans Industries, Inc., New York, N.Y., by change of name from E. J. Korvette, Inc., New York, N.Y. Filed Feb. 18, 1966.

KOR-VAL

For Medicines and Pharmaceutical Preparations (Int. Cl. 5). First use May 1957.

SN 254,348. Western Lime Products Co., Pasadena, Calif. Filed Sept. 12, 1966.

For Mineral Supplements for Animal Feeds (Int. Cl. 5). First use 1937.

SN 255,820. Sanabo Fabrik Chemischer und Pharmazeutischer Produkte Dr. Karl und Maria Stosius, Vienna, Austria. Filed Oct. 5, 1966.

PANKRODIGEST

Owner of Austrian Reg. No. 9,938, dated Feb. 4, 1949.
For Pancreas Ferment Preparation (Int. Cl. 5).

SN 255,821. Sanabo Fabrik Chemischer und Pharmazeutischer Produkte Dr. Karl und Maria Stosius, Vienna, Austria. Filed Oct. 5, 1966.

SANABOLICUM

Owner of Austrian Reg. No. 48,799, dated Sept. 11, 1962.
For Anabolic Steroid for Intramuscular Injection (Int. Cl. 5).

SN 260,591. Scientific Laboratories, Incorporated, Oklahoma City, Okla. Filed Dec. 12, 1966.

EAR-O-SEPTIC

For Pharmaceutical Preparation for Treatment of Itching and Irritation of the Ears (Int. Cl. 5).
First use Nov. 9, 1966.

SN 262,620. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif. Filed Jan. 16, 1967.

METER MIST

Owner of Reg. No. 670,836.
For Preparation for Treatment of Asthma, Dispensed From an Oral Inhalator (Int. Cl. 5).
First use Oct. 1, 1964.

SN 263,004. Aristocrat, Inc., Columbus, Ohio. Filed Jan. 23, 1967.

HAIRSEPTIC

For Pharmaceutical Preparation for Treatment of Hair and Scalp Conditions Such as Minor Itch and Dandruff (Int. Cl. 5).
First use Apr. 4, 1965.

SN 265,209. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Feb. 21, 1967.

ZERAMYCIN

Owner of Reg. No. 577,504.
For Antibiotic Preparation (Int. Cl. 5).
First use Jan. 6, 1967.

SN 266,084. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 6, 1967.

VERRAMYCIN

Owner of Reg. No. 577,504.
For Antibiotic Preparation (Int. Cl. 5).
First use Dec. 29, 1966.

SN 266,362. Sandoz, Inc., Hanover, N.J. Filed Mar. 9, 1967.

FIOGESIC

Owner of Reg. No. 821,901.
For Analgesic, Decongestant, and Antihistamine Preparation (Int. Cl. 5).
First use Mar. 1, 1966.

SN 267,698. Vita Plus Corporation, Madison, Wis. Filed Mar. 27, 1967.

EGG-N-RICH

Owner of Reg. Nos. 723,922 and 792,119.
For Livestock Feed Supplement Containing Vitamins and Minerals (Int. Cl. 5).
First use Oct. 19, 1966.

SN 268,505. Marion Laboratories, Inc., Kansas City, Mo. Filed Apr. 6, 1967.

NITRO-BID

For Nitroglycerin Capsules (Int. Cl. 5).
First use May 13, 1966.

SN 268,891. Nutrition Square, Inc., Pittsburgh, Pa. Filed Apr. 11, 1967.

For Dietary Food Supplements Containing Vitamins and Minerals in the Form of Tablets, Herb Laxative Tea, and Vitamin Fortified Bone Meal (Int. Cl. 5).
First use Oct. 25, 1956.

SN 269,550. Merck & Co., Inc., Rahway, N.J. Filed Apr. 19, 1967.

CO-EDECRIN

Owner of Reg. No. 789,575.
For Diuretic Preparation (Int. Cl. 5).
First use Mar. 16, 1967.

SN 269,552. Merck & Co., Inc., Rahway, N.J. Filed Apr. 19, 1967.

CO-HydroDIURIL

Owner of Reg. No. 687,813.
For Diuretic Preparation (Int. Cl. 5).
First use Mar. 16, 1967.

SN 270,017. Theraplix, Paris, France. Filed Apr. 25, 1967.

TREVINTIX

Owner of French Reg. No. 525,821, dated Nov. 26, 1964 (Paris); Natl. Inst. No. 235,923.
For Tuberculostatic Preparation (Int. Cl. 5).

SN 270,331. Abbott Laboratories, North Chicago, Ill. Filed May 1, 1967.

CESCAN

For Radio-Pharmaceutical Diagnostic Preparation for Intravenous Administration (Int. Cl. 5).
First use Jan. 11, 1967.

SN 270,332. Abbott Laboratories, North Chicago, Ill. Filed May 1, 1967.

GLOFIL

For Radio-Pharmaceutical Diagnostic Preparation for Intravenous Administration (Int. Cl. 5).
First use Jan. 11, 1967.

SN 270,439. The Upjohn Company, Kalamazoo, Mich. Filed May 1, 1967.

ACT I

For Medicated Skin Preparation for the Treatment of Acne (Int. Cl. 5).
First use Feb. 21, 1967.

SN 270,440. The Upjohn Company, Kalamazoo, Mich. Filed May 1, 1967.

LINCO 4

Owner of Reg. No. 827,777.
For Antibiotic Feed Additive for Veterinary Use (Int. Cl. 5).
First use Dec. 10, 1965.

SN 270,441. The Upjohn Company, Kalamazoo, Mich. Filed May 1, 1967.

LINCO 50

Owner of Reg. No. 827,777.
For Antibiotic Feed Additive for Veterinary Use (Int. Cl. 5).
First use Dec. 10, 1965.

SN 270,442. The Upjohn Company, Kalamazoo, Mich. Filed May 1, 1967.

PLEXION

For Medicated Skin Preparation for the Treatment of Acne (Int. Cl. 5).
First use Feb. 21, 1967.

SN 270,701. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed May 4, 1967.

ANIDATE

For Hormone Preparations (Int. Cl. 5).
First use Apr. 3, 1967.

SN 271,020. American Cyanamid Company, Wayne, N.J. Filed May 9, 1967.

TETAMUNE

For Tetanus Immune Globulin (Int. Cl. 5).
First use Apr. 26, 1967.

SN 271,021. American Cyanamid Company, Wayne, N.J. Filed May 9, 1967.

PRO-TET

For Tetanus Immune Globulin (Int. Cl. 5).
First use Apr. 26, 1967.

SN 271,336. Atomic Basic Chemicals Corporation, Eighty Four, Pa. Filed May 12, 1967.

Fightin Feeno

For Anthelmintic for Destroying Internal Parasites in Cattle, Sheep, etc., Comprising Phenothiazine (Int. Cl. 5).
First use Feb. 20, 1967.

SN 271,608. Europharma International, Inc., Panama, Republic of Panama. Filed May 16, 1967.

PROMECO

Owner of Panamanian Reg. No. 8,321, dated Aug. 24, 1964.
For Pharmaceutical Preparations (Int. Cl. 5).

SN 272,070. The Kendall Company, Walpole, Mass. Filed May 22, 1967.

HYPER-PHOS

For Pharmaceutical Preparation Containing Sodium and Potassium Phosphates (Int. Cl. 5).
First use Jan. 13, 1966.

SN 272,647. USV Pharmaceutical Corporation, New York, N.Y. Filed May 29, 1967.

RHINOSPAN

For Orally Effective Nasal Decongestant (Int. Cl. 5).
First use Mar. 10, 1967.

SN 272,650. USV Pharmaceutical Corporation, New York, N.Y. Filed May 29, 1967.

VAPOSPAN

For Oral Bronchodilator and Sedative for Prophylaxis and Treatment of Bronchial Asthma (Int. Cl. 5).
First use Mar. 7, 1967.

SN 280,222. Flow Laboratories Incorporated, Rockville, Md. Filed Sept. 13, 1967.

hy-FLOW

For Sterile Contact Lens Wetting Solution (Int. Cl. 5).
First use Aug. 31, 1967.

SN 287,489. Parke, Davis & Company, Detroit, Mich. Filed Dec. 26, 1967.

COSANYL-DM

Owner of Reg. No. 309,888.
For Anti-Tussive Preparation (Int. Cl. 5).
First use on or before Dec. 4, 1967.

SN 288,571. American Home Products Corporation, New York, N.Y. Filed Jan. 11, 1968.

PLEASANT DREAMS

For Somnifacient (Int. Cl. 5).
First use Dec. 15, 1967.

Class 19—Vehicles

SN 230,369. Remcon Company, El Cajon, Calif. Filed Oct. 18, 1965.

SLAVE SAVER

For Cart for Trash Cans (Int. Cl. 12).
First use July 25, 1965.

SN 249,811. S. G. Tilden, Incorporated, Garden City, N.Y. Filed July 7, 1966.

NEO-DYNE

For Brake Linings Sold as a Component of Relined Brake Shoes (Int. Cl. 12).
First use Apr. 11, 1940.

SN 254,336. Universal Oil Products Company, Des Plaines, Ill. Filed Sept. 12, 1966.

AEROTHERM

For Seating Equipment for Airplanes and Other Passenger Carriers (Int. Cl. 12).
First use July 8, 1966.

SN 258,396. Monroe Auto Equipment Company, Monroe, Mich. Filed Nov. 10, 1966.

ULTRA

For Vehicle Shock Absorbers (Int. Cl. 12).
First use Mar. 1, 1964.

SN 268,389. E and E Specialties, Inc., Lawrence, Kans. Filed Apr. 5, 1967.

GIDGET

For Sailboats, Rowboats, Motor Boats, Boat Trailers, and Car Top Boat Carriers (Int. Cl. 12).
First use Mar. 10, 1967.

SN 287,101. Donald O. Rehm, d.b.a. Guaranty Cycle Company, St. Louis, Mo. Filed Dec. 18, 1967.

GUARANTY

For Bicycles (Int. Cl. 12).
First use 1939.

Class 20—Linoleum and Oiled Cloth

SN 271,455. Dunlop Semtex Limited, London, England. Filed May 15, 1967.

SELFSTIK

For Vinyl Flooring Tiles (Int. Cl. 19).
First use Mar. 31, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 242,314. American Telephone and Telegraph Company, New York, N.Y. Filed Mar. 31, 1966.

DATASPEED

For Teletypewriter Sets (Int. Cl. 9).
First use at least as early as January 1961.

SN 254,436. Coronado Manufacturing Company, Long Beach, Calif. Filed Sept. 14, 1966.

COROLITE

For Low Voltage Electric, Garden Light Fixtures (Int. Cl. 11).
First use June 1962.

SN 254,669. Canine Corps Signal Corporation, St. Louis, Mo. Filed Sept. 19, 1966.

K 9

For Electrical Home and Auto Burglar Alarm Systems (Int. Cl. 9).
First use Nov. 12, 1964.

SN 255,532. Data-Com Corporation, Birmingham, Ala., assignee of Telescriber Corporation, Birmingham, Ala. Filed Oct. 5, 1966.

TELESCRIBER

For Telephone Answering Apparatus Adapted To Record Incoming Telephone Messages and To Deliver to a Caller a Prerecorded Message (Int. Cl. 9).
First use Sept. 30, 1966.

SN 256,464. Musi-Cloud, Inc., Palos Park, Ill., assignee of Edward J. Murry, d.b.a. The Musi-Cloud Company. Filed Oct. 14, 1966.

For Loud Speaker Enclosures (Int. Cl. 9).
First use Aug. 19, 1966.

SN 257,934. Avnet, Inc., New York, N.Y., assignee of Channel Master Corporation, Ellenville, N.Y. Filed Nov. 4, 1966.

HORIZON

For Antennas, Parts Thereof, and Accessory Kits for Mounting Same (Int. Cl. 9).
First use Sept. 28, 1966.

SN 258,037. Brower Laboratories, Inc., Westboro, Mass. Filed Nov. 7, 1966.

For Laboratory Instruments—Namely, Low Noise Electronic Amplifiers, Synchronous Amplifiers, Recording Synchronous Amplifiers, Thermocouple Amplifiers, Ratio Multiplexing Amplifiers, Electronic Switches (Source Modulator) (Int. Cl. 9).
First use Nov. 7, 1962.

SN 258,602. The Standard Oil Company, Cleveland, Ohio. Filed Nov. 14, 1966.

VISTRON

For Plastic Lighting Louvers for Use as a Part of Electric Light Fixtures (Int. Cl. 11).
First use Nov. 2, 1966.

SN 260,757. The Rucker Company, Oakland, Calif., assignee of Moore Associates, Inc., San Carlos, Calif. Filed Dec. 14, 1966.

VBS

For Vehicular Radio Communication Receivers and Transmitters (Int. Cl. 9).
First use Mar. 26, 1965.

SN 262,778. Essex Wire Corporation, Fort Wayne, Ind. Filed Jan. 18, 1967.

XLPE

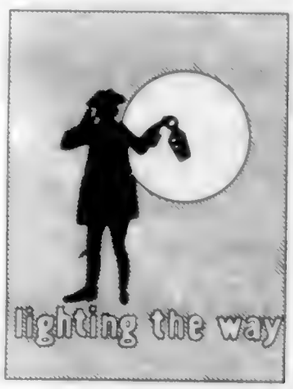
For Electrical Wire and Cable (Int. Cl. 9).
First use Apr. 25, 1966.

SN 264,617. UMC Industries, Inc., St. Louis, Mo. Filed Feb. 13, 1967.

WINSPEED

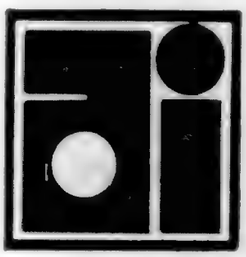
For Variable Speed Drives, Variable Speed Drive Electric Motor Controls, Electric Motors, Gear Motors, and Speed Reducers (Int. Cls. 7 and 9).
First use Sept. 28, 1966.

SN 264,797. C & H Electric Company, Chicago, Ill. Filed Feb. 16, 1967.



The drawing is lined for the color green.
For Electric Motors and Parts Therefor (Int. Cl. 7).
First use May 4, 1965.

SN 265,778. Alpha Industries, Inc., Newton Upper Falls, Mass. Filed Mar. 2, 1967.



The mark comprises the stylized letters "ai" and design.
For Microwave Diodes and Wave Guide Components (Int. Cl. 9).
First use January 1965.

SN 266,878. Goodall Manufacturing Corporation, Minneapolis, Minn. Filed Mar. 16, 1967.

CHARGE • ALL

For Battery Chargers, Activators, and Boosters (Int. Cl. 9).
First use July 15, 1966.

SN 267,012. The Chase-Shawmut Company, Newburyport, Mass. Filed Mar. 17, 1967.

CP6

For Power Fuses for the Protection of Electric Power Cables; Current Limiting Power Fuses for the Protection of Electric Power Cables; Fuse Holders for Power Fuses for the Protection of Electric Power Cables (Int. Cl. 9).
First use prior to Dec. 3, 1954.

SN 281,846. Hamlin, Inc., Lake Mills, Wis. Filed Oct. 5, 1967.

HAMLIN

For Electrical Switches and Switching Devices (Int. Cl. 9).
First use Sept. 6, 1953.

Class 22 — Games, Toys, and Sporting Goods

SN 254,535. Hamilton Equipment Corp., Brooklyn, N.Y. Filed Sept. 15, 1966.

SLENDERIDE

For Bicycle Exercisers (Int. Cl. 28).
First use June 30, 1966.

SN 257,343. American Character, Inc., New York, N.Y. Filed Oct. 27, 1966.

MAD MODS

Applicant disclaims the Exclusive use of the word "Mods."
For Dolls (Int. Cl. 28).
First use Sept. 30, 1966.

SN 259,101. Glendinning Companies, Inc., Westport, Conn. Filed Nov. 21, 1966.

For Promotional Printed Game Materials of the Public Participation Type Comprising Coupons, Envelopes for Containing Said Coupons, and Game Boards for Receiving Said Coupons for Distribution by Retail Outlets for Playing a Game To Stimulate the Sale of Their Goods and Services (Int. Cl. 28).
First use on or about Apr. 11, 1966.

SN 260,420. Franklin Manufacturing Co., Inc., d.b.a. Hanover Sports, Brockton, Mass. Filed Dec. 9, 1966.

KODIAK

For Ski Equipment (Int. Cl. 28).
First use Apr. 16, 1965.

SN 261,076. E. Edgar Handsby and Howard Tharp (joint venture), St. Louis, Mo. Filed Dec. 19, 1966.

CONFUSION

For Equipment Sold as a Unit for Playing a Board Game (Int. Cl. 28.)
First use Oct. 31, 1966.

SN 261,544. Wilson Sporting Goods Co., River Grove, Ill., assignee of Wilson Sporting Goods Co., River Grove, Ill. Filed Dec. 27, 1966.

THE A2000

Owner of Reg. No. 749,729.
For Baseball Gloves (Int. Cl. 28).
First use Aug. 2, 1957.

SN 263,012. Brunswick Corporation, Chicago, Ill. Filed Jan. 23, 1967.

BLUE SUPREME

Applicant disclaims the exclusive right to the word "Blue" apart from the mark as a whole.
For Tennis Racket String (Int. Cl. 28).
First use Sept. 28, 1966.

SN 263,636. World Toy House, Inc., St. Paul, Minn. Filed Jan. 30, 1967.

For Selected Group of Assorted Toys Contained in a Single Package (Int. Cl. 28).
First use in or about October 1966.

SN 268,069. Mueller Corporation, Akron, Ohio. Filed Mar. 31, 1967.

COMFO

For Rubber Ring Grips for Fishing Reel Back Plates (Int. Cl. 28).
First use in or about August 1934.

SN 270,422. Schoolhouse Industries, Inc., Commack, N.Y. Filed May 1, 1967.

For Equipment Sold as a Unit for Playing a Code Matching Educational Game (Int. Cl. 28).
First use Feb. 28, 1967.

SN 272,656. Wilson Sporting Goods Co., River Grove, Ill., assignee of Wilson Sporting Goods Co., River Grove, Ill. Filed May 29, 1967.

T2000

Owner of Reg. No. 749,729.
For Tennis Rackets (Int. Cl. 28).
First use Mar. 29, 1967.

SN 273,292. Kohner Bros., Inc., East Paterson, N.J. Filed June 7, 1967.

BUSY BODIES

For Equipment Sold as a Unit for Playing a Parlor Game (Int. Cl. 28).
First use Mar. 8, 1967.

SN 273,360. Atlantic Lures, Inc., Providence, R.I. Filed June 8, 1967.

KOBBLER

For Fishing Lures (Int. Cl. 28).
First use June 2, 1966.

SN 276,096. Peter A. Brett, Rowayton, Conn. Filed July 17, 1967.

TUF

For Mathematical Game Apparatus Comprising a Plurality of Cubes, Some Having Integers and Others Having Mathematical Operator Symbols Thereon (Int. Cl. 28).
First use June 26, 1967.

SN 277,996. Frank L. Foersehler, d.b.a. Huck Creek Bait Shop, Gravuis Mills, Mo. Filed Aug. 10, 1967.

MOON-EYED SHAD

The term "Shad" is disclaimed apart from the mark as shown.
For Fishing Lures (Int. Cl. 28).
First use June 2, 1967.

SN 280,398. Walter W. Collins, d.b.a. Walt Collins, Broken Arrow, Okla. Filed Sept. 15, 1967.

GLOW MASTER

The word "Glow" is disclaimed apart from use in the mark as shown.
For Plastic Worms Used as Artificial Fish Bait (Int. Cl. 28).
First use July 6, 1967.

SN 281,262. Aeroplane Tackle Manufacturing Company, Denver, Colo. Filed Sept. 27, 1967.

MARY POPPINS

"Mary Poppins" represents the name of a fictional fairy tale heroine.
For Fishing Spinners and Fish Lures (Int. Cl. 28).
First use on or about Aug. 1, 1967.

SN 281,940. Mattel, Inc., Hawthorne, Calif. Filed Oct. 6, 1967.

BABY TEENIETALK

No claim of exclusive right is made to "Baby" for dolls.
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Apr. 18, 1966.

SN 282,054. Cameo Doll Products Co., Inc., Port Allegany, Pa. Filed Oct. 9, 1967.

KEWPIE ♡ JOY

Owner of Reg. Nos. 707,169 and 776,119.
For Dolls (Int. Cl. 28).
First use Apr. 1, 1966.

SN 283,068. Mattel, Inc., Hawthorne, Calif. Filed Oct. 23, 1967.

FINGLES

For Finger Toy Puppets (Int. Cl. 28).
First use Oct. 3, 1967.

SN 286,686. Josef Ess, Allgäuer Skibeschlägefabrik, Allgau, Germany. Filed Dec. 11, 1967.

For Ski Bindings (Int. Cl. 28).
First use Aug. 3, 1960; in commerce September 1960.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 231,878. Andreas Stihl Maschinenfabrik, Waiblingen-Neustadt, Germany. Filed Nov. 1, 1965.

Owner of German Reg. No. 688,573, dated Mar. 13, 1956.
For Motor Chain Saws and Replacement Parts Therefor, Drilling Devices for Wood and Rocks, Drills for Planting-Holes, Brush Cutters, and Cutters for Tree Surgery (Int. Cl. 7).

SN 249,[illegible]3. Acushnet Process Company, New Bedford, Mass. Filed June 30, 1966.

K-COUPLING

For Tandem-Joined, Double Loop, Flexible Connector for Connecting Two Spaced Shafts or Members for Absorbing Vibrations Therebetween (Int. Cl. 7).
First use Mar. 18, 1966.

SN 250,127. Ashbrook Corporation, Houston, Tex. Filed July 13, 1966.

ASHBROOK
KINETICS

The word "Kinetics" is disclaimed apart from the mark as shown.

For Fluid Mixing Device—Namely, Internal Vortex and Mechanical Surface Liquid-Gas Mixing Systems Used Generally in the Operation of Industrial Waste and Other Treatment Systems (Int. Cl. 7).

First use May 31, 1966.

SN 250,864. Serena Industries, Chicago, Ill. Filed July 22, 1966.

FIESTA-TIME

For Hot Beverage Dispensers (Int. Cl. 11).

First use May 3, 1966.

SN 251,527. Frank W. Egan & Company, Somerville, N.J. Filed Aug. 2, 1966.

egan

For Machinery for Use in the Plastics, Paper Converting, Metal-Working, and Textile Industries (Int. Cl. 7).

First use on or about Apr. 9, 1948.

SN 251,569. UMC Industries, Inc., St. Louis, Mo. Filed Aug. 3, 1966.

FLO-BLEND

For Apparatus for Dispensing Carbonated Beverages Consisting of a Source of Carbonated Water, a Source of Syrup and Means for Mixing Metered Amounts of Carbonated Water and Syrup Together To Produce Carbonated Beverages (Int. Cl. 9).

First use July 15, 1966.

SN 254,549. Mastercraft Engineering Company, Minneapolis, Minn. Filed Sept. 15, 1966.

MASTER CRAFT

For Hand Tools—Namely, Hand-Operated Power Jig Saws and Sabre Saws (Int. Cl. 7).

First use in or about May 1965.

SN 255,655. B. Thies K. G. Spezialmaschinenfabrik, Coesfeld, Westphalia, Germany. Filed Oct. 3, 1966.

duo-bloc

Owner of German Reg. No. 767,036, dated Nov. 2, 1962.

For Bleaching and Dyeing Machines for the Textile Industry (Int. Cl. 7).

SN 255,656. B. Thies K. G. Spezialmaschinenfabrik, Coesfeld, Westphalia, Germany. Filed Oct. 3, 1966.

DUO-BLOC

Owner of German Reg. No. 759,638, dated Mar. 22, 1962.

For Bleaching and Dyeing Machines for the Textile Industry (Int. Cl. 7).

SN 255,657. B. Thies K. G. Spezialmaschinenfabrik, Coesfeld, Westphalia, Germany. Filed Oct. 3, 1966.

DUO-MAT

Owner of German Reg. No. 760,610, dated Apr. 19, 1962.

For Bleaching and Dyeing Machines for the Textile Industry (Int. Cl. 7).

SN 255,658. B. Thies K. G. Spezialmaschinenfabrik, Coesfeld, Westphalia, Germany. Filed Oct. 3, 1966.

duo-maf

Owner of German Reg. No. 767,584, dated Nov. 19, 1962.

For Bleaching and Dyeing Machines for the Textile Industry (Int. Cl. 7).

SN 256,322. Anna Stolzer, d.b.a. Firma Karl Stolzer, Achern, Baden, Germany. Filed Oct. 12, 1966.

KASTO

Owner of German Reg. No. 716,606, dated Aug. 12, 1958.

For Band Saws, Bow Saws, Cold and Hot Rotary Saws; Abrasive and Cutting-Off Machines; Machines for Electro-Erosive Cutting Off; Tools Pertaining to the Above—Namely, Saw Blades and Discs; Machines for Grinding and Sharpening Said Tools (Int. Cl. 7).

First use 1947; in commerce Jan. 2, 1960.

SN 256,655. Elba Werk Ettlinger Baumaschinen- und Hebezeugfabrik G.m.b.H., Ettlingen, Baden, Germany. Filed Oct. 18, 1966.

ELBA

For Hand Scrapers, Scraper Winches With and Without Running Gear, Jib Scraping Devices; Feeders; Concrete Mixers; Cement Worm Conveyors; Stationary and Movable Concrete Preparation Devices; Control and Regulating Devices for Concrete Preparation Machines and Parts Thereof; Combinations and Parts of the Aforementioned Goods (Int. Cls. 7 and 8).
First use 1950; in commerce 1958.

SN 257,302. Mono Pumps Limited, London, England. Filed Oct. 26, 1966.

MUTRATOR

Owner of British Reg. No. 845,927, dated Mar. 1, 1963.
For Pumps Incorporating Elutriating and Solids Comminuting Devices for Handling Raw Sewage and Trade Wastes (Int. Cl. 7).
First use January 1963; in commerce Oct. 15, 1963.

SN 257,621. Hahn, Inc., Evansville, Ind. Filed Oct. 31, 1966.

POW-R-VAC

For Power Lawn Mower Housing (Int. Cl. 7).
First use during October 1962.

SN 258,010. Westinghouse Air Brake Company, Chicago, Ill. Filed Nov. 4, 1966.

GYROZONTAL

For Crushing Machinery (Int. Cl. 7).
First use Sept. 30, 1966.

SN 258,778. Borg-Warner Corporation, Chicago, Ill. Filed Nov. 16, 1966.

QUADRIPLEX

For Rotating Shaft Bearings (Int. Cl. 7).
First use on or prior to Sept. 6, 1966.

SN 262,397. Bilt-Rite Equipment Co., Inc., West Caldwell, N.J. Filed Jan. 12, 1967.

BILT-RITE

For Mechanical Units Used for the Purpose of Transferring Goods From One Place to Another—Namely, Belt Conveyors (Int. Cl. 7).
First use May 7, 1963.

SN 262,719. TRW Inc., Euclid, Ohio. Filed Jan. 17, 1967.

MRC TRW

Owner of Reg. No. 528,062 and others.
For Ball, Roller and Laminated Bearings (Int. Cl. 7).
First use Aug. 11, 1966.

SN 262,929. Drafto Corporation, Cochranton, Pa. Filed Jan. 20, 1967.

DRAFTO

Owner of Reg. No. 384,113.
For Machine Shop Equipment and accessories—Namely, Overhead Traveling Crane Blocks, Motorized Crane Hook Blocks, Weighting Crane Hook Blocks, Interchangeable Load Section Hook Blocks, Crane Wheels, Crane Wheel Assemblies, Conversion Crane Wheel Units, Crane Parts and Subassemblies Thereof, Gears, Pinions, Axles, Sheaves, Pins, Shafting, Flexible Couplings, Gear Type Flexible Couplings, Gear Type Spindles, Rigid Couplings and Flange Couplings for Driving Rolling Mills, Disintegrators, and Component Parts Thereof
First use Nov. 30, 1944.

SN 263,545. Dazey Products Company, Kansas City, Mo. Filed Jan. 30, 1967.

DAZEY TWIN

Owner of Reg. Nos. 147,298, 737,102, and others.
For Combination Can Opener and Ice Crusher (Int. Cl. 21).
First use Jan. 11, 1967.

SN 263,683. The New York Air Brake Company, New York, N.Y. Filed Jan. 31, 1967.

BIF

For Plunger Type Chemical Pumps, Diaphragm Type Chemical Pumps, Lime Slakers, Variable Speed Transmissions, Devices for Splitting Filled Bags, Hopper Agitators, Bucket Elevators, Belt Conveyors, Bulk Material Proportioning Machines, and Parts and Accessories Therefor (Int. Cl. 7).
First use May 1955, on bucket elevators.

SN 265,544. Mor-Win Products, Inc., Los Angeles, Calif. Filed Feb. 28, 1967.

MOR-WARE

For Cutlery—Namely, Plastic Spoons, Forks, and Knives (Int. Cl. 8).
First use Nov. 25, 1966.

SN 267,572. Yeomans Brothers Company, Melrose Park, Ill. Filed Mar. 24, 1967.

SIGMA

For Surface Aerators (Int. Cl. 7).
First use Feb. 27, 1967.

SN 268,036. Degremont S.A., Suresnes (Seine), France. Filed Mar. 31, 1967.

OXYCONTACT

Owner of French Reg. No. 8,102, dated Apr. 14, 1964 (Versailles); Natl. Inst. No. 228,321.
For Sewage Disposal and Reduction Plants (Int. Cl. 11).

SN 268,570. Brother International Corporation, New York, N.Y. Filed Apr. 7, 1967.

WEBSTER ZIP-1000

For Electric Pencil Sharpeners and Letter Openers, in Combination and Separately (Int. Cl. 16).
First use Jan. 15, 1967.

SN 268,967. MIF Industries, Inc., Branford, Conn., by change of name from Malleable Iron Fittings Co., Branford, Conn. Filed Apr. 12, 1967.

GALVA-MATIC

For Galvanizing System Equipment Comprising a Conveyor, an Automatic Skimmer, an Automatic Zinc Eliminator, Pickling Apparatus, a Rotary Quench, a Drier, and Parts Thereof (Int. Cl. 7).
First use Jan. 3, 1967.

SN 269,941. Sweet Manufacturing Company, Springfield, Ohio. Filed Apr. 24, 1967.

SILVER-SWEET

For Farm Elevator Machinery—Namely, Elevator Legs (Int. Cl. 7).
First use Apr. 3, 1967.

SN 270,578. Kinetics Corporation of California, Solana Beach, Calif. Filed May 3, 1967.

STRIPALL

For Thermal Wire Stripper (Int. Cl. 7).
First use Feb. 27, 1964.

SN 272,834. Harry Hinde, d.b.a. Prawnto Shrimp Machine Co., Los Angeles, Calif. Filed June 1, 1967.

For Shrimp Cutting and De-Veining Machine (Int. Cl. 7).
First use July 1, 1953.

SN 272,858. Sargent Engineering Corporation, Fort Dodge, Iowa. Filed June 1, 1967.

HYDRA-TERRAIN

For Cranes (Int. Cl. 7).
First use Mar. 1, 1967.

SN 280,194. Farm Fans, Inc., Indianapolis, Ind. Filed Sept. 13, 1967.

DRY-O-VATOR

For Auger Assembly for Circulating Grain in Grain Storage Bins (Int. Cl. 7).
First use Aug. 30, 1967.

Class 24 — Laundry Appliances and Machines

SN 287,333. Ametek, Inc., New York, N.Y. Filed Dec. 21, 1967.

CHORE BOY

For Laundry Machines (Int. Cl. 7).
First use Sept. 12, 1967.

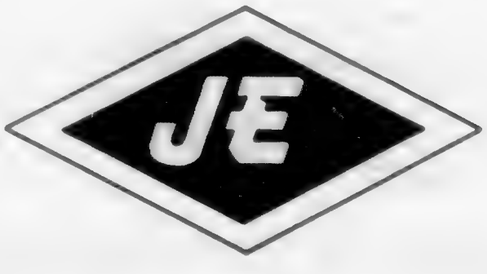
Class 25 — Locks and Safes

SN 269,571. Sargent & Greenleaf, Inc., Rochester, N.Y. Filed Apr. 19, 1967.

UNI-VERS

For Panic Exit Devices (Int. Cl. 6).
First use January 1965.

SN 272,381. Jackes-Evans Manufacturing Company, St. Louis, Mo. Filed May 25, 1967.



For Padlocks (Int. Cl. 6).
First use Oct. 19, 1966.

Class 26—Measuring and Scientific Appliances

SN 226,274. Olympus Optical Company Limited, Shibuya-ku, Tokyo, Japan. Filed Aug. 23, 1965.

OLYMPUS QUICKMATIC

Priority claimed under Sec. 44(d) on Japanese application filed Mar. 23, 1965; Reg. No. 762,281, dated Nov. 20, 1967. Owner of U.S. Reg. Nos. 647,456 and 657,415.

For Photographic Apparatus and Instruments, Their Parts and Accessories—Namely, Lenses, Attachments for Lenses for Close-Up, Lens Hoods, Filter Sets, Flash Units, Films, Lens Caps, Exposure Meters, Releases, Accessory Shoes, Self Timers, Bellows, Extension Rings, Carrying Cases, Carrying Straps, Microphotographic Equipment, Battery Testers, Flash Gun Holders, Telescope Finders, Tripods, Film Splicers, Pint Glasses for Photographic Equipment and Light Adapters for Photographic Equipment (Int. Cl. 9).

SN 238,275. James J. Oussani, d.b.a. The Staplex Company, Brooklyn, N.Y. Filed Feb. 7, 1966.

STAPLEX

Owner of Reg. Nos. 540,853, 601,607, and 771,731.

For Air Sampling Equipment—Namely, a Suction Blower Device Including Filters for Effecting Entrapment of Air Borne Particulate Matter To Permit Accurate Sampling and Measurement Thereof (Int. Cl. 9).

First use May 1, 1950.

SN 240,508. Cryocal, Inc., Riviera Beach, Fla. Filed Mar. 9, 1966.

CryoResistor

For Temperature Sensors (Int. Cl. 9).

First use Dec. 7, 1965.

SN 247,924. Houston Fearless Corporation, Los Angeles, Calif. Filed June 13, 1966.

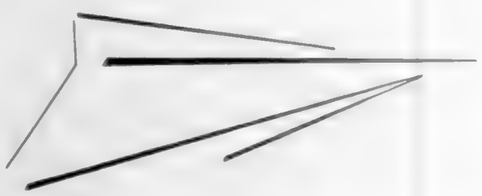
COLOR LABMASTER

The word "Color" is disclaimed apart from the mark as a whole.

For Photographic Film Processor (Int. Cl. 9).

First use Mar. 21, 1966.

SN 251,885. Braincon Corporation, Marion, Mass. Filed Aug. 8, 1966.



For Instruments Used for Marine Research—Namely, Inclinometers, Thermographs, Temperature-Depth Recorders, Current Meters, Tide Recorders, and Depth Recorders (Int. Cl. 9).

First use Mar. 31, 1964.

SN 253,017. Control Data Corporation, Minneapolis, Minn. Filed Aug. 24, 1966.

DIGISCRIBE

For Computer Entry and Display Station Comprising a Cathode Ray Display Tube and Electronic Keyboard, for Operator Communications With a Computer (Int. Cl. 9).

First use Feb. 8, 1966.

SN 254,294. Kemlon Products & Development Company, Houston, Tex. Filed Sept. 12, 1966.

KEMLON

For Combination Pump and Gas Compressor Unit for Metering Liquids and Gases in Chemical Plants (Int. Cl. 9).

First use on or about Sept. 4, 1956.

SN 254,890. Raden C. Auto-Step Co., Inc., Kansas City, Mo. Filed Sept. 21, 1966.

RADEN C

Owner of Reg. No. 817,757.

For Templates, Guides, Contact Pads, Step Masking Sheets, and Apparatus for Holding Negatives Sold Separately and in Kit Form for Use in Making Step and Repeat Photographic Images Used in the Graphic Arts (Int. Cl. 9).

First use during August 1956.

SN 256,230. Pacific Measurements Incorporated, Palo Alto, Calif. Filed Oct. 11, 1966.

For Analog Instrumentation—Namely, CRT Display Converters (Int. Cl. 9).

First use Sept. 12, 1966.

SN 257,725. The Sippican Corporation, Marion, Mass. Filed Nov. 1, 1966.

SIPPICAN

Owner of Reg. No. 735,936.

For Oceanographic Apparatus — Namely, Bathythermographic Probes, Probe Assemblies, Launchers, Recorders, Transducers, Transducer Assemblies, Signal Conditioning Equipment, and Plotters (Int. Cl. 9).

First use in or about July 1964.

SN 262,028. Debs Sunglass Corporation, North Hollywood, Calif. Filed Jan. 6, 1967.

MONKEE SHADES

For the purposes of registration, no claim is made to the exclusive right to use "Shades" but applicant waives none of its common law rights in the mark as shown in the drawing or any feature thereof.

For Sunglasses (Int. Cl. 9).

First use Nov. 16, 1966.

SN 265,176. Clay-Adams, Inc., New York, N.Y. Filed Feb. 21, 1967.

SERO-WASHER

For Devices for Automatically Filling and Emptying Test Tubes (Int. Cl. 9).

First use Dec. 7, 1966.

SN 266,316. Elektro-Physik Hans Nix & Dr. Ing. Stein-Groever K.G., Cologne-Niehl, Germany. Filed Mar. 9, 1967.

PERMAGRAPH

For Apparatus for Measuring Magnetic Properties (Int. Cl. 9).
First use November 1961; in commerce November 1963.

SN 266,919. John Rechtfertig, d.b.a. Di-Cu Company, Fairfax, Calif. Filed Mar. 16, 1967.

DI-CU

For Drafting Templates (Int. Cl. 16).
First use Feb. 1, 1965.

SN 270,597. Edward L. McLaughlin, Jr., d.b.a. Elmco Manufacturing Co., Randolph, Mass. Filed May 3, 1967.

ELMCO TRUE VIEW

For Kit for Reconstructing and Thereby Analyzing Traffic Accidents (Int. Cl. 9).
First use June 1, 1962.

SN 275,850. Paul S. Heitman, d.b.a. Gem-Mounts and Gem-Masks Company, New York, N.Y. Filed July 12, 1967.

GEM

Owner of Reg. Nos. 793,315 and 793,316.
For Cardboard, Paper, Foil, and Combination Paper and Foil, and Photographic Transparency Slide Binders (Int. Cl. 16).
First use during 1950.

SN 276,333. Materiel Experimental Scientifique Matex SA, Lausanne, Switzerland. Filed July 19, 1967.

MATEX

Owner of Swiss Reg. No. 175,872, dated June 2, 1959.
For Teaching Materials, Comprising Sets for Performing Experiments in Physics, Chemistry, and Biology (Int. Cl. 9).

SN 284,428. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Nov. 9, 1967.

WOLLENSAK

Owner of Reg. Nos. 620,840, 738,657, and 825,318.
For Video Tape Recorder (Int. Cl. 9).
First use Sept. 9, 1966.

SN 285,886. Flex Electric Products Co., Inc., Long Island City, N.Y. Filed Nov. 30, 1967.

PATHFINDER

For Electrically Illuminated Magnifying, Reading Glass (Int. Cl. 9).
First use July 3, 1967.

Class 27 — Horological Instruments

SN 254,330. Tressa Watches Co., Ltd., Bienne, Switzerland. Filed Sept. 12, 1966.

TRESSA

For Watches, Clocks, Watch Movements, and Parts Thereof (Int. Cl. 14).
First use October 1961; in commerce February 1962.

SN 260,646. Bulova Watch Company, Inc., Flushing, N.Y. Filed Dec. 13, 1966.

SEA HUNTER

Owner of Reg. Nos. 380,471, 700,158, and others.
For Watches (Int. Cl. 14).
First use Dec. 5, 1966.

Class 29 — Brooms, Brushes, and Dusters

SN 266,633. Johnson & Johnson, New Brunswick, N.J. Filed Mar. 14, 1967.

J CLOTH

The word "Cloth" is disclaimed.
For All Purpose Cleaning Cloths (Int. Cl. 21).
First use Dec. 20, 1966.

Class 31 — Filters and Refrigerators

SN 223,101. Charles Pierre Doucet, Meyrin-Geneve, Switzerland. Filed July 12, 1965.

DOUCET

Priority claimed under Sec. 44(d) on Swiss Reg. No. 208,509, dated Jan. 14, 1965. The word "Doucet" is disclaimed apart from the mark. The meaning of the word "Doucet" is "meek" or "mild."
For Liquid Filtration and Purification Systems, Sold as a Unit, and Parts Thereof (Int. Cl. 11).

SN 235,457. Talon, Inc., Meadville, Pa. Filed Feb. 23, 1966.

For Molded Plastic Parts for Refrigerators (Int. Cl. 11).
First use in or about December 1956.

SN 249,690. Walker Manufacturing Company, Racine, Wis. Filed July 6, 1966.

GUARDIAN

For Automotive Oil, Automotive Air, and Automotive Gasoline Filters (Int. Cl. 12).
First use May 9, 1966.

SN 255,889. The Garrett Corporation, Los Angeles, Calif. Filed Oct. 6, 1966.

For Water Separators for Removing Water From Fluids in a Fluid Conditioning System; Filters for Gaseous and Liquid Fluids; Refrigeration Packages—Namely, Refrigeration Units for Air Conditioning, and Control Components Including Ducts and Flow Control Valves for Distribution and Control of the Conditioned Air; Refrigeration Units for Use as a Component Part of a Fluid Conditioning System; Compressors for Compressing Gases and Vapors for Use as a Refrigerant; Vapor Cycle Refrigeration Components—Namely, Expansion Valves, Evaporators, and Condensers; Food Locker Refrigeration Units; and Vortex Tube Refrigeration Units (Int. Cls. 7 and 11).
First use Dec. 5, 1955.

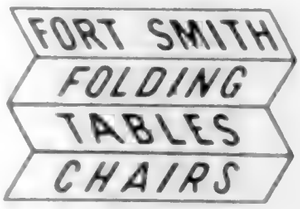
SN 256,214. A. Gusmer, Inc., Hoboken, N.J. Filed Oct. 11, 1966.

CELLUPORE

For Membrane Filters for Purifying Liquids (Int. Cl. 11).
First use June 28, 1966.

Class 32 — Furniture and Upholstery

SN 244,480. Fort Smith Plywood Company, South Fort Smith, Ark. Filed Apr. 28, 1966.



The words "Folding Tables Chairs" are disclaimed apart from the mark as shown.
For Folding Tables and Chairs (Int. Cl. 20).
First use September 1955.

SN 255,894. Helene Curtis Industries, Inc., Chicago, Ill. Filed Oct. 6, 1966.

COLOR MIRROR

The word "Mirror" has been disclaimed apart from the mark as shown.
For Mirror and Printed Hair Style Cut Outs Sold Therewith (Int. Cl. 20).
First use on or about Feb. 15, 1966.

SN 268,894. Plastic Industries, Inc., Athens, Tenn. Filed Apr. 11, 1967.

carv/craft

For Moulded Plastic Furniture Components — Namely, Drawer Fronts, Chair Backs, Bed Splats, Furniture Legs, and Furniture Rails (Int. Cl. 20).
First use January 1967.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 257,097. Haveg Industries, Inc., Wilmington, Del., assignee of A. O. Smith Corporation, Milwaukee, Wis. Filed Oct. 24, 1966.

Glascote

Owner of Reg. Nos. 243,975, 506,826, and others.
For Water Heaters and Parts Thereof (Int. Cl. 11).
First use Dec. 12, 1964.

SN 260,779. The Standard Oil Company, Cleveland, Ohio. Filed Dec. 14, 1966.

VISTRON

For Plastic Lighting Louvers for Use as a Part of Gas Light Fixtues (Int. Cl. 11).
First use Nov. 15, 1966.

SN 265,256. Acro Welder Mfg. Co., Milwaukee, Wis. Filed Feb. 23, 1967.

ACROTRON

Owner of Reg. Nos. 549,447, 806,364, and others.
For Welding Machinery—Namely, Electric Arc Welders, Electric Resistance Welders, Electron Beam Welders, Plasma Arc Welders, and Controls Therefor (Int. Cls. 7 and 9).
First use Feb. 14, 1967.

SN 273,208. Aztec Industries, Inc., Santa Fe, N. Mex., assignee of Reynolds Electrical & Engineering Co., Inc., Santa Fe, N. Mex. Filed June 6, 1967.

SOL-DIFUZE

For Electrical Radiant Heating Panels (Int. Cl. 11).
First use May 23, 1967.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 255,922. Rich Manufacturing Company of California, Corona, Calif. Filed Oct. 6, 1966.

RICH-SEAL

For Non-Metal Seal Device for Use Between the Ends of Cast Iron Pipe Sections (Int. Cl. 17).
First use Sept. 13, 1966.

SN 260,446. Alec W. Niconchuk, d.b.a. North Shore Laboratories, Peabody, Mass. Filed Dec. 9, 1966.

TIGER TAILS

For Repair Kits for Tubeless Tires (Int. Cl. 12).
First use Sept. 1, 1966.

SN 266,209. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Mar. 8, 1967.

Owner of Reg. Nos. 173,619, 779,387, and others.
For Pneumatic Tire Repair Materials—Namely, Tread Gum, Tube Gum, Stripping and Undertread Stock, Cushion Gum Cream, Repair Fabric and Patches, Filler Strip, and Sidewall Veneer Rubber (Int. Cl. 12).
First use Feb. 1, 1965.

SN 268,167. Durkee-Atwood Company, Minneapolis, Minn. Filed Apr. 3, 1967.

KWIK-FLEX

Owner of Reg. No. 588,886.
For Automotive Radiator Hose (Int. Cl. 17).
First use Sept. 16, 1952.

SN 269,651. Dunlop Tire and Rubber Corporation, Buffalo, N.Y. Filed Apr. 20, 1967.

REMINGTON UNIVERSAL TRACTION

The word "Traction" is disclaimed apart from the mark as a whole. Owner of Reg. Nos. 530,845, 615,788, and 822,865.
For Tires (Int. Cl. 12).
First use Jan. 2, 1967.

Class 36 — Musical Instruments and Supplies

SN 240,035. Jules Steinman, d.b.a. Crown City Imports, Pasadena, Calif. Filed Mar. 2, 1966.

CROWN

For Musical Instruments—Namely, Guitars, Banjos, Ukeleles, and Drums, and Amplifiers for the Named Musical Instruments (Int. Cls. 9 and 15).
First use July 15, 1965.

SN 255,688. Balfour Electronics Limited, Chadwell Heath, Essex, England. Filed Oct. 4, 1966.

PRINCESS

For Phonograph Record Changers (Int. Cl. 9).
First use Aug. 31, 1964; in commerce Aug. 31, 1965.

SN 257,228. Johnny Charles Thompson, d.b.a. Guitarsville Records and Johnny Thompson Guitars and Drums, Monterey Park, Calif. Filed Oct. 26, 1966.

For Phonograph Records (Int. Cl. 9).
First use Sept 12, 1966.

SN 259,607. Dorcie Vickers, Cambridge City, Ind. Filed Nov. 28, 1966.

PAT

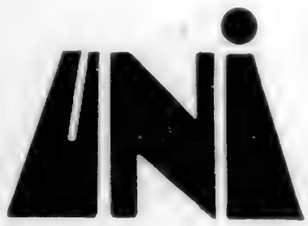
For Phonograph Records (Int. Cl. 9).
First use Aug. 18, 1966.

SN 266,556. MCA Inc., Universal City, Calif. Filed Mar. 13, 1967.

UNI

For Phonograph Records (Int. Cl. 9).
First use Feb. 6, 1967.

SN 266,557. MCA Inc., Universal City, Calif. Filed Mar. 13, 1967.



For Phonograph Records (Int. Cl. 9).
First use Feb. 6, 1967.

Class 37—Paper and Stationery

SN 249,239. International Paper Company, New York, N.Y. Filed June 29, 1966.

DATA-SPEED

For Paper Sold in Bulk Rolls or Bulk Reams for Conversion Only Into Business Forms (Int. Cl. 16).
First use Mar. 25, 1966.

SN 253,394. American Jet Spray Industries, Inc., Lakewood, Colo. Filed Aug. 29, 1966.

COLOR STROKE

For Marking Pens (Int. Cl. 16).
First use May 10, 1966.

SN 257,928. The Budd Company, Philadelphia, Pa. Filed Nov. 4, 1966.

REGATTA

For Cover Paper (Int. Cl. 16).
First use at least as early as June 28, 1966.

SN 262,942. Kimberly-Clark Corporation, Neenah, Wis. Filed Jan. 20, 1967.

MISTIES

Owner of Reg. Nos. 730,117, 749,221, and 766,402.
For Absorbent Paper Tissue, Suitable for Hygienic, Cosmetic, and Cleansing Purposes (Int. Cl. 16).
First use Jan. 16, 1967.

SN 269,135. Wilson Jones Company, Niles, Ill. Filed Apr. 13, 1967.

FAVORITE

Owner of Reg. Nos. 217,402 and 224,456.
For Desk File Pockets, Shelf File Pockets, Document Mailing Envelopes, Expanding Envelopes, File Pockets, Vertical Filing Jackets, Expanding File Folders, Desk File Folders, Student File Folders, Home File Folders, Banker Sorting File Folders, Card Index File Folders, Wallets Made of Paper for Reception of Letters, Papers and Documents for Placement in Desks or Filing Cabinets and File Folders for Placement on Desks for Classifying Documents (Int. Cl. 16).
First use 1915.

SN 269,459. Scoville Manufacturing Company, Waterbury, Conn. Filed Apr. 18, 1967.

Owner of Reg. Nos. 284,266, 804,997, and others.
For Stationery Supplies Made of Metal—Namely, Devices for Holding Together Sheets of Paper or the Like (Int. Cl. 16).
First use 1850, on metal products.

SN 269,984. Finch, Pruyn and Company, Incorporated, Glens Falls, N.Y. Filed Apr. 25, 1967.

No claim is made to the word "Paper" apart from the mark.
Owner of Reg. No. 774,144.
For Printing, Duplicating and Xerographic Copy Papers (Int. Cl. 16).
First use Mar. 17, 1967; July 1, 1959 as to the word "Finch."

SN 276,662. Hamersley Paper Mills, Inc., Garfield, N.J. Filed July 24, 1967.

ALUMI GARD

For Bleached Sulphate Paper Bearing a Coating Containing Aluminum (Int. Cl. 16).
First use Jan. 11, 1967.

Class 38—Prints and Publications

SN 258,304. General Precision, Inc., Binghamton, N.Y. Filed Nov. 9, 1966.

VAMP

For Motion Picture Films for Use in Aircraft Training (Int. Cl. 9).
First use Sept. 12, 1966.

SN 261,023. The American Oil Company, Chicago, Ill. Filed Dec. 19, 1966.

No exclusive claim is made to the words "Motor Club" apart from the mark as shown. Owner of Reg. Nos. 579,567, 811,112, and others.

For Travel Information Publications—Namely, Magazines, Road Maps, Printed Information Request Cards, Printed Trip Expense Books, Road and Highway Condition Bulletins, Personalized Travel Information Guidebooks, Motor Club Membership Handbooks, and Directories (Int. Cl. 16).

First use July 13, 1965.

SN 261,028. The American Oil Company, Chicago, Ill. Filed Dec. 19, 1966.

Owner of Reg. Nos. 443,855, 811,112, and others.

For Travel Information Publications—Namely, Magazines, Road Maps, Printed Information Request Cards, Printed Trip Expense Books, Road and Highway Condition Bulletins, Personalized Travel Information Guidebooks, Motor Club Membership Handbooks, and Directories (Int. Cl. 16).

First use July 13, 1965.

SN 261,053. Dun & Bradstreet, Inc., New York, N.Y. Filed Dec. 19, 1966.

D&B

For Credit, Financial, Marketing, Sales, and Educational Books, Pamphlets, and Reports (Int. Cl. 16).

First use in or about 1933.

SN 264,326. Medalist Publications, Inc., Chicago, Ill. Filed Feb. 9, 1967.

SERVICE WORLD

For Magazine and Section of a Magazine (Int. Cl. 16).

First use on or about Nov. 3, 1966.

SN 265,611. The Copley Press, Inc. La Jolla, Calif. Filed Feb. 28, 1967.

Owner of Reg. No. 734,558.

For Advertising Pages for Insertion in Newspapers (Int. Cl. 16).

First use May 2, 1966.

SN 265,975. Brunswick Corporation, Chicago, Ill. Filed Mar. 6, 1967.

PROFILE OF PEOPLE AND PRODUCTS

For Magazine Publication and, Specifically, a Publication Used Primarily for Internal and External Public Relations (Int. Cl. 16).

First use August 1964.

SN 266,199. William L. Cicciarelli, Gray, Pa. Filed Mar. 8, 1967.

For Charts Designed To Be Used in Solving Three Dimensional Mathematical Problems (Int. Cl. 16).

First use Jan. 29, 1966.

SN 266,379. United Business Service Company, Boston, Mass. Filed Mar. 9, 1967.

A MAN'S JUDGMENT IS NO BETTER THAN HIS INFORMATION

For Economic Service Publication—Namely, Business and Investment Report Issued Each Week (Int. Cl. 16).

First use May 29, 1921.

SN 273,501. Haywood Publishing Company, d.b.a. Oakes Consumer Catalogs, New York, N.Y. Filed June 9, 1967.

SANTA'S TOYLANE

Owner of Reg. No. 644,756.

For Consumer Catalogs, Published Annually (Int. Cl. 16).

First use in August 1967.

SN 284,333. Guaranteed Exposure, Inc., Philadelphia, Pa. Filed Nov. 8, 1967.

REAL DOUGH

For Promotional Coupons for Promoting the Sale of Goods by Others (Int. Cl. 16).

First use Nov. 3, 1967.

SN 285,496. Patch The Pony, Inc., Florence, Ala., assignee of Margaret H. Liles, Florence Ala. Filed Nov. 24, 1967.

For Educational Materials — Namely, Printed Coloring Books, Decals, Film Strip and Sound Recording Sold Together as a Unit, Informational Pamphlets, Printed Posters, and Children's Illustrated Story Pamphlets (Int. Cl. 16).

First use at least as early as Sept. 18, 1964.

Class 39 — Clothing

SN 255,218. Matsil Brothers, Inc., New York, N.Y. Filed Sept. 27, 1966.

TERRY PIPER

The mark is not known to be the name of any person and is therefore fanciful.
For Robes (Int. Cl. 25).
First use July 1966.

SN 258,816. Juliet Lingerie, Inc., New York, N.Y. Filed Nov. 16, 1966.

PETTI-FLOAT

For Slips and Half-Slips (Int. Cl. 25).
First use Oct. 27, 1966.

SN 259,821. Endicott Johnson Corporation, Endicott, N.Y. Filed Dec. 1, 1966.

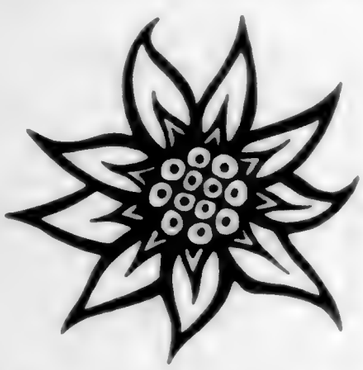
For Men's Dress and Casual Shoes (Int. Cl. 25).
First use Jan. 14, 1963.

SN 260,367. Sportville Mens Wear Inc., New York, N.Y. Filed Dec. 8, 1966.

CHEMISE DU ROI

The word "Chemise" is disclaimed apart from the mark as shown. The mark "Chemise du Roi" is a French term meaning "shirt of kings."
For Men's Shirts (Int. Cl. 25).
First use Nov. 4, 1966.

SN 260,508. Alp Sport, Inc., Boulder, Colo. Filed Dec. 12, 1966.



For Men's, Women's, and Children's Outerwear—Namely, Jackets, Parkas, Vests, Ponchos, Trousers, Boots, and Gaiters (Int. Cl. 25).
First use Apr. 18, 1964.

SN 262,068. Sarong, Inc., Dover Del. Filed Jan. 6, 1967.

LOW CALORIE

Owner of Reg. No. 614,456.
For Foundation Garments (Int. Cl. 25).
First use Dec. 27, 1966.

SN 262,533. Sarong, Inc., Dover, Del. Filed Dec. 9, 1966.

BODY MOTION

Owner of Reg. Nos. 821,679 and 825,832.
For Foundation Garments (Int. Cl. 25).
First use Aug. 1, 1966.

SN 264,200. Craddock-Terry Shoe Corporation, Lynchburg, Va. Filed Feb. 8, 1967.

SOFT ANSWERS

Owner of Reg. Nos. 688,359 and 715,109.
For Shoes (Int. Cl. 25).
First use Feb. 1, 1967.

SN 265,928. Jackie Stuart, Inc., New York, N.Y. Filed Mar. 3, 1967.

The name "Jackie Stuart" is a fanciful name and not the name of an individual either living or dead. The word "Junior" is disclaimed apart from the mark as shown.
For Women's Clothing—Namely, Suits, Coats, and Skirts (Int. Cl. 25).
First use January 1960.

SN 267,818. Craft Hosiery, Inc., Jackson, Miss. Filed Mar. 29, 1967.

BUDGET BEAUTY

For Hosiery (Int. Cl. 25).
First use Mar. 17, 1966.

SN 268,149. California Forms, Inc., Culver City, Calif. Filed Apr. 3, 1967.

HALTERNATE

For Brassieres (Int. Cl. 25).
First use Mar. 2, 1967.

SN 270,445. Washington Manufacturing Company, Nashville, Tenn. Filed May 1, 1967.

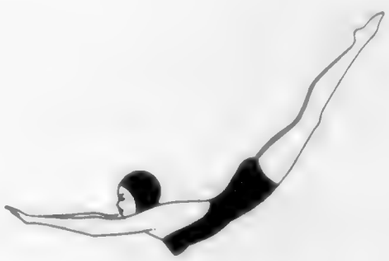
Owner of Reg. Nos. 168,367, 794,102, and others.
For Men's and Boys' Sport Shirts, Dress Shirts, Slacks, Walk Shorts, Pajamas, and Western Shirts (Int. Cl. 25).
First use September 1961 on sport shirts.

SN 276,025. Miguel Gil, S.A., Tarrasa, Barcelona, Spain. Filed July 14, 1967.

MALL-COTT

Owner of Spanish Reg. No. 316,486, dated May 10, 1957.
For Jerseys, Sweaters, Bathing Suits, Dresses, Mufflers, and Shawls (Int. Cl. 25).

SN 276,072. Jantzen Inc., Portland, Oreg. Filed July 17, 1967.



Owner of Reg. Nos. 423,812, 885,723, and others.
For Articles of Clothing for Men, Women, and Children—Namely, Pants, Slacks, Dresses, Blouses, Shirts, Suits, Slips, and Swimming Caps (Int. Cl. 25).
First use May 28, 1920.

SN 277,581. Brigham Young Junior Coats Inc., New York, N.Y. Filed Aug. 4, 1967.

"Brigham Young" is the name of the Mormon leader, long deceased.
For Junior Petite and Junior All Weather Coats (Int. Cl. 25).
First use Apr. 12, 1967.

SN 278,057. Blue Bell, Inc., Greensboro, N.C. Filed Aug. 11, 1967.

HONDO PONCHOS

Applicant disclaims the word "Ponchos" apart from the mark as shown. Owner of Reg. No. 780,397.
For Men's and Boys' Slacks (Int. Cl. 25).
First use June 14, 1967.

SN 286,062. Craddock-Terry Shoe Corporation, Lynchburg, Va. Filed Dec. 4, 1967.

MICHAEL ROBERTS

The name "Michael Roberts" is fictitious.
For Shoes for Men, Women, and Children (Int. Cl. 25).
First use Nov. 17, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 275,900. Fashion Tress, Inc., Miami, Fla. Filed July 13, 1967.

SHALIMAR

For Ladies' Wigs and Hair Pieces (Int. Cl. 26).
First use on or about June 26, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 267,171. Metropolitan Floor Covering Co., Los Angeles, Calif. Filed Mar. 20, 1967.

La Ronde

For Rugs (Int. Cl. 24).
First use August 1965.

SN 270,116. Charlton Woolen Company, Charlton City, Mass. Filed Apr. 27, 1967.

CHARL-TEX

For Woven Fabrics for Use in the Manufacture of Men's, Boys', Children's, Misses', and Women's Coats, Car Coats, Jackets, Capes, and Any Other Outer-Coat Type of Garment (Int. Cl. 24).
First use Mar. 29, 1967.

SN 270,586. Lawson Products, Inc., Pawtucket, R.I. Filed May 3, 1967.

VELTRIQUE

For Knitted Fabric for Making Into Men's and Ladies' Foundation Garments, Hosiery, and Swimwear; Ladies' Panties and Panty-Hose; Surgical Bandages, and the Like (Int. Cl. 24).
First use Apr. 17, 1967.

SN 277,399. A. Wimpfheimer & Bro., Inc., Stonington, Conn. Filed Aug. 2, 1967.

GLAMORVEL

For Pile Fabrics (Int. Cl. 24).
First use Jan. 11, 1933.

SN 277,400. A. Wimpfheimer & Bro., Inc., Stonington, Conn. Filed Aug. 2, 1967.

VELPRIMA

For Pile Fabrics (Int. Cl. 24).
First use Mar. 3, 1933.

SN 277,564. New Haven Quilt & Pad Company Incorporated, East Haven, Conn. Filed Aug. 4, 1967.

THE HUGGER

For Comforters (Int. Cl. 24).
First use July 21, 1967.

SN 277,629. Collins & Aikman Corporation, New York, N.Y. Filed Aug. 7, 1967.

TRIQUETTA

For Tricot Fabirc for Lingerie and Loungewear (Int. Cl. 24).
First use May 15, 1967.

SN 277,673. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Miyakojima-ku, Osaka, Japan. Filed Aug. 7, 1967.

SOIESTAR

For Woven and Kintted Textile Piece Goods Made of Synthetic Textile Fibers (Int. Cl. 24).
First use May 14, 1965; in commerce at least as early as February 1967.

Class 43 — Thread and Yarn

SN 277,707. Roselon Yarns, Inc., Philadelphia, Pa. Filed Aug. 7, 1967.

LONESTA

For Yarns (Int. Cl. 23).
First use July 24, 1967.

SN 277,708. Roselon Yarns, Inc., Philadelphia, Pa. Filed Aug. 7, 1967.

SPINESTA

For Yarns (Int. Cl. 23).
First use July 20, 1967.

SN 277,709. Roselon Yarns, Inc., Philadelphia, Pa. Filed Aug. 7, 1967.

NYESTA

For Yarns (Int. Cl. 23).
First use June 7, 1967.

Class 44 — Dental, Medical, and Surgical Appliances

SN 273,246. Aktiebolaget Bofors, Hofors, Sweden. Filed June 7, 1967.

NOBETEC

Owner of Swedish Reg. No. 101,995, dated Feb. 2, 1962; and U.S. Reg. No. 716,925.
For Preparations for Filling Cavities in Teeth, Preparations for Taking Impressions of Teeth, and Powders for the Preparation of Dental Cements (Int. Cl. 5).
First use July 31, 1962; in commerce Mar. 31, 1966.

SN 273,613. Deseret Pharmaceutical Company, Inc., Sandy, Utah. Filed June 12, 1967.

E-Z-CATH

For Intravenous Cannula Placement Units (Int. Cl. 10).
First use at least as early as Jan. 31, 1967.

SN 282,889. Cooper's, Incorporated, Kenosha, Wis. Filed Oct. 19, 1967.

VITALIZER

Owner of Reg. No. 735,392.
For Scultetus Bandage (Int. Cl. 10).
First use Aug. 8, 1967.

Class 45 — Soft Drinks and Carbonated Waters

SN 259,163. Royal Crown Cola Co., Columbus, Ga. Filed Nov. 21, 1966.

GUSTO

For Soft Drinks and Concentrates Therefor (Int. Cl. 32).
First use Dec. 8, 1965.

SN 270,717. Edward L. Stockton, Jr., d.b.a. Star Enterprises, Mount Holly, N.J. Filed May 4, 1967.

For Soft Drinks and Flavoring Syrup for Making the Same (Int. Cl. 32).
First use Apr. 25, 1967.

SN 271,541. Edward L. Stockton, Jr., d.b.a. Star Enterprises, Mount Holly, N.J. Filed May 15, 1967.

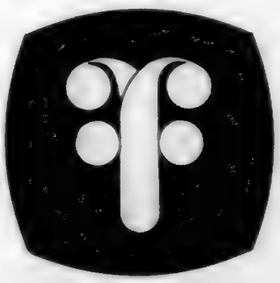
For Soft Drinks and Flavoring Syrup for Making the Same (Int. Cl. 32).
First use May 3, 1967.

Class 46 — Foods and Ingredients of Foods

SN 245,095. S. Parkinson & Son (Doncaster) Limited, Doncaster, England. Filed May 6, 1966.

The person represented on the drawing is fictitious and no living person is designated thereby.
For Sugar Candy (Int. Cl. 30).
First use 1933; in commerce 1933.

SN 245,470. Joseph Gangi & Sons, Inc., Lawrence, Mass. Filed May 12, 1966.



For Fresh Vegetables, Fresh Fruits, and Refrigerated Fruit Salad Comprising Some or All of the Following: Orange Sections, Grapefruit Sections, Pineapple Chunks, Cantaloupe Balls, Watermelon Balls, and Other Fruits in Season, Packed in Light Syrup (Int. Cls. 29 and 31).
First use Apr. 7, 1966.

SN 246,779. General Mills, Inc., Minneapolis, Minn. Filed May 27, 1966.

CHARIOTS

For Cereal Derived Ready To Eat Snacks (Int. Cl. 30).
First use Apr. 25, 1966.

SN 250,121. Ajinomoto Kabushiki Kaisha, d.b.a. Ajinomoto Co., Inc., Chuo-ku, Tokyo, Japan. Filed July 13, 1966.

AJIMATE

For Imitation Meat Extract (Int. Cl. 29).
First use December 1965; in commerce December 1965.

SN 253,972. Madison Laboratories, Inc., Chicago, Ill. Filed Sept. 7, 1966.

EXECUTIVE CHEF

For Powdered Mix for Making Sauces To Be Used on Meats, Fish, and Vegetables (Int. Cl. 30).
First use Aug. 8, 1966.

SN 255,242. Suchard Holding Societe Anonyme, Lausanne, Switzerland. Filed Sept. 27, 1966.

PRADO

Owner of Swiss Reg. No. 218,381, dated June 16, 1966.
For Cocoa; Candies; Chocolate for Cooking Purposes; Articles of Confection—Namely, Cake, Cookies, and the Like; and Bakery Products—Namely, Pastries (Int. Cl. 30).

SN 255,466. Robert H. Sanborn, d.b.a. The Yum-Yum Shop, Boulder, Colo. Filed Sept. 29, 1966.

DREAM DROPS

For Confectionery Product in the Nature of a Mixture of Fruit, Nuts, and Bran (Int. Cl. 30).
First use Mar. 13, 1961.

SN 257,178. Foremost-McKesson, Inc., New York, N.Y., assignee of Foremost Dairies, Inc., San Francisco, Calif. Filed Oct. 25, 1966.

SHAKE-A-LUNCH

For Powder Mix for Making Milk Shakes (Int. Cl. 29).
First use at least as early as July 29, 1966.

SN 257,466. Di Giorgio Corporation, d.b.a. Di Giorgio Fruit Corporation, San Francisco, Calif. Filed Oct. 28, 1966.

BRITE BLOOM

For Fresh Grapes (Int. Cl. 31).
First use June 1961.

SN 257,482. General Mills, Inc., Minneapolis, Minn. Filed Oct. 28, 1966.

RED SPOON

For Cheese Based Sauces and Tomato Based Sauces (Int. Cl. 30).
First use Oct. 11, 1966.

SN 257,612. General Mills, Inc., Minneapolis, Minn. Filed Oct. 31, 1966.

WHIMSIES

For Noodle Casseroles With Sour Cream Cheese Sauce Mix (Int. Cl. 30).
First use Aug. 22, 1966.

SN 258,351. Armour and Company, Chicago, Ill. Filed Nov. 10, 1966.

MiraCure

For Bacon (Int. Cl. 29).
First use Oct. 17, 1966.

SN 259,461. Order of St. Benedict, Collegeville, Minn. Filed Nov. 25, 1966.

THE LOAF THAT BECAME A LEGEND

The word "Loaf" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 688,063 and 716,289.
For Bakery Products—Namely, Bread (Int. Cl. 30).
First use Feb. 2, 1959.

SN 260,049. Hayden Flour Mills, Tempe, Ariz. Filed Dec. 5, 1966.

The drawing is lined for red and brown. Owner of Reg. Nos. 719,740 and 725,120.
For All Purpose Enriched Bleached Flour (Int. Cl. 30).
First use Aug. 1, 1966.

SN 261,590. Knorr-Nährmittel Aktiengesellschaft, Zurich, Switzerland. Filed Dec. 28, 1966.

KNORR-SWISS

Owner of U.S. Reg. No. 685,624.
For Gravies and Sauces (Int. Cl. 30).
First use at least as early as Sept. 8, 1966; in commerce at least as early as Sept. 8, 1966.

SN 264,895. Balmar, Inc., Memphis, Tenn. Filed Feb. 17, 1967.

U.F.O.
FLYING SAUCER

For Chewing Gum Products (Int. Cl. 30).
First use Jan. 14, 1967.

SN 264,898. Bonsal Seggerman & Co., San Francisco, Calif. Filed Feb. 17, 1967.

LA BODEGA

"La Bodega" is tranlated in English as "the wine cellar."
For Wine Vinegar (Int. Cl. 30).
First use Jan. 3, 1967.

SN 266,404. The Borden Company, New York, N.Y. Filed Mar. 10, 1967.

COFFEE COMBO

Applicant disclaims the word "Coffee" apart from the mark as shown.
For Instant Coffee With Non-Dairy Creamer (Int. Cl. 30).
First use Jan. 27, 1966.

SN 267,676. Root Company, d.b.a. Old Dutch Co., Daytona Beach, Fla. Filed Mar. 27, 1967.

For Salad Dressing (Int. Cl. 29).
First use on or about Mar. 30, 1963.

SN 268,772. F. M. Stamper Company, d.b.a. Banquet Canning Company, St. Louis, Mo. Filed Apr. 10, 1967.

BANQUET

Owner of Reg. Nos. 411,202, 759,331, and others.
For Frozen Prepared Food Products—Namely, Tuna Pie, Fried Chicken Pieces; and Boil-in-the-Bag Products—Namely, Chicken a la King, Chicken and Noodles, Sloppy Joes, Beef and Barbecue Sauce, Chipped Beef, and Salisbury Steak; Frozen Corned Beef Hash Dinners; Frozen Meat Loaf Dinners Consisting Mainly of Meat Loaf With One or More Vegetables and/or Potatoes; Frozen Beef Tacos; Frozen Frankfurters and Beans Dinners; Frozen Spaghetti and Meatballs Dinners; Frozen Ravioli Dinners; and Frozen Buffet Suppers—Namely, Beef Slices, Gravy With Sliced Beef, Gravy With Sliced Turkey, Barbecue Sauce With Sliced Beef, and Spaghetti and Meatballs; and Pie Shells (Int. Cls. 29 and 30).
First use November 1942.

SN 268,889. National Biscuit Company, New York, N.Y. Filed Apr. 11, 1967.

WHIRLY BIRD

For Biscuits and Crackers (Int. Cl. 30).
First use Mar. 27, 1967.

SN 270,343. R. D. Blackwood & Son (Production) Limited, Blackpool, England. Filed May 1, 1967.

Owner of British Reg. No. 839,109, dated Sept. 15, 1962.
For Candy (Int. Cl. 30).
First use on or about Feb. 1, 1967; in commerce on or about Feb. 1, 1967.

SN 270,572. Hills Bros. Coffee, Inc., San Francisco, Calif. Filed May 3, 1967.

EP

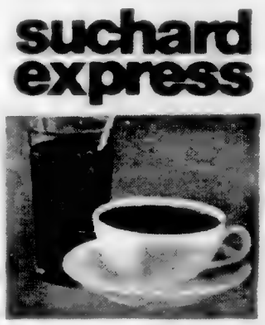
For Coffee (Int. Cl. 30).
First use Apr. 17, 1967.

SN 271,095. Chana S. Craig, d.b.a. Chana's Carry Out, Kokomo, Ind. Filed May 10, 1967.

SPUTNIK

For Hamburger Sandwich (Int. Cl. 29).
First use January 1952.

SN 271,734. Suchard Holding Societe Anonyme, Lausanne, Switzerland. Filed May 17, 1967.



Applicant disclaims the pictorial matter appearing in the drawing, namely, the representation of a glass and cup and saucer. Owner of U.S. Reg. Nos. 54,480, 772,452, and others; and Swiss Reg. No. 214,525, dated Nov. 29, 1965.

For Extracts, Powders, and Concentrates of a Cocoa or Chocolate Nature for the Preparation of Instant Dietetic and Nonalcoholic Beverages (Int. Cl. 30).

SN 271,922. Comet Rice Mills, Inc., Dallas Tex. Filed May 19, 1967.

The drawing is lined for red and blue. Owner of Reg. Nos. 92,589, 806,431, and others.

For Rice (Int. Cl. 30).

First use Mar. 1, 1967.

SN 273,715. Philip Morris Incorporated, d.b.a. Clark Gum Co., New York, N.Y. Filed June 13, 1967.

PEPPIERMINT

Owner of Reg. No. 823,817.

For Chewing Gum (Int. Cl. 30).

First use May 26, 1967.

SN 274,304. H. C. Brill Company, Inc., Cedar Grove, N.J. Filed June 20, 1967.

STAIZ

Owner of Reg. No. 730,519.

For Stabilizer for Use in Making Bakery Products (Int. Cl. 1).

First use Sept. 13, 1948.

SN 274,461. Purity Cheese Company, Mayville, Wis. Filed June 21, 1967.

MAY-BUD

For Cheese (Int. Cl. 29).

First use July 12, 1940.

SN 274,512. The R. T. French Company, Rochester, N.Y. Filed June 22, 1967.

CHILI-O

No claim is made to the exclusive use of the word "Chili" apart from the mark as shown. Owner of Reg. No. 738,303.

For All-in-One Chili Seasoning Mix (Int. Cl. 30).

First use June 1957.

SN 275,861. McKee Baking Company, Collegedale, Tenn. Filed July 11, 1967.

DEVIL TWINS

For Cakes and Cookies (Int. Cl. 30).

First use June 6, 1966.

SN 275,862. McKee Baking Company, Collegedale, Tenn. Filed July 12, 1967.

BANANA TWINS

For Cakes and Cookies (Int. Cl. 30).

First use Mar. 10, 1955.

SN 276,173. Quality Bakers of America Cooperative, Inc., New York, N.Y. Filed July 17, 1967. COLLECTIVE MARK.

Softex

For Baked Goods—Namely, Bread, Buns, Rolls, and Cake (Int. Cl. 30).

First use May 9, 1967.

SN 276,175. John Reeves, Ridgeville, S.C. Filed July 17, 1967.

BIG JOHN'S

For Catfish Stew (Int. Cl. 29).

First use Feb. 15, 1967.

SN 277,169. Haynes Milling Co., Inc., Portland, Ind. Filed July 31, 1967.

OUR PRIDE

For Wheat Flour (Int. Cl. 30).

First use Sept. 7, 1900.

SN 277,208. Philip Morris Incorporated, d.b.a. Flavor Tree Co., New York, N.Y. Filed July 31, 1967.

FULL-O-FRUIT

For Chewing Gum and Candy (Int. Cl. 30).

First use July 28, 1967.

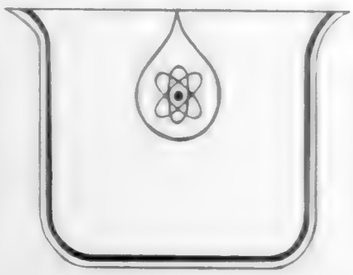
SN 277,797. SMS Industries, Inc., Highlands, Tex. Filed Aug. 8, 1967.

GIBBY

For Dog Food (Int. Cl. 31).

First use Nov. 1, 1966.

SN 277,810. Tri-Valley Growers, San Francisco, Calif. Filed Aug. 8, 1967.



For Fruits and Vegetables in Powder Form (Int. Cl. 29).
First use July 1, 1967.

SN 277,811. Tri-Valley Growers, San Francisco, Calif. Filed Aug. 8, 1967.

Tower/Dri

For Fruits and Vegetables in Powder Form (Int. Cl. 29).
First use July 1966.

SN 278,248. Seaboard Allied Milling Corporation, d.b.a. George Urban Milling Company, Buffalo, N.Y. Filed Aug. 14, 1967.

QUALITATE

For Flour (Int. Cl. 30).
First use Aug. 7, 1967.

SN 278,800. Forbes Williamsburg Candies Inc., Williamsburg, Va. Filed Aug. 22, 1967.

PUCKER-UPS

For Candies (Int. Cl. 30).
First use Apr. 17, 1967.

SN 278,835. Vie-Del Company, Fresno, Calif. Filed Aug. 22, 1967.

WINE-CHEF

For Natural Sherry Sauce Derived From an Alcohol-Free Concentrate (Int. Cl. 30).
First use Aug. 7, 1967.

SN 279,642. The Great Atlantic & Pacific Tea Company, Inc., New York, N.Y. Filed Sept. 5, 1967.

Sultana

Owner of Reg. Nos. 87,622, 544,729, and others.
For Frozen French Fried Potatoes and Frozen Sweet Peas (Int. Cl. 29).
First use September 1961.

SN 280,911. Best Kosher Sausage Co., Chicago, Ill. Filed Sept. 22, 1967.

"THE HOUSE OF THE KOSHER COW"

For Sausage (Int. Cl. 29).
First use Sept. 7, 1967.

SN 284,132. The Coca-Cola Company, Atlanta, Ga. Filed Nov. 6, 1967.

VI-PRO-MIN

Owner of Reg. No. 729,235.
For Canned Single Strength Orange Juice (Int. Cl. 32).
First use Oct. 9, 1967.

SN 284,538. General Mills, Inc., Minneapolis, Minn. Filed Nov. 13, 1967.

FANS

For Cereal Derived Snack Product (Int. Cl. 30).
First use on or prior to Jan. 9, 1967.

SN 284,870. General Mills, Inc., Minneapolis, Minn. Filed Nov. 15, 1967.

NUTTY SHELLS

For Cereal Derived Snack Product (Int. Cl. 30).
First use on or prior to Jan. 9, 1967.

SN 284,880. Suchard Holding Societe Anonyme, Lausanne, Switzerland. Filed Nov. 15, 1967.

PATISSE

For Chocolate Confectionery in the Nature of Eating Chocolate (Int. Cl. 30).
First use Oct. 9, 1967; in commerce Oct. 9, 1967.

SN 285,178. Valley Packing Company of California, d.b.a. Valley Pkg. Co., Salinas, Calif. Filed Nov. 20, 1967.

VALPAK

For Fresh Melons and Fresh Vegetables (Int. Cl. 31).
First use June 1, 1967.

SN 285,495. House of Frothee, Inc., Hewlett, N.Y. Filed Nov. 24, 1967.

For Dehydrated Fruit Flavored Mix for Use in the Preparation of Food Beverages (Int. Cl. 32).
First use Oct. 30, 1967.

SN 285,622. National Biscuit Company, New York, N.Y. Filed Nov. 27, 1967.

CREAM CAPADES

Applicant disclaims any exclusive right to the word "Cream" apart from the mark as shown.
For Ice Cream Mix (Int. Cl. 30).
First use Oct. 24, 1967.

SN 285,625. National Biscuit Company, New York, N.Y. Filed Nov. 27, 1967.

DESSERT CHEF

Applicant disclaims any exclusive right to the word "Dessert" apart from the mark as shown.
For Ice Cream Mix (Int. Cl. 30).
First use Oct. 25, 1967.

SN 285,797. H. Y. Minami and Sons, Santa Maria, Calif. Filed Nov. 29, 1967.

LIFELINE

For Fresh Vegetables (Int. Cl. 31).
First use Jan. 2, 1957.

SN 288,473. The Pfaffman Company, Cleveland, Ohio. Filed Jan. 10, 1968.

CLIMAX

For Alimentary Paste Products—Namely, Noodles, Macaroni, Spaghetti, and Vermicelli (Int. Cl. 30).
First use Sept. 1, 1892.

Class 47 — Wines

SN 268,053. Llords & Elwood Winery, Los Angeles, Calif. Filed Mar. 31, 1967.

The JUDGE'S SECRET

For Wines (Int. Cl. 33).
First use July 1, 1961.

SN 275,305. Robin Fils & Cie, Ltd., Batavia, N.Y. Filed July 3, 1967.

PINK DUCK

For Blend of Champagne and Sparkling Burgundy (Int. Cl. 33).
First use Mar. 3, 1967.

Class 49 — Distilled Alcoholic Liquors

SN 258,033. H & G Distributing Co., Nashville, Tenn. Filed Nov. 7, 1966.

MUSIC CITY U. S. A.

No claim is made to the term "U.S.A." apart from the mark as shown.
For Bourbon Whiskey (Int. Cl. 33).
First use July 22, 1966.

SN 259,557. Moritz Thienelt, Likörfabrik "Echte Kroatzbeere," Holzbuettgen, Germany. Filed Nov. 28, 1966.

MORITZ THIENELT

Owner of German Reg. No. 735,979, dated Nov. 27, 1959; and U.S. Reg. No. 828,389.
For Brandies, Rums, Whiskeys, Gins, Blackberry Liqueurs, Apertifs With a Distilled Alcoholic Liquor Base, and Prepared Mixed Drinks Made With Distilled Alcoholic Liquors and Non-Alcoholic Beverages (Int. Cl. 33).

SN 259,558. Moritz Thienelt, Likörfabrik "Echte Kroatzbeere," Holzbuettgen, Germany. Filed Nov. 28, 1966.

Schüttboden

The word "Schüttboden" may be translated from a German dialect to mean "granary." Owner of German Reg. No. 657,650, dated July 15, 1953.
For Liqueurs (Int. Cl. 33).

SN 259,559. Moritz Thienelt, Likörfabrik "Echte Kroatzbeere," Holzbuettgen, Germany. Filed Nov. 28, 1966.

Rabenvater

The German word "Raben" means "raven" and the German word "Vater" means "father." Owner of German Reg. No. 678,069, dated June 26, 1954.
For Liqueurs, Particularly Bitter Liqueurs (Int. Cl. 33).

SN 259,560. Moritz Thienelt, Likörfabrik "Echte Kroatzbeere," Holzbuettgen, Germany. Filed Nov. 28, 1966.

The German word "Raben" means "raven" and the German word "Vater" means "father." Owner of German Reg. No. 779,815, dated June 21, 1963.
For Liqueurs, Particularly Bitter Liqueurs (Int. Cl. 33).

SN 259,561. Moritz Thienelt, Likörfabrik "Echte Kroatzbeere," Holzbuettgen, Germany. Filed Nov. 28, 1966.

The word "Shüttboden may be translated from a German dialect to mean "granary." The drawing is lined for red but color is not claimed as a feature of the mark. Owner of German Reg. No. 675,417, dated July 21, 1953; and U.S. Reg. No. 828,389.
For Liqueurs (Int. Cl. 33).

SN 272,489. Heublein, Inc., Hartford, Conn. Filed May 26, 1967.

LIGHTHOUSE

For Scotch Whisky (Int. Cl. 33).
First use May 3, 1967.

SN 272,859. Schenley Industries, Inc., New York, N.Y. Filed June 1, 1967.

DAUPHIN

Owner of Reg. No. 406,224.
For Brandy (Int. Cl. 33).
First use May 15, 1967.

SN 282,243. Charles Jacquin et Cie., Inc., Philadelphia, Pa. Filed Oct. 11, 1967.

The words "Old" and "Bourbon" are disclaimed apart from the mark as shown.
For Bourbon Whiskey (Int. Cl. 33).
First use Dec. 14, 1966.
Subj. to Intf. with SN 283,428.

SN 283,428. William P. Cashman, d.b.a. Marita, and Marita Spirits & Wine Company, Cleveland, Ohio. Filed Oct. 26, 1967.

BOURBON HOUSE

The word "Bourbon" is disclaimed apart from the mark as shown.
For Bourbon Whiskey (Int. Cl. 33).
First use Sept. 1, 1967.
Subj. to Intf. with SN 282,243.

SN 288,577. H. C. Macpherson, d.b.a. A. & B. Mackay & Company, and A. & B. Mackay Ltd., San Francisco, Calif. Filed Jan. 11, 1968.

ANCIENT MEMORIAL

Owner of Reg. No. 711,627.
For Scotch Whisky (Int. Cl. 33).
First use 1945.

SN 288,578. H. C. Macpherson, d.b.a. Macpherson and Company, San Francisco, Calif. Filed Jan. 11, 1968.

PAST MASTER

For Scotch Whisky (Int. Cl. 33).
First use 1957.

Class 50—Merchandise Not Otherwise Classified

SN 245,734. Frank P. Mitten, d.b.a. Mitten's Display Letters, Redlands, Calif. Filed May 16, 1966.

DESIGNER SERIES

For Fonts and Assortments of Letters and Figures and Illustrating Accessories for Use in Making Up Changeable or Permanent Signs (Int. Cl. 16).
First use 1957.

SN 261,367. Edanbob Corporation, Chicago, Ill. Filed Dec. 23, 1966.

Baking Aid

Owner of Reg. No. 749,760.
For Magnetic Recipe Copyholders (Int. Cl. 21).
First use on or about Dec. 29, 1965.

SN 272,289. L. Marino, Inc., Brooklyn, N.Y. Filed May 24, 1967.

FLEX NET

For Cargo Containers, Including a Pallet and a Flexible Fabric Cover Attached to the Pallet (Int. Cl. 20).
First use May 5, 1967.

Class 51 — Cosmetics and Toilet Preparations

SN 236,048. John H. Breck, Inc., Springfield, Mass. Filed Jan. 10, 1966.

BUBBLES OF COLOR

For Permanent Hair Coloring Preparation (Int. Cl. 3).
First use Dec. 28, 1965.

SN 236,049. John H. Breck, Inc., Springfield, Mass. Filed Jan. 10, 1966.

COLOR BUBBLES

For Permanent Hair Coloring Preparation (Int. Cl. 3).
First use Dec. 28, 1965.

SN 250,993. Charles F. Pentler, d.b.a. C. F. & F. M. Pentler, Cupertino, Calif. Filed July 25, 1966.

For Bath Oils (Int. Cl. 3).
First use on or about June 2, 1966.

SN 254,311. Noxell Corporation, Baltimore, Md. Filed Sept. 12, 1966.

Cover Girl
"Whippee"

Owner of Reg. Nos. 112,638, 690,350, and others.
For Medicated Cream Make-Up (Int. Cl. 3).
First use July 21, 1966.

SN 258,064. Clairol Incorporated, New York, N.Y. Filed Nov. 7, 1966.

MISTY SURF

For Hair Tinting, Dyeing, and Coloring Preparation (Int. Cl. 3).
First use Aug. 11, 1966.

SN 258,066. Clairol Incorporated, New York, N.Y. Filed Nov. 7, 1966.

RADIANT REDHEAD

Applicant disclaims rights to the word "Redhead" apart from the mark as shown.
For Hair Tinting, Deying, and Coloring Preparation (Int. Cl. 3).
First use Aug. 11, 1966.

SN 259,775. Texas Pharmacal Company, San Antonio, Tex. Filed Nov. 30, 1966.

MAXAFIL

For Sun Exposure Protection Cream (Int. Cl. 3).
First use July 19, 1966.

SN 259,783. Yardley of London, Inc., Totowa, N.J. Filed Nov. 30, 1966.

GLO-ER

For Face Blusher and Rouge (Int. Cl. 3).
First use Nov. 18, 1966.

SN 259,811. Juvare, Inc., Salisbury, N.C., assignee of L. B. Coulter, d.b.a. L. B. Coulter Company, Salisbury, N.C. Filed Dec. 1, 1966.

Juvare

For Hair Tonic, Brilliantine, After-Shave Lotion, Personal Deodorant, Cream Deodorant, Cologne, and Brushless Shave Cream (Int. Cls. 3 and 5).
First use May 8, 1944.

SN 260,753. John E. Diederichs, d.b.a. House of Crayton, Cicero, Ill. Filed Dec. 14, 1966.

The representation of the Athlete is fanciful.
For Men's Cosmetic and Toilet Preparations—Namely, Body Rub Preparations (Int. Cl. 3).
First use Aug. 18, 1966.

SN 261,327. Societe Anonyme Expanscience, Courbevoie, (Seine), France. Filed Dec. 22, 1966.

GANTELINE

"Ganteline" in French is a botanical term and designates a species of plants having a common feature, namely, the form of the finger of a glove. Owner of French Reg. No. 480,719, dated May 29, 1959 (Paris); Natl. Inst. No. 126,711.

For Perfume, Toilet Water, Lipstick, Rouge, Face Powder, and Cosmetic Skin Creams and Cosmetic Skin Softening Lotions (Int. Cl. 3).

SN 261,472. Ellen Kayet Laboratories, Inc., St. Paul, Minn. Filed Dec. 27, 1966.

The word "Spice" is disclaimed apart from the mark as shown.

For After Shave Lotion and Cologne (Int. Cl. 3).

First use July 1, 1966.

SN 261,638. Clairol Incorporated, New York, N.Y. Filed Dec. 29, 1966.

CLOUDLIT BLONDE

Applicant disclaims the word "Blonde" apart from the mark as shown.

For Hair Tinting, Dyeing, and Coloring Preparation (Int. Cl. 3).

First use Sept. 26, 1966.

SN 261,639. Clairol Incorporated, New York, N.Y. Filed Dec. 29, 1966.

GENTLENESS

For Hair Conditioner (Int. Cl. 3).

First use Sept. 26, 1966.

SN 261,762. Springfoot, Inc., Charleston, W. Va. Filed Dec. 30, 1966.

MILLIONS

For Men's Toiletries—Namely, Men's After Shave Lotion, Men's Refreshener, and Men's Talc (Int. Cl. 3).

First use Dec. 9, 1966.

SN 265,238. Texas Pharmacal Company, San Antonio, Tex. Filed Feb. 23, 1967.

sunSwept

Owner of Reg. No. 421,381.

For Skin Cream Used To Prevent Sunburn and Promote Suntan (Int. Cl. 3).

First use Jan. 27, 1967.

SN 265,317. Milopa Ltd., St. Gall, Switzerland. Filed Feb. 23, 1967.

milopa

Priority claimed under Sec. 44(d) on Swiss Reg. No. 221,114, dated Nov. 15, 1966.

For Cosmetic Products—Namely, Non Medicated Cream for Use in the Treatment and Care of the Skin, Facial Make-Up, Face and Body Powders, Rouges, Lipstick, Perfumes, Colognes, Moisturizing Lotions and Toilet Waters, Dentifrices, Eye Make-Up, Manicuring Fingernail Preparations, Body Deodorants, Depilatories, Bath Salts, Bath Oils, Bath Powders, Bath Crystals; Hair Preparations—Namely, Hair Tint, Hair Dressing Creams and Lotions, Hair Tonics and Hair Conditioners; and Shaving Creams, Lotions, and Powders (Int. Cls. 3 and 5).

SN 266,459. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Mar. 10, 1967.

LE MERITE

"Le Merite" translates from French as "merit" which is a laudatory word meaning excellence.

For Cologne (Int. Cl. 3).

First use Feb. 3, 1967.

SN 267,892. Robert J. Leigh, d.b.a. Fashion Fair Company, Arcaida, Calif. Filed Mar. 30, 1967.

Owner of Reg. No. 784,137.

For Hair Setting Jels and Lotions (Int. Cl. 3).

First use Jan. 26, 1967.

SN 268,764. The Realistic Company, Cincinnati, Ohio. Filed Apr. 10, 1967.

GREAT SHAPE

For Permanent Wave Curling Solutions (Int. Cl. 3).

First use on or about Mar. 22, 1967.

SN 269,630. Clairol Incorporated, New York, N.Y. Filed Apr. 20, 1967.

BETHERE

For Men's Cologne (Int. Cl. 3).

First use Dec. 19, 1966.

SN 269,633. Clairol Incorporated, New York, N.Y. Filed Apr. 20, 1967.

BE THERE

For Men's Cologne (Int. Cl. 3).

First use Dec. 19, 1966.

SN 269,634. Clairol Incorporated, New York, N.Y. Filed Apr. 20, 1967.

CONSIDERATION

For Hair Conditioner (Int. Cl. 3).
First use Dec. 19, 1966.

SN 269,636. Clairol Incorporated, New York, N.Y. Filed Apr. 20, 1967.

HAPPY BIRTHDAY

For Hair Tinting, Dyeing, and Coloring Preparation (Int. Cl. 3).
First use Dec. 19, 1966.

SN 270,943. Noxell Corporation, Baltimore, Md. Filed May 8, 1967.

COVER GIRL "CRAZY STICKS"

The applicant disclaims the word "Sticks" separate and apart from the mark as shown on the drawing, reserving unto itself all common law rights which it may have or acquire in said term.
For Lipstick (Int. Cl. 3).
First use Mar. 27, 1967.

SN 271,875. Yardley of London, Inc., Totowa, N.J. Filed May 18, 1967.

LACEYS

For Lip Polish and Nail Polish (Int. Cl. 3).
First use May 11, 1967.

SN 286,595. Alberto-Culver Company, Melrose Park, Ill. Filed Dec. 11, 1967.

COMMAND

Owner of Reg. Nos. 678,622 and 703,335.
For Hair Conditioner and Dressing, Hair Spray, Shave Cream, After Shave Lotion, Cologne, and Personal Deodorant Preparations (Int. Cls. 3 and 5).
First use Sept. 16, 1957.

SN 286,596. Alberto-Culver Company, Melrose Park, Ill. Filed Dec. 11, 1967.

PATROL

Owner of Reg. Nos. 747,721, 812,810, and 814,169.
For Cologne, Shave Soaps, Shave Lotions, Personal Deodorants; Preparations for the Hair, Comprising Hair Spray, Hair Setting Gel, Hair Dressing and Conditioner, and Dandruff Preparation (Int. Cls. 3 and 5).
First use Apr. 6, 1962.

Class 52 — Detergents and Soaps

SN 261,533. Sybil Ives Incorporated, White Plains, N.Y. Filed Dec. 27, 1966.

TRI-GLY

For Hair Shampoo (Int. Cl. 3).
First use Aug. 11, 1966.

SN 268,470. Breier of Amsterdam, Inc., d.b.a. Leather 'n' Suede, Amsterdam, N.Y. Filed Apr. 6, 1967.

VAPION

Owner of Reg. No. 717,937.
For Cleaning Material for Suede Garments, Handbags, Shoes, Clothing Accessories, Leather, Upholstery, and Fabrics (Int. Cl. 3).
First use Mar. 1, 1966.

SN 275,481. G. H. Tennant Company, Minneapolis, Minn. Filed July 6, 1967.

TENNANT

Owner of Reg. Nos. 507,709, 550,931, and others.
For Cleaners for Surfaces of Concrete, Tile, Wood, and Terrazzo, for Use in Maintenance and Construction (Int. Cl. 3).
First use August 1959.

SN 284,691. Mem Company, Inc., Northvale, N.J. Filed Nov. 13, 1967.

HOUBET CLEAR

Applicant disclaims the word "Clear" apart from the mark as shown.
For Skin Cleansing Soap (Int. Cl. 3).
First use Sept. 1, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 243,751. ARB (American Research Bureau) Inc., Beltsville, Md. Filed Apr. 19, 1966.

INSTANT CUME

For Providing an Analysis for Commercial Broadcasters and the Like for Determining the Most Effective Use of Every Available Time Spot All the Time Employing Computer Techniques (Int. Cl. 42).
First use June 1964.

SN 251,453. The Ohio Corrugating Company, Warren, Ohio. Filed Aug. 1, 1966.

OHIO KOTE

Without prejudice to any common law rights, the word "Kote" is disclaimed apart from the mark as shown.
For Services Relating to the Coating of Shipping Containers (Int. Cl. 42).
First use on or about Jan. 4, 1954.

SN 251,883. Blaz'r Steaks International, Inc., Memphis, Tenn. Filed Aug. 8, 1966.

BLAZ'R STEAKS

No registration rights are claimed for the word "Steaks" apart from the mark shown in the drawing.

For Restaurant Services (Int. Cl. 42).

First use Oct. 28, 1965.

SN 251,884. Blaz'r Steaks International, Inc., Memphis, Tenn. Filed Aug. 8, 1966.

No registration rights are claimed for the word "Steaks" apart from the mark shown in the drawing.

For Restaurant Services (Int. Cl. 42).

First use Oct. 28, 1965.

SN 253,847. Cater-Vend, Inc., Jacksonville, Ill. Filed Sept. 6, 1966.

For Dispensing of Foods, Beverages, Candies, Pastries, Ice Cream Products, and Cigarettes Through Vending Machines (Int. Cl. 42).

First use at least as early as July 1, 1965.

SN 254,720. Red Dog, Inc., Lawrence, Kans. Filed Sept. 19, 1966.

RED DOG INN

The term "Inn" is disclaimed apart from the mark as shown.

For Operation of an Establishment Featuring Food, Drink, and Entertainment (Int. Cl. 42).

First use during January 1965.

SN 259,704. The American Oil Company, Chicago, Ill. Filed Nov. 30, 1966.

AMERICAN OIL

No exclusive claim is made to the word "Oil" apart from the mark as shown. Owner of Reg. Nos. 579,567, 580,683, and others.

For Motor Club Association Service—Namely, Promoting the Interests and Aiding of Motorists (Int. Cl. 42).

First use July 13, 1965.

SN 261,022. The American Oil Company, Chicago, Ill. Filed Dec. 19, 1966.

Owner of Reg. Nos. 443,855, 811,112, and others.

For Motor Club Association Service—Namely, Promoting the Interests and Aiding of Motorists (Int. Cl. 42).

First use July 13, 1965.

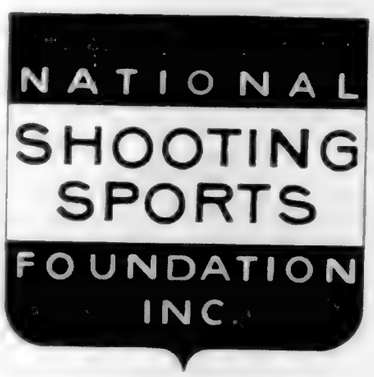
SN 261,027. The American Oil Company, Chicago, Ill. Filed Dec. 19, 1966.

No exclusive claim is made to the words "Motor Club" apart from the mark as shown. Owner of Reg. Nos. 579,567, 811,112, and others.

For Motor Club Association Service—Namely, Promoting the Interests and Aiding of Motorists (Int. Cl. 42).

First use July 13, 1965.

SN 271,753. National Shooting Sports Foundation, Inc., Riverside, Conn. Filed May 18, 1967.



For Development and Promotion of a Better Understanding of the Shooting Sports by the American Public (Int. Cl. 42).

First use Jan. 10, 1961.

SN 272,917. Compassion, Inc., Chicago, Ill. Filed June 2, 1967.

COMPASSION

For Arranging for Adoption, Care, and Education of Orphaned Children; Promoting and Supporting Institutions in Carrying on Christian Welfare Services (Int. Cl. 42).

First use March 1963.

SN 275,920. Compassion, Inc., Chicago, Ill. Filed July 13, 1967.

For Arranging for Adoption, Care, and Education of Orphaned Children; Promoting and Supporting Institutions in Carrying on Christian Welfare Services (Int. Cl. 42).
First use March 1963.

Class 101 — Advertising and Business

SN 245,292. The City Management Corp., Orange, Calif. Filed May 10, 1966.

THE CITY

For Managing Residential and Commercial Property for Others (Int. Cl. 35).
First use August 1964.

SN 247,124. Deloris E. Hill, d.b.a. Deloris Hill, Fort Lauderdale, Fla. Filed June 2, 1966.

For Operating a Secretarial Service (Int. Cl. 35).
First use Feb. 8, 1966.

SN 251,370. Richard J. Heale & Associates, Inc., Palo Alto, Calif. Filed Aug. 1, 1966.

docu'mation

For Information Storage and Retrieval Services (Int. Cl. 35).
First use June 23, 1966.

SN 265,354. Super Valu Stores, Inc., Hopkins, Minn. Filed Feb. 23, 1967.

DISCO

Owner of Reg. No. 767,264.
For Retail Food Store Services (Int. Cl. 35).
First use Sept. 4, 1962.

SN 266,539. Interco Incorporated, St. Louis, Mo. Filed Mar. 13, 1967.

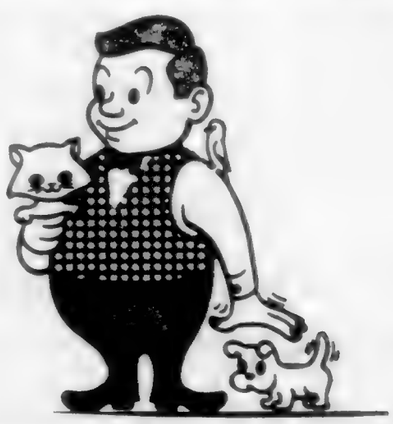
HIRSCH'S

For Department Store Services (Int. Cl. 35).
First use Apr. 18, 1947.

SN 268,593. Donald W. Gapp, d.b.a. Donald W. Gapp and Associates, Meadville, Pa. Filed Apr. 7, 1967.

For Furnishing Record and Accounting Services to Business and Industry and Individuals (Int. Cl. 35).
First use June 17, 1966.

SN 268,748. Lowe's, Inc., Cassopolis, Mich. Filed Apr. 10, 1967.



For Furnishing Advice and Information for and Assistance in Operating Pet Shops and Grooming and Care Technique for Pets (Int. Cl. 35).
First use Sept. 29, 1966.

Class 102 — Insurance and Financial

SN 259,703. The American Oil Company, Chicago, Ill. Filed Nov. 30, 1966.

AMERICAN OIL

No exclusive claim is made to the word "Oil" apart from the mark as shown. Owner of Reg. Nos. 579,567, 580,683, and others.

For Arranging for Travel Accident Insurance To Be Issued to Others; Providing Bail Bond Service in Connection With Detention for Alleged Motor Vehicle or Traffic Violation; and Check Cashing Services (Int. Cl. 36).
First use July 13, 1965.

SN 261,025. The American Oil Company, Chicago, Ill. Filed Dec. 19, 1966.

Owner of Reg. Nos. 443,855, 811,112, and others.

For Arranging for Travel Accident Insurance To Be Issued to Others; Providing Bail Bond Service in Connection With Detention for Alleged Motor Vehicle or Traffic Violation; and Check Cashing Services (Int. Cl. 36).

First use July 13, 1965.

SN 261,026. The American Oil Company, Chicago, Ill. Filed Dec. 19, 1966.

No exclusive claim is made to the words "Motor Club" apart from the mark as shown. Owner of Reg. Nos. 579,567, 811,112, and others.

For Arranging for Travel Accident Insurance To Be Issued to Others; Providing Bail Bond Service in Connection With Detention for Alleged Motor Vehicle or Traffic Violation; and Check Cashing Services (Int. Cl. 36).

First use July 13, 1965.

Class 103 — Construction and Repair

SN 235,590. Service Corporation of America, Los Angeles, Calif. Filed Dec. 30, 1965.

SERVICE CORPORATION OF AMERICA

For Repair and Maintenance of Home Appliances Such as Radio and Television Sets (Int. Cl. 37).

First use Oct. 1, 1965.

SN 253,892. Loper Electric, Inc., Lakewood, Colo. Filed Sept. 6, 1966.

For Electrical Contracting Services (Int. Cl. 37).

First use September 1954.

SN 273,539. Union Oil Company of California, Los Angeles, Calif. Filed June 9, 1967.

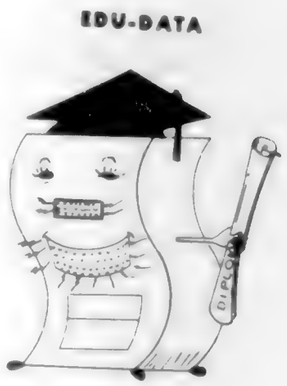
The drawing is lined for blue and orange, but no claim is made to color. Owner of Reg. Nos. 733,277, 827,031, and others.

For Automobile and Truck Service Station Services (Int. Cl. 37).

First use Dec. 29, 1966.

Class 107 — Education and Entertainment

SN 252,252. Edu-Data Service Center, Washington, D.C. Filed Aug. 12, 1966.



For Educational Service for Determining the Most Suitable College for Prospective College Students, by Comparing the Latter's Scholastic Record and Desires With the Scholastic Standards of Various Colleges (Int. Cl. 41).

First use June 30, 1966.

SN 253,895. Maryland Yacht Club, Pasadena, Md. Filed Sept. 6, 1966.

QUEEN OF THE CHESAPEAKE

For Entertainment Services—Namely, Conducting Beauty Contests and Pageants (Int. Cl. 41).

First use June 1958.

SN 255,841. Your Father's Mustache International, Inc., New Haven, Conn., by change of name from Warrenton Restaurant, Inc., New Haven, Conn. Filed Oct. 5, 1966.

MUSTACHE STOMPERS

For Entertainment Service in the Form of Popular Music Performed by a Banjo Band (Int. Cl. 41).

First use Aug. 15, 1964.

SN 280,706. Holinone, Inc., New York, N.Y. Filed Sept. 19, 1967.

THE HOLE-IN-ONE-CLUB

For Conducting and Sponsoring Golfing Events for Members and Services Relating Thereto (Int. Cl. 41).
First use Aug. 31, 1967.

SN 283,204. Riko Enterprises, Inc., d.b.a. Philadelphia 76ers, Philadelphia, Pa. Filed Oct. 24, 1967.

76ERS

For Entertainment Services in the Nature of Basketball Exhibitions Rendered Live and Through the Media of Radio and Television Broadcasts (Int. Cl. 41).
First use July 1963.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 259,942. Lambda Iota Tau, Incorporated, Grand Rapids, Mich. Filed Dec. 2, 1966.

For Indicating Membership in an Honor Society.
First use in or about 1956; 1953 as to "Lambda Iota Tau."

SN 259,943. Lambda Iota Tau, Incorporated, Grand Rapids, Mich. Filed Dec. 2, 1966.

For Indicating Membership in an Honor Society.
First use in or about 1959; 1953 as to "LIT."

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

846,495. RILSAN. Aquitaine-Organico. SN 249,209. Pub. 1-9-68. Filed 6-29-66.

846,496. BULGARIA AND DESIGN. Associated State Enterprise "Rodopa." MULTIPLE CLASS (Classes 1, 29, and 46). SN 250,419. Pub. 1-9-68. Filed 7-18-66.

846,497. SKINTIGHT. Gilbreth Company. SN 254,047. Pub. 1-9-68. Filed 9-8-66.

846,498. KENRICH AND DESIGN. Kenrich Petrochemicals, Inc. MULTIPLE CLASS (Classes 1 and 6). SN 255,803. Pub. 1-9-68. Filed 10-5-66.

846,499. VISTRON. The Standard Oil Company. SN 260,196. Pub. 9-12-67. Filed 12-6-66.

846,500. MISCELLANEOUS DESIGN. George Warner Seed Company, Inc. SN 263,717. Pub. 1-9-68. Filed 1-31-67.

846,501. PERMA-GERM. Northrup, King & Co. SN 264,335. Pub. 1-9-68. Filed 2-9-67.

846,502. UNICOMB. Ferro Corporation. SN 265,057. Pub. 1-9-68. Filed 2-20-67.

846,503. DORESCO. Dock Resins Corporation. MULTIPLE CLASS (Classes 1 and 6). SN 267,509. Pub. 1-9-68. Filed 3-24-67.

Class 2 — Receptacles

846,504. AIWF. The Alan I W Frank Corporation. SN 238,207. Pub. 1-9-68. Filed 2-7-66.

846,505. FLEMING AND DESIGN. Fleming & Sons, Inc. MULTIPLE CLASS (Classes 2, 12, and 37). SN 239,482. Pub. 1-9-68. Filed 2-21-66

846,506. SEN-PAK. The Sentry Company. MULTIPLE CLASS (Classes 2 and 14). SN 241,431. Pub. 1-9-68. Filed 3-21-66.

846,507. LIQUA-BIN. Fabricated Metals, Inc. SN 244,694. Pub. 1-9-68. Filed 5-2-66.

846,508. SPACEMISER. Best Quality Plastics, Inc. SN 247,314. Pub. 1-9-68. Filed 6-6-66.

846,509. FREEZ-A-SHELF AND DESIGN. Life-Like Products, Inc. SN 254,297. Pub. 1-9-68. Filed 9-12-66.

846,510. RCC. Royal Casket Company, Inc. SN 264,122. Pub. 1-9-68. Filed 1-26-67.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

846,511. CROSSLEATHER. Mark Cross Company, Ltd. SN 235,570. Pub. 1-9-68. Filed 12-30-65.

846,512. ELEGANTE. United States Trunk Company, Inc. SN 265,668. Pub. 10-10-67. Filed 2-28-67.

Class 4 — Abrasives and Polishing Materials

846,513. R-M AND DESIGN. Interchemical Corporation. SN 253,880. Pub. 1-9-68. Filed 9-6-66.

846,514. NWDT. Ralph Arnold, d.b.a. Northwest Diamond Tool Co. SN 260,813. Pub. 1-9-68. Filed 12-15-66.

846,515. HIL-TREAT AND DESIGN Hillyard Enterprises, Inc. SN 266,761. Pub. 1-2-68. Filed 3-15-67.

Class 5 — Adhesives

846,516. S (DESIGN). The Firestone Tire & Rubber Company. SN 266,212. Pub. 1-9-68. Filed 3-8-67.

846,517. GLUTOLIN. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning. SN 268,718. Pub. 1-9-68. Filed 4-10-67.

Class 6 — Chemicals and Chemical Compositions

846,498. (See Class 1 for this trademark.)

846,503. (See Class 1 for this trademark.)

846,518. D DAMON AND DESIGN. Damon Engineering, Inc. MULTIPLE CLASS (Classes 6, 21, and 26). SN 243,748. Pub. 1-9-68. Filed 4-19-66.

846,519. FLUID FILM. Eureka Chemical Company. SN 253,742. Pub. 1-9-68. Filed 9-2-66.

846,520. SEARCH. The Drackett Company. SN 255,424. Pub. 5-23-67. Filed 9-29-66.

846,521. TRU-WAY. Texize Chemicals, Inc. SN 259,185. Pub. 1-9-68. Filed 11-21-66.

846,522. TRU-WAY. Texize Chemicals. Inc. SN 259,187. Pub. 1-9-68. Filed 11-21-66.

846,523. SEDI-STAIN. Clay-Adams, Inc. SN 259,301. Pub. 1-9-68. Filed 11-23-66.

846,524. CHEMPLEX. Chemplex Company. SN 259,406. Pub. 1-9-68. Filed 11-25-66.

846,525. ELECTROBLACK. Enequist Chemical Company, Inc. SN 261,819. Pub. 1-9-68. Filed 1-3-67.

846,526. CONIDE-20. Ciba Corporation, d.b.a. The Gland-O-Lac Company. SN 265,167. Pub. 1-9-68. Filed 2-21-67.

846,527. PINEE. Daly-Herring Company. MULTIPLE CLASS (Classes 6 and 18). SN 265,587. Pub. 1-9-68. Filed 2-28-67.

846,528. R-MATITE. Arma Research Corporation. MULTIPLE CLASS (Classes 6 and 12). SN 267,573. Pub. 1-9-68. Filed 3-27-67.

846,529. GREYLOCK ELECTRONICS AND DESIGN. Entronic Industries, Inc. SN 271,360. Pub. 1-9-68. Filed 5-12-67.

846,530. MONFIX. Monsanto Company. SN 271,497. Pub. 1-9-68. Filed 5-15-67.

846,531. RODEO. Monsanto Company. SN 271,498. Pub. 1-9-68. Filed 5-15-67.

846,532. RICOCHET. Monsanto Company. SN 271,499. Pub. 1-9-68. Filed 5-15-67.

846,533. RUSTLER. Monsanto Company. SN 271,500. Pub. 1-9-68. Filed 5-15-67.

846,534. CLORODET. Monsanto Company. SN 271,501. Pub. 1-9-68. Filed 5-15-67.

846,535. STYMIE. The Borden Company. SN 271,689. Pub. 1-9-68. Filed 5-17-67.

846,536. SUN COUNTRY. S. C. Johnson & Son, Inc. SN 283,187. Pub. 1-9-68. Filed 10-25-67.

Class 8 — Smokers' Artides, Not Including Tobacco Products

846,537. PASSAT. Mylflam Metallwaren Dr. Maltner Kommanditgesellschaft. SN 252,880. Pub. 1-9-68. Filed 8-22-66.

846,538. BRYLON. S. M. Frank & Co., Inc. SN 263,155. Pub. 1-9-68. Filed 1-9-67.

846,539. PERMA-MOIST. Iwan Ries & Co. SN 265,529. Pub. 1-9-68. Filed 2-27-67.

Class 10 — Fertilizers

846,540. PAYGRO TAN BARK AND DESIGN. The Mead Corporation. SN 267,642. Pub. 1-9-68. Filed 3-27-67.

Class 11 — Inks and Inking Materials

846,541. ROTOTEC. Interchemical Corporation. SN 256,557. Pub. 1-9-68. Filed 10-17-66.

846,542. TINTRIX. American Printers & Lithographers, Inc. SN 282,744. Pub. 1-9-68. Filed 10-18-67.

Class 12 — Construction Materials

846,505. (See Class 2 for this trademark.)

846,528. (See Class 6 for this trademark.)

846,543. EPOMARINE. H. V. Hardman Co., Incorporated. SN 251,425. Pub. 1-9-68. Filed 8-1-66.

846,544. PERMA/FLOOR. The Valspar Corporation. SN 253,374. Pub. 1-9-68. Filed 8-29-66.

846,545. PINEPLY AND DESIGN. Arkansas Louisiana Gas Company. SN 255,505. Pub. 1-9-68. Filed 9-30-66.

846,546. KWENCH-KOTE. Acorn Chemical Company. SN 256,801. Pub. 1-9-68. Filed 10-20-66.

846,547. HERITAGE TILE. Heritage Tile, Inc. SN 266,420. Pub. 1-9-68. Filed 3-10-67.

846,548. AMBASS-A-DOR. Ambassador Manufacturing Co. SN 273,727. Pub. 1-9-68. Filed 6-13-67.

846,549. PAGODA. U.S. Plywood-Champion Papers Inc. SN 281,260. Pub. 1-9-68. Filed 9-27-67.

846,550. PANAI. U.S. Plywood-Champion Papers Inc. SN 281,261. Pub. 1-9-68. Filed 9-27-67.

846,551. UNICOTE. U.S. Plywood-Champion Papers Inc. SN 281,427. Pub. 1-9-68. Filed 9-29-67.

846,552. UNICOL. U.S. Plywood-Champion Papers Inc. SN 281,532. Pub. 1-9-68. Filed 10-2-67.

846,553. TROUP. General Refractories Company. SN 282,953. Pub. 1-9-68. Filed 10-20-67.

846,554. SALINA. General Refractories Company. SN 282,955. Pub. 1-9-68. Filed 10-20-67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

846,555. IDEAL STANDARD AND DESIGN. American Standard Inc., by change of name from American Radiator & Standard Sanitary Corporation. MULTIPLE CLASS (Classes 13 and 31). SN 243,381. Pub. 1-9-68. Filed 4-14-66.

846,556. MISCELLANEOUS DESIGN. American Standard Inc., by change of name from American Radiator & Standard Sanitary Corporation. MULTIPLE CLASS (Classes 13 and 31). SN 243,385. Pub. 1-9-68. Filed 4-14-66.

846,557. AMERICAN STANDARD AND DESIGN. American Standard Inc., by change of name from American Radiator & Standard Sanitary Corporation. MULTIPLE CLASS (Classes 13 and 31). SN 243,389. Pub. 1-9-68. Filed 4-14-66.

846,558. BOLT SIZE IS HOLE SIZE. Wej-It Expansion Products, Inc. SN 253,581. Pub. 1-9-68. Filed 8-31-66.

846,559. HUMPHREY. General Gas Light Co. (MULTIPLE CLASS (Classes 13 and 34). SN 255,084. Pub. 1-9-68. Filed 9-26-66.

846,560. TUBE-LINE. Midwood Industries, Inc., assignee of Tube-Line Manufacturing Corp. SN 255,834. Pub. 1-9-68. Filed 10-5-66.

846,561. FERO. Firma Alfred Honsel, Nieten- und Metallwarenfabrik. MULTIPLE CLASS (Classes 13 and 23). SN 258,527. Pub. 1-9-68. Filed 11-14-66.

846,562. BELMONT. Takara Company, New York, Inc. MULTIPLE CLASS (Classes 13, 32, and 44). SN 258,849. Pub. 1-9-68. Filed 11-16-66.

846,563. DESIGN OF LION AND GLOBE. C. & C. Button & Trimming Co., Inc. MULTIPLE CLASS (Classes 13, 23, 28, and 40). SN 262,853. Pub. 10-24-67. Filed 1-19-67.

846,564. GBC AND DESIGN. Gardner Products Co. SN 263,559. Pub. 1-9-68. Filed 1-30-67.

846,565. STEEL-RANE. FMC Corporation. SN 267,137. Pub. 1-9-68. Filed 3-20-67.

846,566. DORMA AND DESIGN. Dörken & Mankel K.G. SN 267,930. Pub. 1-9-68. Filed 3-30-67.

846,567. PNEUMAGIC. Mead Specialties Co., Inc. SN 268,509. Pub. 1-9-68. Filed 4-6-67.

846,568. HORIZON. American Standard Inc., by change of name from American Radiator & Standard Sanitary Corporation. SN 271,424. Pub. 1-9-68. Filed 5-15-67.

846,569. AVALON. American Standard Inc., by change of name from American Radiator & Standard Sanitary Corporation. SN 271,425. Pub. 1-9-68. Filed 5-15-67.

846,570. LUXOR. American Standard Inc., by change of name from American Radiator & Standard Sanitary Corporation. SN 271,426. Pub. 1-9-68. Filed 5-15-67.

846,571. PERMA-SLEEVE. Federal Screw Works. SN 271,458. Pub. 1-9-68. Filed 5-15-67.

846,572. INTERFAST. Interfast Corporation. SN 283,487. Pub. 1-9-68. Filed 10-27-67.

Class 14 — Metals and Metal Castings and Forgings

846,506. (See Class 2 for this trademark.)

846,573. SUPER DURZINC. Yawata Iron & Steel Co., Ltd. SN 249,378. Pub. 7-18-67. Filed 6-30-66.

846,574. DURZINC. Yawata Iron & Steel Co., Ltd. SN 249,379. Pub. 7-18-67. Filed 6-30-66.

Class 15 — Oils and Greases

846,575. ZING-GO! AND DESIGN, Puratronics, Inc. SN 253,333. Pub. 1-9-68. Filed 8-29-66.

846,576. LUBRI-KOTE LUBRICANTS FOR INDUSTRY AND DESIGN. John N. Stone, d.b.a. Lubri-Kote Company. SN 262,517. Pub. 11-21-67. Filed 1-13-67.

Class 16 — Protective and Decorative Coatings

846,577. FABULUSTRE. Elliott Paint & Varnish Co. SN 243,550. Pub. 1-9-68. Filed 4-15-66.

846,578. SUNKEM. Sun Chemical Corporation. SN 251,753. Pub. 1-9-68. Filed 8-4-66.

846,579. VITHA-GARD. Elliott Paint & Varnish Co. SN 262,857. Pub. 1-9-68. Filed 1-19-67.

846,580. BUOYKOTE. Textron Industries, Inc. SN 265,357. Pub. 1-9-68. Filed 2-23-67.

846,581. SATELLITE. United Coatings, Inc. SN 275,089. Pub. 1-9-68. Filed 6-29-67.

846,582. BPS. Textron Industries, Inc. SN 280,919. Pub. 1-9-68. Filed 9-22-67.

Class 17—Tobacco Products

846,583. TRES LANCEROS. Glaser Bros. SN 259,420. Pub. 11-21-67. Filed 11-25-66.

846,584. TIPALET. Consolidated Cigar Corporation. SN 261,721. Pub. 1-9-68. Filed 12-30-66.

846,585. LORD BEACONSFIELD AND DESIGN. Maclin-Zimmer-McGill Tobacco Co., Incorporated. SN 265,313. Pub. 1-9-68. Filed 2-23-67.

846,586. FIFTY FIFTY AND DESIGN. The American Tobacco Company. SN 265,964. Pub. 1-9-68. Filed 3-6-67.

Class 18—Medicines and Pharmaceutical Preparations

846,527. (See Class 6 for this trademark.)

846,587. K-DEX. Mead Johnson & Company. SN 217,542. Pub. 10-19-65. Filed 4-29-65.

846,588. CANTABILINE. Lipha Lyonnaise Industrielle Pharmaceutique. SN 247,608. Pub. 1-9-68. Filed 6-8-66.

846,589. ALAVAC. Beecham Group Limited, d.b.a. Beecham Research Laboratories. SN 253,003. Pub. 1-9-68. Filed 8-24-66.

846,590. VIRACTIN. Byron Leach Co. SN 253,010. Pub. 9-19-67. Filed 8-24-66.

846,591. COVER GIRL PLUS 3. Noxell Corporation. SN 253,674. Pub. 1-9-68. Filed 9-1-66.

846,592. PAROFENOL. Parke, Davis & Company. SN 256,794. Pub. 1-9-68. Filed 10-20-66.

846,593. ENDURALL-R. Norden Laboratories, Inc. SN 258,921. Pub. 11-21-67. Filed 11-17-66.

846,594. REX-TABS. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company. SN 260,078. Pub. 1-9-68. Filed 12-5-66.

846,595. BETADERM. The Purdue Frederick Company. SN 263,482. Pub. 11-21-67. Filed 1-27-67.

846,596. VARUVAC. Merck & Co., Inc. SN 264,553. Pub. 1-9-68. Filed 2-13-67.

846,597. KALF-KARE. Dairy Association Company, Inc. SN 264,725. Pub. 1-9-68. Filed 2-15-67.

846,598. MYR-PLUS AND DESIGN. M. L. Hotten, d.b.a. Derma-Lore Products. SN 281,007. Pub. 1-9-68. Filed 9-25-67.

846,599. OBELINS. Mead Johnson & Company. SN 283,603. Pub. 1-9-68. Filed 10-30-67.

Class 19—Vehicles

846,600. MINISTOP MODULATOR. Societe Messier. SN 241,192. Pub. 1-9-68. Filed 3-16-66.

846,601. BLAIR HOUSE. Chickasha Mobile Homes, Inc. SN 250,357. Pub. 1-9-68. Filed 7-15-66.

846,602. TRAV-A-TOP. Stutz Industries. SN 252,693. Pub. 1-9-68. Filed 8-18-66.

846,603. EXCALIBUR. Wayfarer Corp., d.b.a. Wayfarer Yacht Corporation. SN 261,901. Pub. 1-9-68. Filed 1-3-67.

846,604. HELLO DOLLY FROM TRANSPORT LEASING AND DESIGN. Pullman Incorporated. SN 262,287. Pub. 1-9-68. Filed 1-10-67.

846,605. THE BARTENDER. Devils Lake Marina, Inc. SN 265,053. Pub. 1-9-68. Filed 2-20-67.

846,606. SEA-CAMPER. Lee S. Siebert, asignee of Stanray Corporation. SN 265,443. Pub. 1-9-68. Filed 2-24-67.

846,607. MONTICELLO. Liberty Coach Company, Inc. SN 266,052. Pub. 1-9-68. Filed 3-6-67.

846,608. HUDSON BAY. Herter's Inc. MULTIPLE CLASS (Classes 19 and 22). SN 280,742. Pub. 1-9-68. Filed 9-20-67.

Class 21—Electrical Apparatus, Machines, and Supplies

846,518. (See Class 6 for this trademark.)

846,609. TONEX. W. P. Hemenway Co. SN 244,708. Pub. 11-21-67. Filed 5-2-66.

846,610. COMPUTALARM. Vandalarm Systems, Inc. SN 248,648. Pub. 1-9-68. Filed 6-21-66.

846,611. AEROMETRICS. Aerojet-General Corporation. MULTIPLE CLASS (Classes 21, 26, and 34). SN 249,703 Pub. 1-9-68. Filed 7-7-66.

846,612. AQUAPRENE. Birns & Sawyer Cine Equipment Co., Inc. SN 252,328. Pub. 11-22-66. Filed 8-15-66.

846,613. PORTATROL. Lester Controls Corporation. SN 254,790. Pub. 12-12-67. Filed 9-20-66.

846,614. PORTASWITCH. Lester Controls Corporation. SN 254,791. Pub. 12-12-67. Filed 9-20-66.

846,615. MASON. The Ansul Company. SN 255,955. Pub. 1-9-68. Filed 10-7-66.

846,616. BERLON. National Beryllia Corp. SN 258,314. Pub. 1-9-68. Filed 11-9-66.

846,617. MISCELLANEOUS DESIGN. Bulova Watch Company, Inc. MULTIPLE CLASS (Classes 21 and 36). SN 258,355. Pub. 1-9-68. Filed 11-10-66.

846,618. EUC. Electric Utilities Company. SN 260,794. Pub. 11-14-67. Filed 12-13-66.

846,619. DRAPE MAID. Robert A. Gill, d.b.a. Automatic Actuators Co. SN 261,071. Pub. 1-9-68. Filed 12-19-66.

846,620. PANELIST. Litecontrol Corporation. SN 261,934. Pub. 1-9-68. Filed 1-4-67.

846,621. WOODRA. Litecontrol Corporation. SN 261,935. Pub. 1-9-68. Filed 1-4-67.

846,622. KIMFOL. Kimberly-Clark Corporation. SN 263,077. Pub. 1-9-68. Filed 1-23-67.

846,623. GUARD ALL. International Register Company. SN 264,062. Pub. 1-9-68. Filed 2-6-67.

846,624. MONSANTO AND DESIGN. Monsanto Company. MULTIPLE CLASS (Classes 21, 26, and 27). SN 264,704. Pub. 1-9-68. Filed 2-15-67.

846,625. ULTRADYNAMICS. Ultradynamics Corp. SN 265,226. Pub. 1-9-68. Filed 2-21-67.

846,626. MISCELLANEOUS DESIGN. Ultradynamics Corp. SN 265,227. Pub. 1-9-68. Filed 2-21-67.

846,627. DOCKLITE. Phoenix Products Company, Inc. SN 265,772. Pub. 1-9-68. Filed 3-2-67.

846,628. G-LINE. Surface Conduction, Inc. SN 265,930. Pub. 1-9-68. Filed 3-3-67.

846,629. ECONOLINE. Sprague Electric Company. SN 267,554. Pub. 1-9-68. Filed 3-24-67.

846,630. DS. Digital Systems, Inc. SN 268,165. Pub. 1-9-68. Filed 4-3-67.

846,631. AGRO-POWER. Agro-Power Inc. SN 268,459. Pub. 1-9-68. Filed 4-6-67.

846,632. MEKTHERM. Rogers Corporation. SN 268,621. Pub. 1-9-68. Filed 4-7-67.

846,633. SUPER REVERB-AMP. Columbia Broadcasting System, Inc. SN 270,204. Pub. 1-9-68. Filed 4-28-67.

846,634. MINA-GEAR. General Electric Company. SN 270,376. Pub. 1-9-68. Filed 5-1-67.

846,635. ELECTRO-MITE. Fedtro, Inc. SN 271,609. Pub. 1-9-68. Filed 5-16-67.

846,636. L/C. Chris Boone, d.b.a. Lighting Components Co. SN 271,686. Pub. 1–9–68. Filed 5–17–67.

846,637. ROTO-REED. Arthur Ansley Manufacturing Company. SN 272,796. Pub. 1–9–68. Filed 6–1–67.

846,638. MARATHON AND DESIGN. Marathon Battery Company. SN 275,807. Pub. 1–9–68. Filed 7–12–67.

846,639. TIOLEKTRIK. American Lava Corporation. SN 280,838. Pub. 1–9–68. Filed 9–21–67.

Class 22 — Games, Toys, and Sporting Goods

846,608. (See Class 19 for this trademark.)

846,640. WHITE STAR. Franz Kneissl, Skifabrik, Kufstein. SN 155,262. Pub. 12–3–63. Filed 10–16–62.

846,641. ICY PRO. Gotham Pressed Steel Corporation. SN 245,191. Pub. 1–9–68. Filed 5–9–66.

846,642. DOUBLE-A. Acushnet Process Sales Company. SN 248,667. Pub. 1–9–68. Filed 6–22–66.

846,643. DOUBLE A (DESIGN). Acushnet Process Sales Company. SN 248,668. Pub. 1–9–68. Filed 6–22–66.

846,644. KNIT-O-MATIC. Kenner Products Company. SN 253,767. Pub. 1–9–68. Filed 9–2–66.

846,645. GAKKEN TOY AND DESIGN. Gakken Co., Ltd. SN 258,303. Pub. 1–9–68. Filed 11–9–66.

846,646. UP CHUTE. Ramillon René. SN 261,401. Pub. 1–9–68. Filed 12–23–66.

846,647. DESERT PATROL. Louis Marx & Co. Inc. SN 271,631. Pub. 1–9–68. Filed 5–16–67.

846,648. IMAGINATION DEVELOPMENT AND DESIGN. Loral Corporation. SN 272,385. Pub. 1–9–68. Filed 5–25–67.

846,649. MINI MITE. Henry Gordy, Inc. SN 279,188. Pub. 1–9–68. Filed 8–28–67.

846,650. LITTLE BIMBO. Atlantic Lures, Inc. SN 280,687. Pub. 1–9–68. Filed 9–19–67.

846,651. DEDEYE. Sam W. Todd, d.b.a. Sam Todd Custom Clubs. SN 280,987. Pub. 1–9–68. Filed 9–22–67.

846,652. CHITTY CHITTY BANG BANG. Mattel, Inc. SN 282,747. Pub. 1–9–68. Filed 10–18–67.

846,653. ROSEBUD. Mattel, Inc. SN 282,749. Pub. 1–9–68. Filed 10–18–67.

846,654. BOMBURST. Mattel, Inc. SN 283,191. Pub. 1–9–68. Filed 10–26–67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

846,561. (See Class 13 for this trademark.)

846,563. (See Class 13 for this trademark.)

846,655. RANGER. Marine Drive Systems, Inc. SN 237,855. Pub. 1–9–68. Filed 2–2–66.

846,656. BLUELINE. Consolidated Vacuum Corporation. SN 240,709. Pub. 1–9–68. Filed 3–11–66.

846,657. BLITZ FOGGER. Northern Industries, Inc., d.b.a. the Blitz Fog Company. SN 242,911. Pub. 1–9–68. Filed 4–7–66.

846,658. TY-ZIP. W. S. Tyler, Incorporated. SN 244,778. Pub. 1–9–68. Filed 5–2–66.

846,659. UNICUT. Walter Grabes, d.b.a. Unicut Co. SN 247,915. Pub. 8–15–67. Filed 6–13–66.

846,660. FLEXTOP. Rex Chainbelt Inc. SN 251,953. Pub. 1–9–68. Filed 8–8–66.

846,661. ELECTROHOIST. The Youngstown Sheet and Tube Company. SN 252,143. Pub. 1–9–68. Filed 8–10–66.

846,662. AGROTILLER. Agrotiller Limited. SN 258,655. Pub. 1–9–68. Filed 11–15–66.

846,663. MASTER. Andis Clipper Co. SN 258,879. Pub. 10–24–67. Filed 11–17–66.

846,664. BEACON STAR AND DESIGN. Vincent Anderson, d.b.a. Beacon Engineering Company of Minnesota. SN 261,446. Pub. 1–9–68. Filed 12–27–66.

846,665. CONEX. Illinois Tool Works Inc. SN 261,585. Pub. 1–9–68. Filed 12–28–66.

846,666. RITE-O-GRIP. Rite-O-Lite of California, Inc. SN 262,712. Pub. 1–9–68. Filed 1–17–67.

846,667. WOODHUE. Imperial Knife Associated Companies, Inc. SN 264,829. Pub. 1–9–68. Filed 2–16–67.

846,668. NUPLA. New Plastic Corporation. SN 264,953. Pub. 1–9–68. Filed 2–17–67.

846,669. STEP/SHEL. Textron Inc. SN 264,990. Pub. 1–9–68. Filed 2–17–67.

846,670. SENDZIMIR. Textron Inc. SN 265,130. Pub. 1–9–68. Filed 2–20–67.

846,671. XAVE. Etablissement Aesup. SN 265,415. Pub. 1–9–68. Filed 2–24–67.

846,672. HUSKY. Husky Manufacturing & Tool Works Ltd. SN 265,630. Pub. 1–9–68. Filed 2–28–67.

846,673. BUSTAIR. Savair Products Co. SN 265,738. Pub. 1–9–68. Filed 3–1–67.

846,674. WOODPECKER. Land and Marine Rental Company. SN 265,830. Pub. 1–9–68. Filed 3–2–67.

846,675. GOLIATH. A. O. Smith Harvestore Products, Inc. SN 266,105. Pub. 1–9–68. Filed 3–6–67.

846,676. POWER-FLOW. Industrial Acoustics Company, Inc. SN 266,158. Pub. 1–9–68. Filed 3–7–67.

846,677. NIFEMATIC. Svenska Ackumulator Aktiebolaget Jungner. MULTIPLE CLASS (Classes 23 and 26). SN 266,184. Pub. 1–9–68. Filed 3–8–67.

846,678. LAHRMATIC. The Warner & Swasey Company. SN 266,471. Pub. 1–9–68. Filed 3–10–67.

846,679. COSKI. Coski-Pacific Forge & Tool Co., Inc. SN 266,511. Pub. 1–9–68. Filed 3–13–67.

846,680. HIGROMATIC AND DESIGN. Enresco, Inc. SN 266,648. Pub. 1–9–68. Filed 3–14–67.

846,681. ISLAND SURF. Imperial Knife Associated Companies, Inc. SN 266,765. Pub. 1–9–68. Filed 3–15–67.

846,682. SECRET SEA. Imperial Knife Associated Companies, Inc. SN 266,766. Pub. 1–9–68. Filed 3–15–67.

846,683. WOHLHAUTER MASTERHEAD. Karl A. Neise, Inc. SN 266,908. Pub. 1–9–68. Filed 3–16–67.

846,684. ZIP-TYER. CKL Distributing Co., Inc. SN 275,209. Pub. 1–9–68. Filed 7–3–67.

846,685. TIPTOTE AND DESIGN. William A. Allen. SN 278,160. Pub. 1–9–68. Filed 8–14–67.

Class 26 — Measuring and Scientific Appliances

846,518. (See Class 6 for this trademark.)

846,611. (See Class 21 for this trademark.)

846,624. (See Class 21 for this trademark.)

846,677. (See Class 23 for this trademark.)

846,686. AMPLEXER. Beckman Instruments, Inc. SN 260,518. Pub. 1–9–68. Filed 12–12–66.

846,687. PRESS-O-FILM. Testex, Inc. SN 265,569. Pub. 1–9–68. Filed 2–27–67.

846,688. SGA. Scientific Glass Apparatus Co., Inc. SN 269,356. Pub. 1–9–68. Filed 4–17–67.

846,689. SERVITEMP. Bacharach Industrial Instrument Company. SN 270,468. Pub. 1–9–68. Filed 5–2–67.

846,690. GO-GLOW. Treville Inc. SN 270,981. Pub. 1–9–68. Filed 5–8–67.

846,691. MONOBLIQUE. United States Banknote Corporation. SN 270,986. Pub. 1–9–68. Filed 5–8–67.

846,692. LYRA. Armstrong Whitworth (Marine) Limited. SN 272,563. Pub. 1-9-68. Filed 11-2-67.

846,693. CLARY AND DESIGN. Clary Corporation. SN 280,021. Pub. 1-9-68. Filed 9-11-67.

Class 27 — Horological Instruments

846,624. (See Class 21 for this trademark.)

846,694. SAXONY. Saxony Watch Company, Inc. SN 271,675. Pub. 1-9-68. Filed 5-17-67.

846,695. TINY TOTE. Sheffield Watch, Inc. SN 272,222. Pub. 1-9-68. Filed 5-23-67.

Class 28 — Jewelry and Precious-Metal Ware

846,543. (See Class 13 for this trademark.)

846,696. ANACAPRI. Buccellati Silver, Ltd. SN 263,336. Pub. 1-9-68. Filed 1-26-67.

Class 29 — Brooms, Brushes, and Dusters

846,488. (See Class 1 for this trademark.)

846,697. FEATHER SWEEP AND DESIGN. Brooklyn Fibre Broom Co., Inc. SN 256,428. Pub. 1-9-68. Filed 10-14-66.

846,698. PLAYTEX. International Playtex Corporation, by change of name from International Latex Corporation. SN 257,783. Pub. 1-9-68. Filed 11-2-66.

846,699. KIWI AND DESIGN. The Kiwi Polish Company Proprietary Limited. SN 258,697. Pub. 1-9-68. Filed 11-15-66.

846,700. KWIK 'N' EASY. The Kiwi Polish Company Proprietary Limited. SN 258,698. Pub. 1-9-68. Filed 11-15-66.

Class 30 — Crockery, Earthenware, and Porcelain

846,701. DISTINCTION. Home Decorators, Inc. SN 279,436. Pub. 1-9-68. Filed 8-31-67.

Class 31 — Filters and Refrigerators

846,555. (See Class 13 for this trademark.)

846,556. (See Class 13 for this trademark.)

846,557. (See Class 13 for this trademark.)

846,702. NORD-CO. Nordberg Manufacturing Company. SN 261,673. Pub. 1-9-68. Filed 12-29-66.

Class 32 — Furniture and Upholstery

846,562. (See Class 13 for this trademark.)

846,703. BEDDING BARN. Bedding Barn, Inc. MULTIPLE CLASS (Classes 32 and 101). SN 280,365. Pub. 1-9-68. Filed 9-15-67.

Class 33 — Glassware

846,704. PIROUETTE. Riekes Crisa Corporation. SN 254,189. Pub. 1-9-68. Filed 9-9-66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

846,559. (See Class 13 for this trademark.)

846,611. (See Class 21 for this trademark.)

846,705. AQUACLONE. Wallace-Murray Corporation, assignee of Cen-Trific-Air Products, Inc. SN 261,918. Pub. 1-9-68. Filed 1-4-67.

846,706. MAGIC RAY. South Bend Range Corporation. SN 264,979. Pub. 1-9-68. Filed 2-17-67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

846,707. MISTIGATION. Howard F. Cooper, d.b.a. Helani Farm. SN 255,893. Pub. 1-9-68. Filed 10-6-66.

846,708. UNI-LUG. Wheel Centre Company. SN 258,633. Pub. 1-9-68. Filed 11-14-66.

Class 36 — Musical Instruments and Supplies

846,617. (See Class 21 for this trademark.)

846,709. MISCELLANEOUS DESIGN. Sanders Associates, Inc. SN 245,515. Pub. 1-9-68. Filed 5-12-66.

846,710. ROSTRUM. Rostrum Records, Inc. SN 250,518. Pub. 1-9-68. Filed 7-18-66.

846,711. DIAMOND PRINCESS AND DESIGN. Transcriber Company, Inc. SN 256,386. Pub. 1-9-68. Filed 10-13-66.

846,712. TOMAHAWK AND DESIGN. Henrietta Parsons. SN 261,344. Pub. 1-9-68. Filed 12-12-66.

846,713. ALEXANDRE. Ernest Deffner. SN 281,159. Pub. 1-9-68. Filed 9-26-67.

Class 37 — Paper and Stationery

846,505. (See Class 2 for this trademark.)

846,714. RITEX. The Joseph Dixon Crucible Company, d.b.a. The American Crayon Company. SN 261,645. Pub. 9-19-67. Filed 12-29-66.

Class 38 — Prints and Publications

846,715. TOPNOTCHER. The Flintkote Company. SN 253,748. Pub. 1-9-68. Filed 9-2-66.

846,716. STYLES OF THE TIMES. Interco Incorporated, d.b.a. The Florsheim Shoe Company. SN 257,393. Pub. 1-9-68. Filed 10-27-66.

846,717. MATTHEW BENDER AND DESIGN. Matthew Bender and Company Incorporated. SN 258,974. Pub. 1-9-68. Filed 11-18-66.

846,718. DOGGONE CALENDAR. Hallmark Cards, Incorporated. SN 260,845. Pub. 1-9-68. Filed 12-15-66.

846,719. EUREKA-CARLISLE. Eureka-Carlisle Company. SN 262,572. Pub. 1-9-68. Filed 1-16-67.

846,720. TACTICS AND DESIGN. Edward Hunter. SN 263,182. Pub. 1–9–68. Filed 1–24–67.

846,721. HAPPY-GO-ROUND. Norcross, Inc. SN 266,[illegible]69. Pub. 1–9–68. Filed 3–13–67.

Class 39 — Clothing

846,722. O-RVERSHOE. George Melman & Co. SN 88,066. Pub. 1–24–61. Filed 12–28–59.

846,723. BNH IT'S PERFECTLY NATURAL AND DESIGN. Marx-Haas Clothing Co., assignee of Bennett's of New Haven, Inc. SN 162,331. Pub. 12–12–67. Filed 2–8–63.

846,724. BIRDWATCHERS. Rodman D. Grimm. SN 249,902. Pub. 1–9–68. Filed 7–8–66.

846,725. SEA CAP BY MICKI. Vilena P. Hansen. SN 254,154. Pub. 1–9–68. Filed 9–9–66.

846,726. CASTLE AND DESIGN. Castle Ties, Inc. SN 254,773. Pub. 1–9–68. Filed 9–20–66.

846,727. CASTLE. Castle Ties, Inc. SN 254,774. Pub. 1–9–68. Filed 9–20–66.

846,728. ELAN. Helen Bremer Hulen, d.b.a. Elan. SN 259,922. Pub. 1–9–68. Filed 12–2–66.

846,729. MINIMODE. Minimode (Children's Wear) Limited. SN 259,953. Pub. 1–9–68. Filed 12–2–66.

846,730. SWINGIN' DOORS. Imperial Reading Corporation. SN 260,938. Pub. 1–9–68. Filed 12–16–66.

846,731. C'EST WILD. Bobbie Brooks, Incorporated. SN 261,455. Pub. 1–9–68. Filed 12–27–66.

846,732. RAIN-BOW-TIQUE. Bobbie Brooks, Incorporated. SN 263,445. Pub. 1–9–68. Filed 1–27–67.

846,733. VANELI. Vaneli. SN 264,696. Pub. 1–9–68. Filed 2–14–67.

846,734. CAMINO. The United States Shoe Corporation. SN 264,771. Pub. 1–9–68. Filed 2–15–67.

846,735. BIRDWICK. Kayser-Roth Corporation. SN 264,832. Pub. 1–9–68. Filed 2–16–67.

846,736. OUTER BANKS COLLECTION AND DESIGN. The Jerold Corporation. SN 265,827. Pub. 1–9–68. Filed 3–2–67.

846,737. PRINCE RENARDO. Hema Shirt Co., Inc. SN 266,037. Pub. 1–9–68. Filed 3–6–67.

846,738. AWARD. Astro Engineering Corporation. SN 267,393. Pub. 1–9–68. Filed 3–23–67.

846,739. DAYTIME DATETIME PLAYTIME AND DESIGN. Bobbie Brooks Incorporated. SN 267,721. Pub. 1–9–68. Filed 3–28–67.

846,740. MISCELLANEOUS DESIGN. Bates Manufacturing Company, Incorporated. SN 268,017. Pub. 1–9–68. Filed 3–31–67.

846,741. HIP-NA-TOSE. Arthur R. Lewis, Inc. SN 278,768. Pub. 10–31–67. Filed 8–22–67.

846,742. SKILT. Valor, Inc. SN 281,934. Pub. 1–9–68. Filed 10–5–67.

Class 40 — Fancy Goods, Furnishings, and Notions

846,563. (See Class 13 for this trademark.)

846,743. SEW-NICE AND DESIGN. Land Bros. Inc. SN 258,819. Pub. 1–9–68. Filed 11–16–66.

846,744. SLEEP GAGS. Sparky Specialties, Inc. SN 263,205. Pub. 1–9–68. Filed 1–24–67.

Class 41 — Canes, Parasols, and Umbrellas

846,745. PARISIENNE. Telesco Brophey Limited. SN 259,590. Pub. 1–9–68. Filed 11–28–66.

846,746. GLOBETROTTER. Telesco Brophey Limited. SN 259,593. Pub. 1–9–68. Filed 11–28–66.

846,747. PRESTIGE. Telesco Brophey Limited. SN 259,597. Pub. 1–9–68. Filed 11–28–66.

846,748. SPEED-O-MATIC. Telesco Brophey Limited. SN 259,598. Pub. 1–9–68. Filed 11–28–66.

846,749. SPORT. Telesco Brophey Limited. SN 259,603. Pub. 1–9–68. Filed 11–28–66.

846,750. RAINBOW. Telesco Brophey Limited. SN 259,604. Pub. 1–9–68. Filed 11–28–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

846,751. PROPEX AND DESIGN. Patchogue-Plymouth Company. SN 261,998. Pub. 1–9–68. Filed 1–5–67.

846,752. ETACOL HI-C. Etacol International Ltd. SN 262,033. Pub. 1–9–68. Filed 1–6–67.

846,753. EUROPOL. RBS Fabrics Ltd. SN 269,215. Pub. 1–9–68. Filed 4–14–67.

846,754. TACH-A-TOO. Loomskill, Inc. SN 283,491. Pub. 1–9–68. Filed 10–27–67.

Class 43 — Thread and Yarn

846,755. ACCORD PARFAIT. Compagnie Francaise de Bonneterie. SN 253,958. Pub. 9–12–67. Filed 9–7–66.

Class 44 — Dental, Medical, and Surgical Appliances

846,562. (See Class 13 for this trademark.)

846,756. CHECK DRAPE. Professional Disposable Products Inc. SN 263,198. Pub. 1–9–68. Filed 1–24–67.

Class 45 — Soft Drinks and Carbonated Waters

846,757. FRO-MIX AND DESIGN. The Vim Corporation. SN 283,310. Pub. 1–9–68. Filed 10–25–67.

Class 46 — Foods and Ingredients of Foods

846,496. (See Class 1 for this trademark.)

846,758. SUNDROP. Swift & Company. SN 235,370. Pub. 4–12–66. Filed 8–9–65.

846,759. MR. IT AND DESIGN. Fine Products Company, Inc., assignee of Fine Products Corporation. SN 233,790. Pub. 6–27–67. Filed 12–2–65.

846,760. SESAMETTES. Joyva Corporation. SN 238,745. Pub. 3–14–67. Filed 2–14–66.

846,761. ELECTRA-PERK. General Foods Corporation. SN 246,070. Pub. 4–18–67. Filed 5–19–66.

846,762. DELECTA-RAY. Ocoma Foods Company. SN 255,543. Pub. 1–9–68. Filed 9–30–66.

846,763. MEADOWDALE. Allied Supermarkets Inc., assignee of Kingston Products Company. SN 259,552. Pub. 1–2–68. Filed 11–28–66.

846,764. HANG GUT. Meryl L. Stoddard. SN 260,785. Pub. 1-9-68. Filed 12-14-66.

846,765. SATHERS. Kenneth L. Sather, d.b.a. Sather Cookie Company. SN 266,394. Pub. 1-9-68. Filed 3-10-67.

846,766. BUTT'R STIX. The Jolly Rancher, Inc. SN 271,371. Pub. 1-9-68. Filed 5-12-67.

846,767. PFC PACIFIC FARM COMPANY AND DESIGN. Pacific Farm Company. SN 278,169. Pub. 1-9-68. Filed 8-14-67.

846,768. RIJNO. Koninklijke Maatschappij de Betuwe N.V. SN 281,508. Pub. 1-9-68. Filed 9-28-67.

Class 49 — Distilled Alcoholic Liquors

846,769. MARQUES DEL MERITO. Bodegas Marques del Merito, S.A. SN 247,315. Pub. 1-9-68. Filed 6-6-66.

846,770. WHITE HORSE AND DESIGN. White Horse Distillers, Limited. SN 255,739. Pub. 1-9-68. Filed 10-4-66.

846,771. "ERIN GO BRAGH." John Gross & Co. SN 267,148. Pub. 1-9-68. Filed 3-20-67.

846,772. CAPTAIN VANCOUVER. Canadian Schenley Distilleries, Ltd. SN 269,501. Pub. 1-9-68. Filed 4-19-67.

846,773. INSIGNIA. Canadian Schenley Distilleries, Ltd. SN 269,503. Pub. 1-9-68. Filed 4-19-67.

Class 51 — Cosmetics and Toilet Preparations

846,774. RECTANGULAR SHAPED BOTTLE WITH BARREL SHAPED CLOSURE. Mem Company, Inc. SN 197,500. Pub. 1-9-68. Filed 7-9-64.

846,775. BAN/DRUFF. Caryl Richards, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 202,852. Pub. 1-9-68. Filed 9-28-64.

846,776. MISTER L. Richard Hudnut. SN 215,741. Pub. 11-30-65. Filed 4-5-65.

846,777. MAN AHEAD AND DESIGN. Samley Products, Inc. SN 233,533. Pub. 8-29-67. Filed 11-29-65.

846,778. BLUE ROSE (DESIGN). Bonne Bell, Inc. SN 242,324. Pub. 7-4-67. Filed 3-31-66.

846,779. SMOKEY CRYSTAL. Clairol Incorporated. SN 254,505. Pub. 1-9-68. Filed 9-15-66.

846,780. COVER GIRL! THE 'SHINERS.' Noxell Corporation. SN 257,882. Pub. 1-9-68. Filed 11-3-66.

846,781. COOL PLATINUM. Clairol Incorporated. SN 258,049. Pub. 1-9-68. Filed 11-7-66.

846,782. ALLISON AMES. Gregory Fulginiti and Romaeo Fulginiti, d.b.a. Allison Ames Co. MULTIPLE CLASS (Classes 51 and 52). SN 258,373. Pub. 1-9-68. Filed 11-10-66.

846,783. LUV THAT SUN. Balm Barr Incorporated. SN 261,448. Pub. 1-9-68. Filed 12-27-66.

846,784. LADY GOTHAM. Chadbourn Gotham, Inc. SN 265,401. Pub. 1-9-68. Filed 2-24-67.

846,785. TREASURE BAY. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 266,923. Pub. 1-9-68. Filed 3-16-67.

846,786. VIBRATO. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 266,924. Pub. 1-9-68. Filed 3-16-67.

846,787. FORTUNE KOOKIE. Cosmetically Yours, Inc. SN 267,321. Pub. 1-9-68. Filed 3-22-67.

846,788. ADONIS. Deluxol Laboratories, Inc. SN 267,734. Pub. 1-9-68. Filed 3-28-67.

846,789. RESPLENDA. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 267,850. Pub. 1-9-68. Filed 3-29-67.

846,790. BEOWULF. Hoyl Laboratories, Inc. SN 267,947. Pub. 1-9-68. Filed 5-3-67.

846,791. NUIT DE NOEL. Caron Corporation. SN 268,572. Pub. 1-9-68. Filed 4-7-67.

846,792. FACE SLICKER. Yardley of London, Inc. SN 269,372. Pub. 1-9-68. Filed 4-17-67.

846,793. THE MOMENT. Clairol Incorporated. SN 269,507. Pub. 1-9-68. Filed 4-19-67.

846,794. YE-YE. Clairol Incorporated. SN 269,511. Pub. 1-9-68. Filed 4-19-67.

846,795. PURE TORTURE. Clairol Incorporated. SN 269,512. Pub. 1-9-68. Filed 4-19-67.

846,796. SCUBA. Clairol Incorporated. SN 269,514. Pub. 1-9-68. Filed 4-19-67.

846,797. COMPEL. Avon Products, Inc. SN 270,217. Pub. 1-9-68. Filed 4-28-67.

846,798. TONEX. Kleinol Produktion G.m.b.H. SN 280,749. Pub. 1-9-68. Filed 9-20-67.

846,799. BODY JOB. Alberto-Culver Company. SN 283,385. Pub. 1-9-68. Filed 10-26-67.

Class 52 — Detergents and Soaps

846,775. (See Class 51 for this trademark.)

846,782. (See Class 51 for this trademark.)

846,800. HOSTESS. Racine Industrial Plant, Inc. SN 254,062. Pub. 1-9-68. Filed 9-8-66.

846,801. ZEPHYROID. W. R. Grace & Co. SN 257,184. Pub. 1-9-68. Filed 10-25-66.

846,802. BELLODGIA. Caron Corporation. SN 268,574. Pub. 1-9-68. Filed 4-7-67.

846,803. MIRACLEAN. Babson Bros. Co. SN 274,161. Pub. 11-21-67. Filed 6-19-67.

846,804. MATCHMAKERS. Chesebrough-Pond's Inc. SN 282,267. Pub. 1-9-68. Filed 10-11-67.

Service Marks

Class 100 — Miscellaneous

846,805. APARTOTEL. Jose Melia Sinisterra. SN 237,043. Pub. 1-9-68. Filed 1-21-66.

846,806. A.S.T.A. ETC. AND DESIGN. American Surgical Trade Association. SN 250,813. Pub. 1-9-68. Filed 7-22-66.

846,807. MC². Messinger Consultants Co. SN 257,873. Pub. 1-9-68. Filed 11-3-66.

846,808. FF AND DESIGN. Florida Food Products, Inc. SN 262,153. Pub. 11-14-67. Filed 1-9-67.

846,809. THE PARTY GIVERS AND DESIGN. The Party Givers. SN 263,603. Pub. 1-9-68. Filed 1-30-67.

846,810. DESCON AND DESIGN. Design Consultants Engineering Corp. SN 263,898. Pub. 11-28-67. Filed 2-3-67.

846,811. SIGNS AND SYMBOLS AND DESIGN. William Bulger, d.b.a. Wm. Bulger & Associates. SN 264,390. Pub. 1-9-68. Filed 2-10-67.

846,812. MISCELLANEOUS DESIGN. Associated Testing Laboratories, Inc. SN 265,599. Pub. 1-9-68. Filed 2-28-67.

846,813. MISCELLANEOUS DESIGN. Associated Testing Laboratories, Inc. SN 265,600. Pub. 1-9-68. Filed 2-28-67.

Class 101 — Advertising and Business

846,703. (See Class 32 for this trademark.)

846,814. KEEP TAB WITH FANTA. Robert D. Fanta, d.b.a. Rex Business Service. SN 203,656. Pub. 2-8-66. Filed S.R. 10-9-64; Am. P.R. 5-25-65.

846,815. TEL AMERICAN AND DESIGN. American Hospital Supply Corporation. SN 226,975. Pub. 1-9-68. Filed 9-2-65.

846,816. ELAINE REVELL AND DESIGN. Elaine Revell, Incorporated. SN 237,188. Pub. 1-9-68. Filed 1-21-66.

846,817. BATTLE OF THE BANDS AND DESIGN. Battle of the Bands, Inc. SN 253,273. Pub. 1-9-68. Filed 8-29-66.

846,818. TASK FORCE AND DESIGN. Statistical Tabulating Corporation. SN 253,796. Pub. 1-2-68. Filed 9-2-66.

846,819. API AGENCY. Automated Personnel International Inc. SN 258,882. Pub. 1-9-68. Filed 11-17-66.

846,820. FOR REAL SERVICE IN REAL ESTATE. Rich Port Realty, Inc. SN 261,755. Pub. 1-9-68. Filed 12-30-66.

846,821. DESIGN WITH ARROW POINTING UP TO IT. The Copley Press, Inc. SN 265,610. Pub. 1-9-68. Filed 2-28-67.

846,822. DESIGN WITH ARROW POINTING DOWN TO IT. The Copley Press, Inc. SN 266,003. Pub. 1-9-68. Filed 3-6-67.

846,823. HOTEL EXPRESS HE AND DESIGN. Herbert J. De Graff and Edward Sullivan (firm). SN 268,477. Pub. 1-9-68. Filed 4-6-67.

846,824. B. DALTON BOOKSELLER. B. Dalton Company. SN 276,230. Pub. 1-9-68. Filed 7-18-67.

846,825. DDD AND DESIGN. Drug Distribution Data, Inc. SN 281,341. Pub. 1-9-68. Filed 9-28-67.

Class 102 — Insurance and Financial

846,826. YA GOTTA WANNA. Robert E. Young. SN 247,433. Pub. 1-9-68. Filed 6-6-66.

846,827. FACSIMILE OF FACTORY WITHIN OUTLINE OF U.S. (DESIGN). Group Securities, Inc. SN 247,502. Pub. 1-9-68. Filed 6-7-66.

846,828. (PPP). Prepaid Prescription Plans, Inc. SN 267,384. Pub. 1-9-68. Filed 3-23-67.

Class 103 — Construction and Repair

846,829. MACCLEEN'S VELVAMATIC AND DESIGN. LBBJ Enterprises, Inc. SN 251,438. Pub. 1-9-68. Filed 8-1-66.

843,830. GOLD SEAL ATLANTIC OIL HEAT GUARANTEED SERVICE AND DESIGN. Atlantic Richfield Company. SN 264,790. Pub. 1-9-68. Filed 2-16-67.

Class 105 — Transportation and Storage

846,831. LA BELLE CREOLE AND DESIGN. La Belle Creole Internationale, S.A. SN 238,956. Pub. 1-9-68. Filed 2-16-66.

846,832. FLY THE FRIENDLY SKIES OF UNITED. United Air Lines, Inc. SN 261,895. Pub. 1-9-68. Filed 1-3-67.

Class 106 — Material Treatment

846,833. PP AND DESIGN. Perfect Photo, Inc. SN 255,348. Pub. 1-9-68. Filed 9-28-66.

Class 107 — Education and Entertainment

846,834. HARD HAT HARRY AND DESIGN. Stephen R. Hayes. SN 254,576. Pub. 5-9-67. Filed 9-16-66.

846,835. PHILLIES P AND DESIGN. The Philadelphia National League Club. SN 255,351. Pub. 1-9-68. Filed 9-28-66.

846,836. NEW VAUDEVILLE BAND. New Vaudeville Band, Ltd. SN 261,318. Pub. 1-9-68. Filed 12-22-66.

846,837. THE EMBERS. The Embers. SN 263,166. Pub. 1-9-68. Filed 1-24-67.

846,838. POTOMAC HORSE CENTER, INC. AND DESIGN. Potomac Horse Center, Inc. SN 267,444. Pub. 1-9-68. Filed 3-23-67.

Collective Membership Mark

Class 200

846,839. THE CATHOLIC HOSPITAL ASSOCIATION AND DESIGN. The Catholic Hospital Association. SN 263,533. Pub. 1-9-68. Filed 1-30-67.

Certification Mark

Class B — Services

846,840. A.M.I.—MONTESSORI SCHOOL. The Association Montessori Internationale. SN 244,071. Pub. 1-9-68. Filed 4-22-66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

846,849. Dorit Bird, d.b.a. House of Imports, Silverton, Colo. SN 233,430. Filed P.R. 11-29-65; Am. S.R. 7-13-67.

HOUSE OF IMPORTS

Class 46—Foods and Ingredients of Foods

For Home Canned Preserves and Apple Fritters (Int. Cl. 29).

Class 50—Merchandise Not Otherwise Classified

For Souvenirs Consisting of Railroad Spikes, Gem Stones, Drill Bits With Ore and Rock Specimens, Drill Bits With Railroad Spikes, Ore and Rock Specimens, and Wooden Souvenirs to Which Photographs Are Attached (Int. Cl. 20).

First use June 1960.

Class 2 — Receptades

846,841. Kitty Kan, Montrose, Colo. SN 268,604. Filed P.R. 4–7–67; Am. S.R. 12–12–67.

KITTY KAN

For Litter Pan for Cats (Int. Cl. 21).
First use on or about Apr. 1, 1965.

Class 32 — Furniture and Upholstery

846,842. Gingher Manufacturing Company, Inc., Scranton, Pa. SN 185,999. Filed P.R. 2–4–64; Am. S.R. 6–29–66.

The mark consists of a narrow silver or aluminum strip or band, painted or otherwise applied along the lowermost edge of the front depending flange and at least portions of the lowermost edges of the side depending flanges of shelves of the goods, the strip or band being considerably less in width than the widths of the front and side depending flanges.

For Valet Racks, Wall Racks and Hat, Coat and Parcel Racks (Int. Cl. 20).
First use on or about Dec. 17, 1957.

846,843. June H. Heveridge, Simsbury, Conn. SN 261,191. Filed P.R. 12–21–66; Am. S.R. 1–10–68.

PILLOW-ETTE

For Small Pillow (Int. Cl. 20).
First use about Oct. 19, 1966.

Class 38 — Prints and Publications

846,844. American Society for Metals, Novelty, Ohio. SN 240,492. Filed P.R. 3–9–66; Am. S.R. 1–15–68

MATERIALS TODAY

For Feature Section of Applicant's Monthly Magazine, Said Section and Magazine Being Designed for Applicant's Members and for Engineers, Designers, Processors, Manufacturers, and Other Persons and Organizations Concerned With Metals and Related Engineering Materials and Products Made Thereof (Int. Cl. 16).
First use February 1966.

846,845. Victor Kayfetz Productions, Inc., New York, N.Y. SN 254,394. Filed P.R. 9–13–66; Am. S.R. 1–5–68.

PROJECTED PRESENTATIONS

For Developed Motion Picture Films (Int. Cl. 9).
First use Apr. 14, 1966.

846,846. Johnson Hill's Press, Inc., Fort Atkinson, Wis. SN 265,531. Filed P.R. 2–27–67; Am. S.R. 1–29–68.

AG BUSINESS JOURNAL

For Bi-Monthly Magazine (Int. Cl. 16).
First use Nov. 1, 1966.

846,847. Port Publications, Inc., Port Washington, Wis. SN 265,555. Filed P.R. 2–27–67; Am. S.R. 1–18–68.

Sailing

For Magazine (Int. Cl. 16).
First use Dec. 15, 1966.

846,848. Rickard Publishing Company, Chicago, Ill. SN 269,216. Filed P.R. 4–14–67; Am. S.R. 1–19–68.

ELECTRICAL CONSTRUCTION DESIGN

For Magazine (Int. Cl. 16).
First use Oct. 15, 1965.

Class 46 — Foods and Ingredients of Foods

846,849. See Section 1 (Combined Certificate).

846,850. Bunte Candies, Inc., Oklahoma City, Okla. SN 276,919. Filed 7–27–67.

TOO GOOD TO KEEP UNDER WRAPS

For Candy of All Kinds (Int. Cl. 30).
First use May 5, 1965.

Class 50 — Merchandise Not Otherwise Classified

846,849. See Section 1 (Combined Certificate).

TRADEMARK REGISTRATIONS RENEWED

67,441. "QUAKER" AND DESIGN. Cl. 46 (Int. Cl. 31). 2–4–08.
67,453. QUAKER. Cl. 46 (Int. Cl. 30). 2–4–08.
67,454. REPRESENTATION OF QUAKER. Cl. 46 (Int. Cl. 30). 2–4–08.
67,773. THE CHAIRMAN. Cl. 17 (Int. Cl. 34). 2–18–08.
67,798. REPRESENTATION OF HEAD OF EDGE-TOOL. Cl. 23 (Int. Cl. 8). 2–18–08.
67,850. REPRESENTATION OF A CROCODILE. Cl. 23 (Int. Cl. 8). 2–25–08.
67,856. "KEEN KUTTER" AND DESIGN. Cl. 23 (Int. Cl. 8). 2–25–08.
67,928. BOURNVILLE. Cl. 46 (Int. Cl. 30). 2–25–08.
68,001. DIAMOND EDGE Cl. 23 (Int. Cl. 7). 3–3–08.
68,318. REPRESENTATION OF AN EAGLE PERCHED ON A CROWN. Cl. 42 (Int. Cl. 24). 3–24–08.
69,389. TRICOFERO. Cl. 18 (Int. Cl. 5). 6–9–08.
69,488. REUTER. Cl. 18 (Int. Cl. 5). 6–16–08.
227,141. ALBERT VERLEY. Cl. 6 (Int. Cls. 1 and 3). 4–26–27.
234,572. CAMPANA'S. Cl. 51 (Int. Cl. 3). 11–1–27.
234,809. LIGHTNIN. Cl. 39 (Int. Cl. 25). 11–8–27.
235,647. PARK AVENUE. Cl. 42 (Int. Cl. 24). 11–22–27.
237,970. BOXOCKET. Cl. 23 (Int. Cl. 8). 1–24–28.
239,397. REGAL. Cl. 21 (Int. Cl. 9). 3–6–28.
239,805. HAPPY HOME. Cl. 46 (Int. Cl. 30). 3–13–28.
240,809. A.C.P. RODINE. Cl. 6 (Int. Cl. 1). 4–10–28.
241,151. SWEET GEORGIA BROWN. Cl. 51 (Int. Cl. 3). 4–17–28.
242,751. PROBAK. Cl. 23 (Int. Cl. 8). 6–5–28.
243,518. REPRESENTATION OF SEAL AND RIBBONS. Cl. 46 (Int. Cl. 29). 6–26–28.
244,634. SWANK. Cl. 28 (Int. Cl. 14). 7–24–28.
433,808. CLOUDTONE. Cl. 51 (Int. Cl. 3). 10–28–47.
434,494. LOURNAY. Cl. 51 (Int. Cl. 3). 11–18–47.
435,084. PROCARMIN. Cl. 18 (Int. Cl. 5). 12–9–47.
435,687. MAZITAS. Cl. 46 (Int. Cl. 30). 1–6–48.
435,967. INTERCHEM. Cl. 6 (Int. Cl. 2). 1–20–48.
436,002. H-O. Cl. 46 (Int. Cl. 30). 1–20–48.
436,083. JULIET. Cl. 27 (Int. Cl. 14). 1–20–48.
436,147. DEFINIZED. Cl. 42 (Int. Cl. 24). 1–27–48.
436,366. MISCELLANEOUS DESIGN. Cl. 23 (Int. Cl. 8). 2–3–48.
436,416. DOVCELLE. Cl. 42. (Int. Cl. 24). 2–10–48.
436,540. SUN CHEMICAL CORP. Cl. 11 (Int. Cl. 2). 2–10–48.
436,564. CELALOOM. Cl. 42 (Int. Cl. 24). 2–10–48.
436,762. HAMILTON. Cl. 27 (Int. Cl. 14). 2–17–48.
436,899. CARVEN. Cl. 39 (Int. Cl. 25). 3–2–48.
436,902. MORGIN. Cl. 39 (Int. Cl. 25). 3–2–48.
437,046. SAPPHIRE. Cl. 46 (Int. Cl. 30). 3–2–48.
437,547. TUBIZE. Cl. 42 (Int. Cl. 24). 3–30–48.
437,628. WHITEHALL AND TEMPLE DESIGN. Cl. 18 (Int. Cls. 3 and 5). 3–30–48.
437,844. CLEAN QUICK. Cl. 52 (Int. Cl. 3). 3–30–48.
437,845. DOVER. Cl. 52 (Int. Cl. 3). 3–30–48 .
437,846. CONCORD. Cl. 52 (Int. Cl. 3). 3–30–48.
437,896. SAINT GEORGE ABBO AND DESIGN. Cl. 46 (Int. Cl. 31). 4–6–48.
438,318. STAR. Cl. 52 (Int. Cl. 3). 4–13–48.
438,320. BLUE RIBBON. Cl. 52 (Int. Cl. 3). 4–13–48.
438,322. DERBY. Cl. 52 (Int. Cl. 3). 4–13–48.
438,324. TOWN TALK. Cl. 52 (Int. Cl. 3). 4–13–48.
438,330. KIRK'S. Cl. 52 (Int. Cl. 3). 4–13–48.
438,336. GRANDE BAROQUE. Cl. 28 (Int. Cl. 8). 4–13–48.
438,337. GRAND COLONIAL. Cl. 28 (Int. Cl. 8). 4–13–48.
438,338. ROSE POINT. Cl. 28 (Int. Cl. 8). 4–13–48.
438,339. SIR CHRISTOPHER. Cl. 28 (Int. Cl. 8). 4–13–48.
438,340. STRADIVARI. Cl. 28 (Int. Cl. 8). 4–13–48.
438,342. MOON. Cl. 52 (Int. Cl. 3). 4–13–48.
438,357. PROCTER & GAMBLE. Cl. 52 (Int. Cl. 3). 4–13–48.
438,455. SHERWIN-WILLIAMS. Cl. 16 (Int. Cl. 2). 4–20–48.
438,503. WEEDONE. Cl. 6 (Int. Cl. 5). 4–27–48.
438,578. E. Cl. 15 (Int. Cl. 4). 5–4–48.
438,762. FASHION PLATE. Cl. 32 (Int. Cl. 20). 5–11–48.
439,024. SANDS OF THE DESERT. Cl. 39 (Int. Cl. 25). 6–1–48.
439,109. PLASTICINE. Cl. 1 (Int. Cl. 16). 6–1–48.
439,291. MINUTE MAN. Cl. 52 (Int. Cl. 3). 6–15–48.
439,296. MENAGEN. Cl. 18 (Int. Cl. 5). 6–15–48.
439,372. WURCO. Cl. 23 (Int. Cls. 7 and 8). 6–22–48.
439,440. LA VIDA. Cl. 45 (Int. Cl. 32). 6–29–48.
439,470. NASCO. Cl. 22 (Int. Cl. 28). 6–29–48.
439,694. LANSCO AND DESIGN. Cl. 14 (Int. Cl. 6). 7–13–48.
500,197. EVERHOT. Cl. 34 (Int. Cl. 11). 5–11–48.
500,212. CASCADE. Cl. 52 (Int. Cl. 3). 5–11–48.
500,518. GRISTLE. Cl. 39 (Int. Cl. 25). 6–1–48.
500,569. PRELL. Cl. 52 (Int. Cl. 3). 6–1–48.
500,748. TROPIC-SNOW. Cl. 39 (Int. Cl. 25). 6–29–48.
500,834. MILLERS FORGE. Cl. 44 (Int. Cls. 8 and 21). 7–6–48.
500,996. DURA-BLACK. Cl. 6 (Int. Cl. 1). 7–13–48.
501,032. MEXIDE. Cl. 6 (Int. Cl. 5). 7–13–48.
501,035. COLITHO. Cl. 11 (Int. Cls. 1, 3, and 16). 7–13–48.
501,085. HIFECT. Cl. 37 (Int. Cl. 16). 7–20–48.

TRADEMARK REGISTRATIONS CANCELED

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234,653. NOMA. Cl. 21. 11–1–27.
821,681. BROOKDALE. Cl. 39. 1–3–67.
840,545. BROOKDALE. Cl. 39. 12–12–67.
842,570. GOLDEN TIGER. Cl. 51. 1–16–68.
842,569. BENGEL TIGER. Cl. 51. 1–16–68.

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20,625. J. & P. COATS AND DESIGN. Cl. 43. 1–19–1892.
110,868. THE NATIONAL CALL. Cl. 27. 6–13–16.
158,508. RENAMEL. Cl. 16. 9–12–22.
233,997. "RAILWAY LINE CLEARANCES" ETC. Cl. 38. 10–18–27.
332,193. VANASIL. Cl. 14. 2–4–36.
376,634. BRENDA BREEZE. Cl. 38. 4–2–40.
376,649. PORTRAIT OF BRENDA BREEZE. Cl. 38. 4–2–40.
385,974. HYPER-VISCRA. Cl. 18. 3–25–41.
393,434. KASOCO. Cl. 46. 2–17–42.
416,513. BLUE BANK. Cl. 46. 9–18–45.

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727,129. STRENGTH-END. Cl. 2.
727,130. LADY SUZAN. Cl. 2.
727,144. KOLPHOS. Cl. 6.
727,145. AEROZINE 50. Cl. 6.
727,149. AEROFUME. Cl. 6.
727,153. POLY-D. Cl. 7.
727,161. BLUE BANTAM. Cl. 11.
727,162. POP STIX. Cl. 13.
727,166. FANCIFUL FIGURE OF A MAN. Cl. 15.
727,171. ANTICON. Cl. 16.
727,176. BILLARD PROTEIN AC AND DESIGN. Cl. 18.
727,178. FORMULA-S. Cl. 18.
727,181. NEMISIS. Cl. 18.
727,182. DL CERTIGARD DIAMOND STANDARD AND DESIGN. Cl. 18.
727,183. K-SYRUP. Cl. 18.
727,188. SELECT-A-STEAM. Cl. 21.
727,191. DIRK. Cl. 21.
727,193. SOUND-OFF AND DESIGN. Cl. 21.
727,194. RES-Q-MATIC. Cl. 21.
727,199. CLARO THU-GRIP. Cl. 22.
727,201. ANSWERS ON THE RED. Cl. 22.
727,206. LIXIE. Cl. 23.
727,209. PLASTI-VEND'R. Cl. 23.
727,212. STRIPWRIGHT. Cl. 23.

727,215. B-W MECHANICS UNIVERSAL JOINT, BORG-WARNER AND DESIGN. Cl. 23.
727,218. TRIG-A-MATIC. Cl. 23.
727,223. WHIRLPOOL. Cl. 24.
727,228. PIEZOR AND DESIGN. Cl. 26.
727,229. COLORVISION. Cls. 26 and 50.
727,233. EMATIS. Cl. 27.
727,237. PORTRAIT. Cl. 30.
727,238. "THESE ARE MY PEOPLE" AND PORTRAIT. Cl. 30.
727,242. PORTRAIT OF A MAN. Cl. 33.
727,243. JONNY VENT AND DESIGN. Cl. 34.
727,245. REPRESENTATION OF A PAINT BRUSH. Cl. 37.
727,246. POGO. Cl. 37.
727,247. ECON-O-SET. Cl. 37.
727,254. C.P.I. NEWS. Cl. 38.
727,257. SAILFAST BY SEVEN SEAS. Cl. 39.
727,259. SPADS. Cl. 39.
727,265. TRA-VEL-COTE AND DESIGN. Cl. 39.
727,279. L AND SPOOL DESIGN. Cl. 43.
727,280. EXER-MATIC. Cl. 44.
727,281. BON A PED AND DESIGN. Cl. 44.
727,289. RICE A-BONGO. Cl. 46.
727,290. VESTA. Cl. 46.
727,299. BOBBY SHAFTOE'S. Cl. 46.
727,301. THE PEANUT BUTTER CHURN. Cl. 46.
727,310. RIVIERA. Cl. 48.
727,312. TECH-TARP. Cl. 50.
727,313. PORTRAIT OF A MAN. Cl. 50.
727,314. PORTRAIT OF A MAN. Cl. 50.
727,315. REPRESENTATION OF A HEART. Cl. 51.
727,316. ORAL MASTER. Cl. 51.
727,318. MORA. Cl. 51.
727,319. OLALIN. Cl. 51.
727,324. CARICATURE OF MAN WITH TOP HAT. Cl. 52.
727,325. DISC. Cl. 52.
727,326. TAB-JETS. Cl. 52.
727,327. DETABGENT. Cl. 52.
727,330. SCAMPER. Cl. 52.
727,334. CIRCLES AND MAP DESIGN WITH WORDING. Cl. 101.
727,339. BURKE & COMPTON REALTY, INC. AND DESIGN. Cl. 102.
727,340. LOFTLEIDIR AND DESIGN. Cl. 105.

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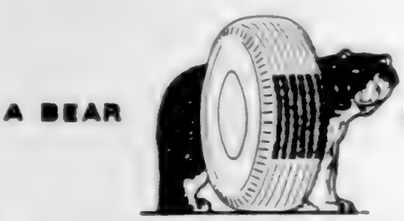
581,698. TRAVEL KADER. Cl. 105. 7-14-53.
645,543. FULLER AND DESIGN. Cl. 18. 5-14-57.
672,946. LIVING BEAUTY. Cl. 52. 1-20-59.
678,452. EMBER AND DESIGN. Cl. 36. 5-12-59.
728,679. KEEP A KOPY. Cl. 37. 3-13-62.
740,354. FLITE. Cl. 52. 11-6-62.
807,357. TEEN SET. Cl. 51. 4-19-66.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

69,461. CHOISA. Cl. 46. 6-16-08. S. S. Pierce Company, Boston, Mass. Amended to appear:

CHOISA

155,426. A BEAR FOR WEAR AND DESIGN. Cl. 35. 5-30-22. Gillette Rubber Company. Uniroyal, Inc., New York, N.Y. Amended to appear:



252,160. CANNONETTE. Cl. 39. 9-6-27. Cannon Mills, Inc. Cannon Mills Company, Kannapolis, N.C. Amended to appear:

CANNONETTE

283,928. ROYAL PALM ICE. Cl. 1. 10-11-27. General Public Utilities Company. Southeastern Public Service Company, New York, N.Y. Amended: In the statement, column 1, lines 16 and 17, "words 'Ice' and 'Quality' are" is deleted and *word "Ice"* is is inserted, and the drawing is amended to appear:

ROYAL PALM ICE

248,549. CHARMIN. Cl. 37. 10-23-28. Hoberg Paper and Fibre Company. The Procter & Gamble Company, Cincinnati, Ohio. Amended to appear:

CHARMIN

437,924. HIGHLAND QUEEN ETC. AND DESIGN. Cl. 49. 4-6-48. MacDonald & Muir Limited, Leith, Scotland. Amended to appear:

733,726. PRINTA PUNCH. Cl. 23. 7-3-62. Dashew Business Machines, Inc., Los Angeles, Calif. Corrected: In the statement, column 1, line 1, "Illinois" should be deleted and *Delaware* should be inserted.

752,183. U.S. ROYAL AND DESIGN. Cl. 39. 7-2-63, United States Rubber Company. Uniroyal, Inc., New York, N.Y. Amended to appear:

Royal

794,551. VANDERMINT. Cl. 49. 8-17-65. The Huntington Creek Corporation, doing business as Leroux & Company. The Huntington Creek Corporation, New York, N.Y. Amended to appear:

VANDERMINT

811,900. FROSTY SWEET. Cl. 46. 7–26–66. Purity Stores, Inc., Burlingame, Calif. Amended: In the statement, column 2, line 2, after "milk" *sold only through registrant's retail outlets or through associated retail outlets* is inserted, and the drawing is amended to appear:

FROSTY SWEET

816,649. PHILIPPE VENET. Cls. 39 and 51. 10–11–66. Philippe Venet, Paris, France. Corrected: In the statement, column 2, line 1, before "lipsticks," *perfumery* should be inserted.

831,268. K.M.V. AND DESIGN. Cl. 49. 6–27–67. Ko-operatieve Wijnbouwers Vereniging van Zuid-Afrika Beperkt, Cape Province, Republic of South Africa. Corrected: In the statement, column 1, line, "Ko-Operatieve Wynbouwers Vereniging Van" should be deleted and *Ko-operatieve Wijnbouwers Vereniging van* should be inserted.

832,922. COLOR-CUE. Cl. 36. 8–1–67. G.H.S. Corporation, Battle Creek, Mich. Corrected: In the statement, column 2, line 3, "ukuele" should be deleted and *ukulele* should be inserted.

836,565. BOSTITCH. Cl. 13. 10–10–67. Textron Inc., assignee of Bostitch, Inc., Providence, R.I. Corrected: In the statement, column 2, line 4, "135,902" should be deleted and *135,920* should be inserted and "731,138" should be deleted and *731,137* should be inserted.

837,718. GLOBETROTTER. Cl. 2. 10–31–67. Aladdin Industries, Incorporated, Chicago, Ill. Corrected: In the statement, column 1, line 1, "Alladin" should be deleted and *Aladdin* should be inserted.

840,246. BLUE RIBBON AND DESIGN. Cl. 3. 12–12–67. Blue Ribbon Leather Company, Inc., Shelbyville, Tenn. Corrected: In the statement, column 2, line 1, before "tail" *harness and riding equipment—namely, saddles,* should be inserted.

840,910. DANDY DOG AND DESIGN. Cl. 38. 12–19–67. American Book Company, New York, N.Y. Corrected:

841,257. MANNA RECORDS AND DESIGN. Cl. 36. 12–26–67. Manna Music Inc., Hollywood, Calif. Corrected: In the statement, column 2, line 1, "photograph" should be deleted and *phonograph* should be inserted.

841,918. STAUFFER JETI AND DESIGN. Cl. 15. 1–9–68. Stauffer Chemical Company, New York, N.Y. Corrected as follows:

Stauffer JETI

842,656. COURREGES. Cl. 51. 1–16–68. Courreges Parfums (S.a.r.L.), Paris, France. Corrected: In the statement, column 1, line 1, after "Parfums" (*S.a.r.L.*) should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

531,024. BRUTE. Cl. 21. The Frank Corporation. 9–19–50. New Cert. Sec. 7(c) to The Goodyear Tire & Rubber Company, Akron, Ohio.

555,776. VESS. Cl. 45. Vess Dry Company of Ohio. 3–11–52. New Cert. Sec. 7(c) to Vess Beverage Company, St. Louis, Mo.

659,223. PETROCOM. Cl. 15. Petroleum Combustion Corp. 3–11–58. New Cert. Sec. 7(c) to Petroleum Combustion Corporation, Village of Port Washington, N.Y.

690,476. MECHTRONICS. Cl. 21. Pneumafil Corporation. 12–29–59. New Cert. Sec. 7(c) to Mech-Tronics Corporation, Melrose Park, Ill.

757,348. CARDINAL. Cl. 34. The C. A. Olsen Manufacturing Company. 9–24–63. New Cert. Sec. 7(c) to Cardinal Products Company, Saginaw, Mich.

INDEX OF REGISTRANTS

MARCH 26, 1968

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

Acorn Chemical Co., Cleveland, Ohio. 846,546, pub. 1–9–68. Cl. 12.

Acushnet Process Sales Co., New Bedford, Mass. 846,642–3, pub. 1–9–68. Cl. 22.

Aerojet-General Corp., Azusa, Calif. 727,145, canc. Cl. 6.

Aerojet-General Corp., El Monte, Calif. 846,611, pub. 1–9–68. Multiple Class (Classes 21, 26, and 34).

Agro-Power Inc., Fond du Lac, Wis. 846,631, pub. 1–9–68. Cl. 21.

Agrotiller Ltd., Dundalk, Louth, Ireland. 846,662, pub. 1–9–68. Cl. 23.

Aladdin Industries, Inc., Chicago, Ill. 837,718, cor. Cl. 2.

Albany Packing Co., Inc., West Albany, to Tobin Packing Co., Inc., Rochester, N.Y. 243,518, ren. 3–26–68. Cl. 46.

Alberto-Culver Co., Melrose Park, Ill. 846,799, pub. 1–9–68. Cl. 51.

Allen, William A., San Bernardino, Calif. 846,685, pub. 1–9–68. Cl. 23.

Allen, William R., Manchester, to John Sinclair Ltd., Newcastle-Upon-Tyne, England. 67,773, ren. 3–26–68. Cl. 17.

Allied Supermarkets Inc., Detroit, Mich., from Kingston Products Co., Skokie, Ill. 846,763, pub. 1–2–68. Cl. 46.

Alrose Chemical Co., Cranston, R.I., to Geigy Chemical Corp., Ardsley, N.Y. 436,147, ren. 3–26–68. Cl. 42.

Ambassador Mfg. Co., St. Lambert, Montreal, Quebec, Canada. 846,548, pub. 1–9–68. Cl. 12.

Amchem Products, Inc. : *See*—
American Chemical Paint Co.

American Beauty Macaroni Co., d.b.a. The American Beauty Macaroni Co., Kansas City, Kans. 727,289, canc. Cl. 46.

American Beauty Macaroni Co., The : *See*—
American Beauty Macaroni Co.

American Book Co., New York, N.Y. 840,910, cor. Cl. 38.

American Chemical Paint Co., to Amchem Products, Inc., Ambler, Pa. 240,809, ren. 3–26–68. Cl. 6.

American Chemical Paint Co., to Amchem Products, Inc., Ambler, Pa. 438,503, ren. 3–26–68. Cl. 6.

American Crayon Co., The : *See*—
Dixon, Joseph, Crucible Co., The.

American Home Products Corp. : *See*—
Whitehall Pharmacal Co.

American Hospital Supply Corp., Evanston, Ill. 846,815, pub. 1–9–68. Cl. 101.

American Lava Corp., Chattanooga, Tenn. 846,639, pub. 1–9–68. Cl. 21.

American Potash & Chemical Corp., Los Angeles, Calif. 727,149, canc. Cl. 6.

American Printers & Lithographers, Inc., Chicago, Ill. 846,542, pub. 1–9–68. Cl. 11.

American Radiator & Standard Sanitary Corp. : *See*—
American Standard Inc.

American Society for Metals, Novelty, Ohio. 846,844. Cl. 38.

American Standard Inc., from American Radiator & Standard Sanitary Corp., New York, N.Y. 846,555–7, pub. 1–9–68. Multiple Class (Classes 13 and 31).

American Standard Inc., from American Radiator & Standard Sanitary Corp., New York, N.Y. 846,568–70, pub. 1–9–68. Cl. 13.

American Surgical Trade Assn., Chicago, Ill. 846,806, pub. 1–9–68. Cl. 100.

American Tobacco Co., The, New York, N.Y. 846,586, pub. 1–9–68. Cl. 17.

Ames, Allison, Co. : *See*—
Fulginiti, Gregory, and Romaeo Fulginiti.

Anderson, Vincent, d.b.a. Beacon Engineering Co. of Minnesota, Moorhead, Minn. 846,664, pub. 1–9–68. Cl. 23.

Andis Clipper Co., Racine, Wis. 846,663, pub. 10–24–67. Cl. 23.

Ansley, Arthur, Mfg. Co., New Hope, Pa. 846,637, pub. 1–9–68. Cl. 21.

Ansul Co., The, Marinette, Wis. 846,615, pub. 1–9–68. Cl. 21.

Aquatronic Industries, Inc., Culver City, Calif. 727,194, canc. Cl. 21.

Aquitaine-organico, Paris, France. 846,495, pub. 1–9–68. Cl. 1.

Aridye Corp., assor. to Interchemical Corp., to Interchemical Corp., New York, N.Y. 455,967, ren. 3–26–68. Cl. 6.

Arkansas Louisiana Gas Co., Shreveport, La. 846,545, pub. 1–9–68. Cl. 12.

Arma Research Corp., Huntington Station, N.Y. 846,528, pub. 1–9–68. Multiple Class (Classes 6 and 12).

Arnold, Ralph, d.b.a. Northwest Diamond Tool Co., South San Francisco, Calif. 846,514, pub. 1–9–68. Cl. 4.

Arquette, Cliff, Gettysburg, Pa. 727,237–8, canc. Cl. 30.

Arquette, Cliff, Gettysburg, Pa. 727,242, canc. Cl. 33.

Arquette, Cliff, Gettysburg, Pa. 727,313–4, canc. Cl. 50.

Aspen Corp., Tully, N.Y. 727,325, canc. Cl. 52.

Associated Products, Inc., Chicago, Ill., to Richard Hudnut, Morris Plains, N.J. 433,808, ren. 3–26–68. Cl. 51.

Associated State Enterprise "Rodopa," Genov Str., Sofia, Bulgaria. 846,496, pub. 1–9–68. Multiple Class (Classes 1, 29, and 46).

Associated Testing Laboratories, Inc., Wayne, N.J. 846,812–3, pub. 1–9–68. Cl. 100.

Association Montessori Internationale, The, Amsterdam-Z, Netherlands. 846,840, pub. 1–9–68. Cl. B.

Astro Engineering Corp., Westminster, Calif. 846,738, pub. 1–9–68. Cl. 39.

Atlantic Brewing Co., Chicago, Ill. 727,310, canc. Cl. 48.

Atlantic Lures, Inc., Providence, R.I. 846,650, pub. 1–9–68. Cl. 22.

Atlantic Richfield Co., Philadelphia, Pa. 846,830, pub. 1–9–68. Cl. 103.

Automated Personnel International Inc., New York, N.Y. 846,819, pub. 1–9–68. Cl. 101.

Autostrop Safety Razor Co., Inc., New York, N.Y., to The Gillette Co., Boston, Mass. 242,751, ren. 3–26–68. Cl. 23.

Avon Products, Inc., New York, N.Y. 846,797, pub. 1–9–68. Cl. 51.

Avon Sole Co., Avon, Mass. 500,518, ren. 3–26–68. Cl. 39.

Babson Bros. Co., Oak Brook, Ill. 846,803, pub. 11–21–67. Cl. 52.

Bacharach Industrial Instrument Co., Pittsburgh, Pa. 846,689, pub. 1–9–68. Cl. 26.

Baer & Wilde Co., The, to Swank, Inc., Attleboro, Mass. 244,634, ren. 3–26–68. Cl. 28.

Balm Barr Inc., Hillside, Ill. 846,783, pub. 1–9–68. Cl. 51.

Barclay & Barclay, New York, N.Y., to Lanman & Kemp-Barclay & Co. Inc., Palisades Park, N.J. 69,488–9, ren. 3–26–68. Cl. 18.

Bates Mfg. Co., Inc., Lewiston, Maine. 846,740, pub. 1–9–68. Cl. 39.

Battle of the Bands, Inc., Weymouth, Mass. 846,817, pub. 1–9–68. Cl. 101.

Beacon Engineering Co. of Minnesota : *See*—
Anderson, Vincent.

Beautlich, Inc., Chicago, Ill. 727,181, canc. Cl. 18.

Becker, R. A., Varnish Co., The, Cincinnati, Ohio. 158,608, canc. Cl. 16.

Beckman Instruments, Inc., Fullerton, Calif. 846,686, pub. 1–9–68. Cl. 26.

Bedding Barn, Inc., Newington, Conn. 846,703, pub. 1–9–68. Multiple Class (Classes 32 and 101).

Beecham Group Ltd., d.b.a. Beecham Research Laboratories, Brentford, Middlesex, England. 846,589, pub. 1–9–68. Cl. 18.

Beecham Research Laboratories : *See*—
Beecham Group Ltd.

Bemis Bro. Bag Co., St. Louis, Mo. 727,129, canc. Cl. 2.

Bender, Matthew, & Co. Inc., New York, N.Y. 846,717, pub. 1–9–68. Cl. 38.

Bennett's of New Haven, Inc. : *See*—
Marx-Haas Clothing Co.

Best Foods, Inc., The, to Corn Products Co., New York, N.Y. 436,002, ren. 3–26–68. Cl. 46.

Best Quality Plastics, Inc., Denver, Colo. 846,508, pub. 1–9–68. Cl. 2.

Beveridge, June H., Simsbury, Conn. 846,843. Cl. 32.

Billard Barbell Co., Inc. : *See*—
Billard Corp.

Billard Corp., from Billard Barbell Co., Inc., New York, N.Y. 727,176, canc. Cl. 18.

Birns & Sawyer Cine Equipment Co., Inc., Los Angeles, Calif. 846,612, pub. 1–9–68. Cl. 21.

Bleiman, H. W., Co., Philadelphia, Pa. 727,209, canc. Cl. 23.

Blitz Fog Co., The : *See*—
Northern Industries, Inc.

Blue Point Tool Co., Chicago, Ill., to Snap-On Tools Corp., Kenosha, Wis. 237,970, ren. 3–26–68. Cl. 23.

Blue Ribbon Leather Co., Inc., Shelbyville, Tenn. 840,246, cor. Cl. 3.

Bodegas Marques del Merito, S.A., Jerez de la Frontera, Spain. 846,769, pub. 1–9–68. Cl. 49.

Boehringer, C. H., Sohn, Ingelheim (Rhine), Germany. 727,319, canc. Cl. 51.

Bon-A-Ped Corp., The, Washington, D.C. 727,281, canc. Cl. 44.

Bonne Bell, Inc., Lakewood, Ohio. 846,778, pub. 7–4–67. Cl. 51.

Boone, Chris, d.b.a. Lighting Components Co., Bergenfield, N.J. 846,636, pub. 1–9–68. Cl. 21.

Borden Co., The, New York, N.Y. 846,535, pub. 1–9–68. Cl. 6.

Borg-Warner Corp., Chicago, Ill. 727,215, canc. Cl. 23.

Brooklyn Fibre Broom Co., Inc., Brooklyn, N.Y. 846,697, pub. 1–9–68. Cl. 29.

Brooks, Bobbie, Inc., Cleveland, Ohio. 846,731–2, pub. 1–9–68. Cl. 39.

Brooks, Bobbie, Inc., Cleveland, Ohio. 846,739, pub. 1–9–68. Cl. 39.

Buccellati Silver, Ltd., New York, N.Y. 846,696, pub. 1–9–68. Cl. 28.

Bulger, William, d.b.a. Wm. Bulger & Associates, Milwaukee, Wis. 846,811, pub. 1–9–68. Cl. 100.

Bulger, Wm., & Associates : *See*—
Bulger, William.

Bulova Watch Co., Inc., Flushing, N.Y. 846,617, pub. 1–9–68. Multiple Class (Classes 21 and 36).

Bunte Candies, Inc., Oklahoma City, Okla. 846,850. Cl. 46.

Burke & Compton Realty, Inc., Washington, D.C. 727,339, canc. Cl. 102.

Bush, James P., d.b.a. Bush & Long Potato Chip Co., El Paso, Tex., to General Mills, Inc., Minneapolis, Minn. 435,687, ren. 3–26–68. Cl. 46.

Bush & Long Potato Chip Co.: *See*—
Bush James P.
Byron Leach Co., Memphis, Tenn. 846,590, pub. 9–19–67. Cl. 18.
C. & C. Button & Trimming Co., Inc., New York, N.Y. 846,563, pub. 10–24–67. Multiple Class (Classes 13, 23, 28, and 40).
CKL Distributing Co., Inc., Cleveland, Ohio. 846,684, pub. 1–9–68. Cl. 23.
Cadbury Bros., Ltd., Birmingham, England. 67,928, ren. 3–26–68. Cl. 46.
Camp & McInnes, Inc.: *See*—
Scott, Rufus W., Co.
Campana Corp., Batavia, Ill., to Purex Corp., Ltd., Lakewood, Calif. 234,572, ren. 3–26–68. Cl. 51.
Canadian Schenley Distilleries, Ltd., Montreal, Quebec, Canada. 846,772–3, pub. 1–9–68. Cl. 49.
Cannon Mills, Inc. Cannon Mills Co., Kannapolis, N.C. 232,160. Am. 7(d). Cl. 39.
Caron Corp., New York, N.Y. 846,791, pub. 1–9–68. Cl. 51.
Caron Corp., New York, N.Y. 846,802, pub. 1–9–68. Cl. 52.
Carter Corp.: *See*—
Carter Dry Goods Co.
Carter Dry Goods Co., to Carter Corp., Louisville, Ky. 235,647. ren. 3–26–68. Cl. 42.
Castle Ties, Inc., Los Angeles, Calif. 846,726–7, pub. 1–9–68. Cl. 39.
Catholic Hospital Association, The, St. Louis, Mo. 846,839, pub. 1–9–68. Cl. 200.
Celanese Corp.: *See*—
Celanese Corp. of America.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 436,416, ren. 3–26–68. Cl. 42.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 436,564, ren. 3–26–68. Cl. 42.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 437,547, ren. 3–26–68. Cl. 42.
Cen-Trific-Air Products, Inc.: *See*—
Wallace-Murray Corp.
Chadbourn Gotham, Inc., Charlotte, N.C. 846,784, pub. 1–9–68. Cl. 51.
Chemplex Co., Rolling Meadows, Ill. 846,524, pub. 1–9–68. Cl. 6.
Chesebrough-Pond's Inc., New York, N.Y. 846,804, pub. 1–9–68. Cl. 52.
Chickasha Mobile Homes, Inc., North Kansas City, Mo. 846,601, pub. 1–9–68. Cl. 19.
Chillington Tool Co. Ltd., The, Wolverhampton, England. 67,850, ren. 3–26–68. Cl. 23.
Ciba Corp., d.b.a. The Gland-O-Lac Co., New York, N.Y. 846,526, pub. 1–9–68. Cl. 6.
Clairol Inc., New York, N.Y. 846,779, pub. 1–9–68. Cl. 51.
Clairol Inc., New York, N.Y. 846,781, pub. 1–9–68. Cl. 51.
Clairol Inc., New York, N.Y. 846,793–6, pub. 1–9–68. Cl. 51.
Claro Laboratories, South Bend, Ind. 727,199, canc. Cl. 22.
Clary Corp., San Gabriel, Calif. 846,693, pub. 1–9–68. Cl. 26.
Clay-Adams, Inc., New York, N.Y. 846,523, pub. 1–9–68. Cl. 6.
Coates, J. & P., Ltd., Paisley, Scotland. 20,625, canc. Cl. 43.
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Pacific Alloy Co., Seattle, Wash. 332,193, canc. Cl. 14.
Pacific Farm Co., Firebaugh, Calif. 846,767, pub. 1–9–68. Cl. 46.
Parke, Davis & Co., Detroit, Mich. 439,296, ren. 3–26–68. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 846,592, pub. 1–9–68. Cl. 18.
Parsons, Henrietta, Columbus, Ga. 846,712, pub. 1–9–68. Cl. 36.
Party Givers, The, Menlo Park, Calif. 846,809, pub. 1–9–68. Cl. 100.
Patchogue-Plymouth Co., New York, N.Y. 846,751, pub. 1–9–68. Cl. 42.
Penick, S. B., & Co., d.b.a. Lloyd Brothers Pharmacists, Inc., New York, N.Y., and Cincinnati, Ohio. 385,974, canc. Cl. 18.
Penola Inc., Chicago, Ill., to Humble Oil & Refining Co., Houston, Tex. 438,578, ren. 3–26–68. Cl. 15.
Perfect Photo, Inc., Philadelphia, Pa. 846,833, pub. 1–9–68. Cl. 106.
Petroleum Combustion Corp., to Petroleum Combustion Corp., Village of Port Washington, N.Y. 659,223, new cert. Cl. 15.
Philadelphia National League Club, The, Philadelphia, Pa. 846,835, pub. 1–9–68. Cl. 107.
Phoenix Products Co., Inc., Milwaukee, Wis. 846,627, pub. 1–9–68. Cl. 21.
Pierce, S. S., Co., Boston, Mass. 69,461. Am. 7(d). Cl. 46.
Pneumafil Corp., to Mech-Tronics Corp., Melrose Park, Ill. 690,476, new cert. Cl. 21.
Popstix Corp., from Joseph Telasco, Hicksville, N.Y. 727,162, canc. Cl. 13.
Port Publications, Inc., Port Washington, Wis. 846,847. Cl. 38.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 727,191, canc. Cl. 21.
Potomac Horse Center, Inc., Gaithersburg, Md. 846,838, pub. 1–9–68. Cl. 107.
Prepaid Prescription Plans, Inc., Los Angeles, Calif. 846,828, pub. 1–9–68. Cl. 102.
Procter & Gamble Co., The, Cincinnati, Ohio. 437,844–6, ren. 3–26–68. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 438,318, ren. 3–26–68. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 438,320, ren. 3–26–68. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 438,322, ren. 3–26–68. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 438,324, ren. 3–26–68. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 438,330, ren. 3–26–68. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 438,342, ren. 3–26–68. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 438,357, ren. 3–26–68. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 439,291, ren. 3–26–68. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 500,212, ren. 3–26–68. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 500,569, ren. 3–26–68. Cl. 52.
Professional Disposable Products Inc., Mount Vernon, N.Y. 846,756, pub. 1–9–68. Cl. 44
Pullman Inc., Chicago, Ill. 846,604, pub. 1–9–68. Cl. 19.
Puratronics, Inc., Minneapolis, Minn. 846,575, pub. 1–9–68. Cl. 15.
Purdue Frederick Co., The, Yonkers, N.Y. 846,595, pub. 11–21–67. Cl. 18.
Purex Corp., Ltd.: *See*— Campana Corp.
Purity Stores, Inc., Burlingame, Calif. 811,900. Am. 7(d). Cl. 46.
Putman Publishing Co., Chicago, Ill. 727,254, canc. Cl. 38.
Quaker Oats Co., The, Chicago, Ill. 67,441, ren. 3–26–68. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 67,483–4, ren. 3–26–68. Cl. 46.
RBS Fabrics Ltd., New York N.Y. 846,753, pub. 1–9–68. Cl. 42.
Racine Industrial Plant, Inc., Racine, Wis. 846,800, pub. 1–9–68. Cl. 52.
Railway Equipment & Publication Co., The, New York, N.Y. 233,997, canc. Cl. 38.
Ramillon Rene, Grenoble, France. 846,646, pub. 1–9–68. Cl. 22.
Raney, Charles, Jr., Fort Lauderdale, Fla. 727,193, canc. Cl. 21.
Revell, Elaine, Inc., Chicago, Ill. 846,816, pub. 1–9–68. Cl. 101.
Rex Chainbelt Inc., Milwaukee, Wis. 846,660, pub. 1–9–68. Cl. 23.
Rexall Drug and Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 846,594, pub. 1–9–68. Cl. 18.
Rexall Drug & Chemical Co., d.b.a. Vanda Cosmetics Co., Los Angeles, Calif. 846,785–6, pub. 1–9–68. Cl. 51.
Rexall Drug & Chemical Co., d.b.a. Vanda Cosmetics Co., Los Angeles, Calif. 846,789, pub. 1–9–68. Cl. 51.
Rexall Drug Co.: *See*— Rexall Drug and Chemical Co.

Rich Port Realty, Inc., La Grange, Ill. 846,820, pub. 1–9–68. Cl. 101.
Richards, Caryl, Inc., Jersey City, N.J. 846,775, pub. 1–9–68. Multiple Class (Classes 51 and 52).
Rickard Publishing Co., Chicago, Ill. 846,848. Cl. 38.
Riekes Crisa Corp., Laredo, Tex. 846,704, pub. 1–9–68. Cl. 33.
Rite-O-Lite of California, Inc., Los Angeles, Calif. 846,666, pub. 1–9–68. Cl. 23.
Robertshaw Controls Co.: *See*—
Lux Clock Mfg. Co., The.
Rogers Corp., Rogers, Conn. 846,632, pub. 1–9–68. Cl. 21.
Rostrum Records, Inc., New York, N.Y. 846,710, pub. 1–9–68. Cl. 36.
Royal Appliance Mfg. Co.: *See*—
Geier, P. A., Co., The.
Royal Casket Co., Inc., Muskogee, Okla. 846,510, pub. 1–9–68. Cl. 2.
Rubinstein, Helena, Inc., New York, N.Y. 727,315, canc. Cl. 51.
Rushmore, Walter C., d.b.a. Travel Kader and as American National Travelers Service, Denver, Colo. 581,698, canc. Cl. 105.
S.I.P.A.P. S.p.A. Societa Italiana Prodotti Apparecchi Parrucchieri, Genoa, Italy. 727,318, canc. Cl. 51.
Safeway Stores, Inc., Oakland, Calif. 727,330, canc. Cl. 52.
Samley Products, Inc., Riverdale, Bronx, N.Y. 846,777, pub. 8–29–67. Cl. 51.
Sanders Associates, Inc., Nashua, N.H. 846,709, pub. 1–9–68. Cl. 36.
Sather Cookie Co.: *See*—
Sather, Kenneth L.
Sather, Kenneth L., d.b.a. Sather Cookie Co., Round Lake, Minn. 846,765, pub. 1–9–68. Cl. 46.
Savair Products Co., Warren, Mich. 846,673, pub. 1–9–68. Cl. 23.
Saxony Watch Co., Inc., New York, N.Y. 846,694, pub. 1–9–68. Cl. 27.
Schwabacher Bros. & Co. Inc., Seattle, to Standard Grocery Co., d.b.a. National Grocery Co., Yakima, Wash. 239,805, ren. 3–26–68. Cl. 46.
Schweizerische Seidengazefabrik A.G., Zurich, Switzerland. 68,318, ren. 3–26–68. Cl. 42.
Scientific Glass Apparatus Co., Inc., Bloomfield, N.J. 846,688, pub. 1–9–68. Cl. 26.
Scott, Rufus W., Co., New York, N.Y., to Camp and McInnes, Inc., Reading, Pa. 234,809, ren. 3–26–68. Cl. 39.
Sea-Chefs, Inc., Morehead City, N.C. 727,299, canc. Cl. 46.
Sears, Roebuck and Co., Chicago, Ill. 110,868, canc. Cl. 27.
Sentry Co., The, Foxboro, Mass. 846,506, pub. 1–9–68. Multiple Class (Classes 2 and 14).
Seven Seas: *See*—
Moyer Mfg. Co., The.
Sheffield Watch, Inc., New York, N.Y. 846,695, pub. 1–9–68. Cl. 27.
Sherwin-Williams Co., The, Cleveland, Ohio. 438,455, ren. 3–26–68. Cl. 16.
Siebert, Lee S., Kansas City, Mo., from Stanray Corp., Chicago, Ill. 846,606, pub. 1–9–68. Cl. 19.
Simmons Hardware Co., St. Louis, Mo., to Val-Test Distributors, Inc., Chicago, Ill. 67,798, ren. 3–26–68. Cl. 23.
Simmons Hardware Co., St. Louis, Mo., to Val-Test Distributors, Inc., Chicago, Ill. 67,856, ren. 3–26–68. Cl. 23.
Sinclair, John, Ltd.: *See*—
Allen, William R.
Smith, A. O., Harvestore Products, Inc., Arlington Heights, Ill. 846,675, pub. 1–9–68. Cl. 23.
Smith, Miller & Patch, Inc.: *See*—
Lanteen Medical Laboratories, Inc.
Snap-On Tools Corp.: *See*—
Blue Point Tool Co.
Societe A Responsabilite Limitee, Carven, to Societe Anonyme Carven, Paris, France. 436,899, ren. 3–26–68. Cl. 39.
Societe Anonyme Carven: *See*—
Societe A Responsabilite Limitee, Carven.
Societe Messier, Paris, France. 846,600, pub. 1–9–68. Cl. 19.
South Bend Range Corp., South Bend, Ind. 846,706, pub. 1–9–68. Cl. 34.
Sparky Specialties, Inc., Chicago, Ill. 846,744, pub. 1–9–68. Cl. 40.
Sprague Electric Co., North Adams, Mass. 846,629, pub. 1–9–68. Cl. 21.
Standard Grocery Co.: *See*—
Schwabacher Bros. & Co. Inc.
Standard Oil Co., The, Cleveland, Ohio. 846,499, pub. 9–12–67. Cl. 1.
Stanray Corp.: *See*—
Siebert, Lee S.
Statistical Tabulating Corp., Chicago, Ill. 846,818, pub. 1–2–68. Cl. 101.
Stauffer Chemical Co., New York, N.Y. 841,918, cor. Cl. 15.
Stoddard, Meryl L., Flint, Mich. 846,764, pub. 1–9–68. Cl. 46.
Stone, John N., d.b.a. Lubri-Kote Co., Houston, Tex. 846,576, pub. 11–21–67. Cl. 15.
Stutz Industries, Elkhart, Ind. 846,602, pub. 1–9–68. Cl. 19.
Sun Chemical Corp., New York, N.Y. 436,540, ren. 3–26–68. Cl. 11.
Sun Chemical Corp., New York, N.Y. 846,578, pub. 1–9–68. Cl. 16.
Surface Conduction, Inc., New York, N.Y. 846,628, pub. 1–9–68. Cl. 21.
Svenska Ackumulator Aktiebolaget Jungner, Oskarshamn, Sweden. 846,677, pub. 1–9–68. Multiple Class (Classes 23 and 26).
Swank, Inc.: *See*—
Baer & Wilde Co., The.
Sweetly Yours: *See*—
Fine Products Co., Inc.
Swift & Co., Chicago, Ill. 846,758, pub. 4–12–66. Cl. 46.
Takara Co., New York, Inc., Brooklyn, N.Y. 846,562, pub. 1–9–68. Multiple Class (Classes 13, 32, and 44).
Technical Rubber, Inc., West Haven, Conn. 727,312, canc. Cl. 50.
Telasco, Joseph: *See*—
Popstix Corp.
Telesco Brophey Ltd., Montreal, Quebec, Canada. 846,745–50, pub. 1–9–68. Cl. 41.
Testex, Inc., Newark, Del. 846,687, pub. 1–9–68. Cl. 26.
Texize Chemicals, Inc., Greenville, S.C. 846,521–2, pub. 1–9–68. Cl. 6.
Textron Inc., assignee of Bostitch, Inc., Providence, R.I. 836,565, cor. Cl. 13.
Textron Inc., Providence, R.I. 846,669–70, pub. 1–9–68. Cl. 23.
Textron Industries, Inc., Orange, N.J. 846,580, pub. 1–9–68. Cl. 16.
Textron Industries, Inc., New Brunswick, N.J. 846,582, pub. 1–9–68. Cl. 16.
Tito Abbo Junior y Hermanos, to Tito Abbo Junior y Hermanos, S.A., Maracaibo, Venezuela. 437,896, ren. 3–26–68. Cl. 46.
Tito Abbo Junior y Harmanos, S.A.: *See*—
Tito Abbo Junior y Hermanos.
Tobin Packing Co., Inc.: *See*—
Albany Packing Co., Inc.
Todd, Sam, Custom Clubs: *See*—
Todd, Sam W.
Todd, Sam W., d.b.a. Sam Todd Custom Clubs, Chattanooga, Tenn. 846,651, pub. 1–9–68. Cl. 22.
Transcriber Co., Inc., Attleboro, Mass. 846,711, pub. 1–9–68. Cl. 36.
Treville Inc., Clifton, N.J. 846,690, pub. 1–9–68. Cl. 26.
Trig-A-Tape Corp., Berkeley, Calif. 727,218, canc. Cl. 23.
Tube-Line Mfg. Corp.: *See*—
Midwood Industries, Inc.
Turner Mfg. Co., Chicago, Ill. 438,762, ren. 3–26–68. Cl. 32.
Tyler, W. S., Inc., Cleveland, Ohio. 846,658, pub. 1–9–68. Cl. 23.
Ultradynamics Corp., Paterson, N.J. 846,625–6, pub. 1–9–68. Cl. 21.
Unicut Co.: *See*—
Grabes, Walter.
United Air Lines, Inc., Chicago, Ill. 846,832, pub. 1–9–68. Cl. 105.
United Coatings, Inc., Chicago, Ill. 846,581, pub. 1–9–68. Cl. 16.
United States Banknote Corp., New York, N.Y. 846,691, pub. 1–9–68. Cl. 26.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 846,549–52, pub. 1–9–68. Cl. 12.
United States Rubber Co., Uniroyal, Inc., New York, N.Y. 752,183. Am. 7(d). Cl. 39.
United States Shoe Corp., The, Cincinnati, Ohio. 846,734, pub. 1–9–68. Cl. 39.
United States Trunk Co., Inc., Fall River, Mass. 846,512, pub. 10–10–67. Cl. 3.
Valmor Products Co.: *See*—
Neumann, Morton G.
Valor, Inc., New Bedford, Mass. 846,742, pub. 1–9–68. Cl. 39.
Valspar Corp., The, Rockford, Ill. 846,544, pub. 1–9–68. Cl. 12.
Val-Test Distributors, Inc.: *See*—
Norvell-Shapleigh Hardware Co.
Simmons Hardware Co.
Vanda Cosmetics Co.: *See*—
Rexall Drug & Chemical Co.
Vandalarm Systems, Inc., Houston, Tex. 846,610, pub. 1–9–68. Cl. 21.
Vaneli, Redding, Calif. 846,733, pub. 1–9–68. Cl. 39.
Venet, Philippe, Paris, France. 816,649, cor. Multiple Class (Classes 39 and 51).
Verley, Albert, & Co.: *See*—
Verley, Albert, Inc.
Verley, Albert, Inc., Chicago, Ill., to Albert Verley & Co., South Plainfield, N.J. 227,141, ren. 3–26–68. Cl. 6.
Vess Dry Co. of Ohio, to Vess Beverage Co., St. Louis, Mo. 555,776, new cert. Cl. 45.
Vesta: *See*—
Vesta, Inc.
Vesta, Inc., d.b.a. Vesta, New York, N.Y. 727,290, canc. Cl. 46.
Vim Corp., The, Fullerton, Calif. 846,757, pub. 1–9–68. Cl. 45.
Walker Laboratories, Inc., Mount Vernon, N.Y. 727,183, canc. Cl. 18.
Wall Rope Works, Inc., New York, N.Y. 727,153, canc. Cl. 7.
Wallace, R., & Sons Mfg. Co., Wallingford, Conn., to Hamilton Watch Co., Lancaster, Pa. 438,336–40, ren. 3–26–68. Cl. 28.
Wallace-Murray Corp., New York, N.Y., from Cen-Trific-Air Products, Inc., New Haven, Conn. 846,705, pub. 1–9–68. Cl. 34.
Warner, George, Seed Co., Inc., Hereford, Tex. 846,500, pub. 1–9–68. Cl. 1.
Warner & Swasey Co., The, Cleveland, Ohio. 846,678, pub. 1–9–68. Cl. 23.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 727,178, canc. Cl. 18.
Warren, Maurice R., Rev., d.b.a. Fun-Way Games, Pellston, Mich. 727,201, canc. Cl. 22.
Wayfarer Corp., d.b.a. Wayfarer Yacht Corp., Costa Mesa, Calif. 846,603, pub. 1–9–68. Cl. 19.
Wayfarer Yacht Corp.: *See*—
Wayfarer Corp.

Weinberg Corp., Chicago, Ill. 439,024, ren. 3–26–68. Cl. 39.
Wej-it Expansion Products, Inc., Broomfield, Colo. 846,558, pub. 1–9–68. Cl. 13.
Western Tablet & Stationery Corp., Dayton, Ohio. from White & Wyckoff Mfg. Co., Holyoke, Mass. 728,679, canc. Cl. 37.
Wheel Centre Co., Walnut Creek, Calif. 846,708, pub. 1–9–68. Cl. 35.
Whirlpool Corp., St. Joseph, Mich. 727,223, canc. Cl. 24.
White Horse Distillers, Ltd., Glasgow, Scotland. 846,770, pub. 1–9–68. Cl. 49.
Whitehall Pharmacal Co., to Whitehall Pharmacal Co., to American Home Products Corp., New York, N.Y. 437,628, ren. 3–26–68. Cl. 18.
Whitworth, Armstrong, (Marine) Ltd., Droxford, Southampton, England. 846,692, pub. 1–9–68. Cl. 26.
Woolfolk Chemical Works, Ltd., Fort Valley, Ga. 501,032, ren. 3–26–68. Cl. 6.
Wurzburg Bros., to Wurzburg Bros., Inc., Memphis, Tenn. 439,372 ren. 3–26–68. Cl. 23.
Wurzburg Bros., Inc.: *See*— Wurzburg Bros.
Yardley of London, Inc., Totowa, N.J. 846,792, pub. 1–9–68. Cl. 51.
Yawata Iron & Steel Co., Ltd., Marunouchi, Chiyoda-ku, Tokyo, Japan. 846,573–4, pub. 7–18–67. Cl. 14.
York, L. T., Co., Brookfield, Mo. 842,569–70, canc. Cl. 51.
Young, Robert E., Fargo, N. Dak. 846,826, pub. 1–9–68. Cl. 102.
Youngstown Sheet & Tube Co., The, Youngstown, Ohio. 846,661, pub. 1–9–68. Cl. 23.

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